

4. Environmental Evaluation

This chapter of the Draft Environmental Impact Report (EIR) is made up of 16 sub-chapters. This introduction describes the organization of this Draft EIR and the assumptions and methodology of the cumulative impact analysis. The remaining 16 sub-chapters evaluate the direct, indirect, and cumulative environmental impacts of the proposed Plan. The potential environmental effects of the proposed project are analyzed for the following issues areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services and Recreation
- Transportation and Traffic
- Utilities and Service Systems
- Wildfire

Due to the past and current uses of the project site, no environmental impacts associated with Agriculture and Forestry Resources or Mineral Resources are expected to occur as a result of the proposed project. These resource topics will not be addressed further in this chapter.

CHAPTER ORGANIZATION

This chapter consists of 16 sub-chapters that evaluate the environmental impacts of the proposed Concord Hills Regional Park Land Use Plan, referred to as the “proposed project” or “proposed Plan.” Each sub-chapter uses generally the same organization and consists of the following subsections:

- The *Regulatory Framework* section describes which local, State, and/or federal regulations are applicable to the proposed Plan.
- The *Existing Conditions* section describes current conditions with regard to the environmental issue area reviewed.

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- The *Thresholds of Significance* section describes how an impact is judged to be significant in this Draft EIR. These standards are derived from CEQA Appendix G Guidelines.
- The *Impact Discussion* assesses potential impacts (direct and indirect) and explains why impacts were found to be significant or less than significant. This section also presents recommended mitigated measures, where applicable.
- The *Cumulative Impacts* section analyzes impacts that the proposed Plan may have when considered in addition to other past, present, and reasonably foreseeable projects. (See further discussion below.)

CUMULATIVE IMPACT ANALYSIS

A cumulative impact consists of an impact created as a result of the combination of the project evaluated in the EIR together with other reasonably foreseeable projects causing related impacts. Section 15130, Discussion of Cumulative Impacts, of the CEQA Guidelines requires an EIR to discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable." Used in this context, cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Where the incremental effect of a project is not "cumulatively considerable," a lead agency need not consider that effect significant, but must briefly describe its basis for concluding that the effect is not cumulatively considerable. The cumulative impacts discussions in Chapters 4.1 through 4.16 explain the geographic scope of the area affected by each cumulative effect (e.g., immediate project vicinity, city, county, watershed, or air basin). The geographic area considered for each cumulative impact depends upon the impact that is being analyzed. For example, in assessing aesthetic impacts, the pertinent geographic study area is the vicinity of the areas of development associated with implementation of the proposed Plan from which the new development can be publicly viewed and may contribute to a significant cumulative visual effect. In assessing macro-scale air quality impacts, on the other hand, all development within the air basin contributes to regional emissions of criteria pollutants, and basin-wide projections of emissions is the best tool for determining the cumulative effect.

Section 15130 of the CEQA Guidelines permits two different methodologies for completion of the cumulative impact analysis. The first is the "list approach," which requires a listing of past, present, and reasonably anticipated future projects producing related or cumulative impacts. The second is the projections-based approach, wherein the relevant growth projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions are summarized. A reasonable combination of the two approaches may also be used.

The cumulative impact analysis in this Draft EIR relies on a list-approach of past, present, and probable future projects in the vicinity of the project site that, when considered with the effects of the project, may result in cumulative effects. In some instances, the cumulative analysis discussions contained in Chapters 4.1 through 4.16 include a discussion of the growth projections and references to specific projects as

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relevant to the impact analysis. In 2019, the following development projects are within the vicinity of the project site:

- City of Concord:
 - Conco Commercial Building (56,154-square-foot project in the Northpoint Business Park)
 - Concord Reuse Project (13,000 housing units and 8.4 million square feet of commercial, including the planned Tournament Sports Complex, and campus/institutional space planned to the west of the project site within the former Concord Naval Weapons Station)
 - Concord Village (230 multi-family-unit entitled project at 2400 Salvio Street)
 - Argent (181 multi-family-unit entitled project at 2400 Willow Pass Road)
 - Renaissance Phase 2 (179 multi-family units under construction at 1825 Galindo Street)
- City of Pittsburg:
 - San Marco Village M (318 multi-family-unit approved project on West Leland Road east of San Marco Boulevard)
 - San Marco Village D (233 single-family units under construction on Santa Teresa Drive)
 - San Marco Villages E, F, J, K, L, and N (706 single-family units under construction southwest of West Leland Road and San Marco Boulevard)
 - San Marco Toscana (252 single-family units under construction on the northeast corner of San Marco Boulevard and West Leland Road)
 - Alves Ranch (167 single-family units approved north of West Leland Road at Alves Ranch Road)
 - Lawlor Estates (50 single-family units under construction south of West Leland Road between Lawlor Court and Delta Vista Lane)
 - Faria/Southwest Hills Annexation proposal (up to 1,500 residential units proposed on 600 acres southwest of the Pittsburg city limit, adjoining the future Regional Park's eastern boundary)
 - Montreux Residential Subdivision (351 single-family homes approved on the west side of Kirker Pass Road immediately south of the Pittsburg city limit)
- Contra Costa County:
 - Keller Canyon Landfill expansion project

The following provides a summary of the cumulative impact scope for each impact area:

- **Aesthetics and Visual Resources:** The cumulative impact for aesthetics includes potential future development under the proposed project combined with effects of development on lands adjacent to the project site.
- **Air Quality:** Cumulative air quality impacts could occur from a combination of the proposed Plan combined with regional growth within the San Francisco Bay Area Air Basin (SFBAAB), based on regional population and employment projections identified by the Association of Bay Area

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Governments (ABAG) and growth in vehicle miles traveled (VMT) identified by the Contra Costa Transportation Authority.

- **Biological Resources:** Cumulative impacts to biological resources considers growth under the proposed Concord Reuse Project and Faria/Southwest Hills project sites as well as development sites in Concord, Pittsburg, and Contra Costa County. In addition, areas farther east and south in Contra Costa County that provide habitat types similar to those in the project area are included within the region of influence for this analysis.
- **Cultural Resources:** Cumulative impacts to cultural resources could occur from development planned in the vicinity of the project site. Projects in the geographic scope include the Concord Reuse Project, the Faria/Southwest Hills project, and the Keller Canyon Landfill Expansion project as well as projects in adjacent areas of Concord, Pittsburg, and Contra Costa County.
- **Energy:** The area considered for cumulative impacts to energy consumption is the service area of Pacific Gas & Electric.
- **Geology and Soils:** Potential cumulative geological impacts could arise from a combination of development allowed by the proposed Plan together with future development in Concord.
- **Greenhouse Gas Emissions:** The cumulative impact analysis for greenhouse gas (GHG) emissions is related to regional growth within the SFBAAB, based on regional population and employment projections identified by ABAG and VMT growth identified by the CCTA.
- **Hazards and Hazardous Materials:** The hazardous materials study area considered for cumulative impacts consists of the project site, Concord Reuse Project area, and other development sites located in the immediate vicinity of the project site.
- **Hydrology and Water Quality:** The geographic scope of groundwater cumulative impacts is the Clayton Valley groundwater basin. The geographic scope of surface water hydrology cumulative impacts is the Mount Diablo Creek watershed. The geographic scope of water quality impacts includes both the groundwater basin and the watershed. The Hydrology and Water Quality analysis considers growth in these geographies together with implementation of the proposed Plan.
- **Land Use and Planning:** The Land Use and Planning analysis takes into account development associated with implementation of the proposed project, in combination with impacts from projected growth in the rest of Contra Costa County and the surrounding region, as forecast by the ABAG. The geographic context includes the proposed project combined with lands adjacent to the project site within Concord, Pittsburg, and Contra Costa County.
- **Noise:** The cumulative impact for noise includes potential future development under the proposed project combined with effects of development on lands within the project site vicinity in Concord, Pittsburg, and unincorporated Contra Costa County.
- **Population and Housing:** Impacts from cumulative growth are considered in the context of development associated with implementation of the proposed Plan, as well as projected growth from the rest of Contra Costa County, as forecast by ABAG.
- **Public Services and Recreation:** Cumulative impacts are considered in the context of development associated with implementation of the proposed Plan along with estimated growth within the city.

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- **Transportation and Traffic:** The geographic scope of analysis for cumulative impacts on transportation and traffic conditions encompasses the road network that would serve the future Regional Park. Projects in the geographic scope include the Concord Reuse Project, the Faria/Southwest Hills project, the Keller Canyon Landfill Expansion project as well as other development projects in Concord, Pittsburg, and Contra Costa County.
- **Utilities and Service Systems:** Cumulative impacts are considered in the context of the development under the proposed Plan combined with the estimated growth in each utility's service area.
- **Wildfire:** The areas considered for cumulative impacts related to wildfires are the State Responsibility Area and the wildfire urban interface area.

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4.1 AESTHETICS

This chapter describes aesthetics, which is the existing visual resources and the physical features that make up the landscape within the future Regional Park. The chapter evaluates changes to those features that could occur from build-out of the proposed Land Use Plan, and whether or not those changes are potential impacts. The chapter also examines the regulatory framework and existing conditions on the project site related to the project's aesthetics visible from public areas.

The City of Concord, in a letter to the Park District dated July 27, 2017, sent in response to the Notice of Preparation of this Draft EIR, expressed concerns with the visual impacts from park uses near the ridgeline of Los Medanos Hills. These concerns are addressed in impact discussion AES-3, below.

4.1.1 ENVIRONMENTAL SETTING

4.1.1.1 REGULATORY FRAMEWORK

This section summarizes key State, District, and local regulations and programs related to aesthetics, which the District considered in evaluating the potential for the Land Use Plan to have a significant effect on aesthetic resources. There are no specific federal regulations applicable to aesthetics.

State Regulations

California Scenic Highway Program

The California Scenic Highway Program, maintained by the California Department of Transportation (Caltrans), protects State scenic highway corridors from changes that diminish the aesthetic value of lands adjacent to the highways. Caltrans has not designated any highway within the vicinity of the project site as a State scenic highway. The closest scenic highway is Interstate 680 in Walnut Creek, south of the Interstate 680/State Route 24 junction.¹

California Building Standards Code

Title 24 in the California Code of Regulations (CCR) is the California Building Standards Code. Part 6 of Title 24 is the California Energy Code (CEC), which includes standards for lighting to improve energy efficiency and reduce light pollution and glare by regulating light power, brightness, and sensor controls.

Part 11 of Title 24 is the California Green Building Standards Code, known as CALGreen. CALGreen establishes building standards aimed at enhancing the design and construction of buildings through the use of building concepts that have a reduced negative impact or positive environmental impact. CALGreen encourages sustainable construction practices and includes standards for planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and

¹ California Department of Transportation California Scenic Highways Program, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm, accessed on January 8, 2018.

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environmental quality. Section 5.106.8, Light Pollution Reduction, specifically establishes Backlight, Uplight, and Glare (BUG) ratings to minimize the effects of light pollution for non-residential development.

District Regulations

East Bay Regional Park District Master Plan 2013

The 2013 District Master Plan (Master Plan) defines the long-term mission and vision for lands managed by the District. The Vision statement from the Master Plan is:

“The District envisions an extraordinary and well-managed system of open space parkland in Alameda and Contra Costa counties, which will forever provide the opportunity for a growing and diverse community to experience nature nearby.”

The Master Plan includes policies for addressing visual resources in two sections which are applicable to the proposed project:

- *Key Elements of the Planning Process (KEP)*
 - Policy KEP4: The District will participate in efforts to protect scenic or cultural resources, develop larger, multi-agency open space preserves, provide recreational opportunities, protect agricultural use, avoid hazards and plan for appropriate urban growth boundaries. The District will work with other jurisdictions to develop open space preservation plans and policies that recognize the District’s public interests in open space preservation and that are consistent with Board policy.
- *Planning for Regional Parks and Trails (PRPT)*
 - Policy PRPT24: The District will seek to locate facilities in a manner that preserves open space whenever possible. The District will design proposed facilities so that their color, scale, style and materials will blend with the natural environment. Park improvements will be designed to avoid or minimize impacts on wildlife habitats, plant populations and other resources.
 - Policy PRPT28: New utility lines will be placed underground on land owned, operated, or managed by the District to retain the optimal visual qualities of the area. Rights of way and easements for utilities will not be granted without under-grounding. The District will work in cooperation with the utility companies to place existing overhead utilities underground (unless so doing conflicts with applicable codes) as soon as practical and will work with other agencies and neighbors to reduce visual impacts on adjacent lands. The District will seek to avoid the construction of high voltage power lines within the parklands, particularly in areas of sensitive or aesthetically important resources and in preserve areas.
 - Policy PRPT29: The District will keep its lands, including all ridges and peaks, free of additional communication facilities in order to maintain open viewshed, natural conditions and public use as well as to limit vehicular and service activities. Communication sites will be regulated by the provisions the Communication Site Policy which states that no new licenses will be granted beyond December 31, 1999, except for efforts that will consolidate sites or improve visual quality. The District will work to reduce the detrimental visual impact of buildings, towers and access

roads at existing sites and will work with other agencies and neighbors to reduce this impact on adjacent lands.

Local Regulations

City of Concord, 2030 General Plan

The Land Use and Parks, Open Space and Conservation Elements of the General Plan include the following goals and policies specific to aesthetics and applicable to the proposed project.

- Goal LU-1: Livable and Enjoyable Residential Neighborhoods.
- 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.
- Goal LU-9: Well-Designed Development
- Goal LU-10: High-Quality Urban Design in Public Spaces and Infrastructure
 - Policy LU-10.1.4: Enhance the appearance of the streetscape by expanding and maintaining Concord's landscaping within its public rights-of-way.
 - Policy LU-10.1.5: Require trees and other landscaping within parking lots.
 - Policy LU-10.1.7: Implement urban design measures which visually and functionally integrate the Concord Reuse Project site into the existing City and reduce perceptions that the site is a separate community.
- Goal LU-11: Open Space Protection
- Goal POS-2: Protection and Accessible Open Space Systems
- Goal POS-3: Well-Planned Natural Resource Conservation
- Principle POS-3.1: Preserve and Protect Water Quality.
 - Policy POS-3.1.2: Preserve and restore native riparian vegetation and wildlife, and establish riparian corridors along all creeks.
- Principle POS-3.4: Preserve and Protect Wildlife and Vegetation Resources.
 - Policy POS-3.4.1: Conserve wildlife habitat and wildlife corridors, including seasonal migration routes, and require appropriate mitigation in the event such areas are impacted by development.
 - Policy POS- 3.4.3: Retain significant vegetation, including native vegetation and heritage trees, where feasible, and require replacement plantings as appropriate for mitigation.

Concord Reuse Project Area Plan

The Concord Reuse Project Area Plan (Area Plan) includes policies and standards for land use, transportation, environmental protection, labor agreements, affordable housing, and public safety for the conversion of land uses within the Inland Area of the Concord Naval Weapons Station (CNWS) to civilian

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use. The land that makes up the Area Plan includes the project site. Adopted by the City Council in 2012, the Area Plan adapted goals and concepts developed in the Concord Community Reuse Project Reuse Plan (Reuse Plan) that articulate the community's preferred vision for the area. The Reuse Plan was adopted in 2010. The Area Plan involves development of over 12,200 new housing units, over 6.1 million square feet of commercial floor space, and a variety of community facilities and city parks primarily clustered on the western portion of the former base. The Plan provides a principle and policies applicable to the aesthetics of the project site.

- Principle C-1: Avoid adverse impacts on sensitive natural resources. If adverse impacts cannot be avoided, take steps to minimize them. If impacts remain unavoidable, mitigate them to the greatest extent practical.
 - Policy C-1.1: Resource Conservation. Encourage new development to preserve natural elements that contribute to the community's ecological value and aesthetic character.
 - Policy U-8.2: Siting of Telecommunication Facilities. Ensure that any telecommunication facilities developed on the site are consistent with the overall standards and policies of the Area Plan, including the preservation of scenic views and vistas; conservation of sensitive habitat areas and natural topography; and protection of public health and safety.

City of Concord Municipal Code

The Concord Municipal Code (CMC), organized by Title, Chapter, and Section, includes all ordinances for the City. Title 18, Development Code, includes regulations relevant to visual resources in Concord as follows:

- **Chapter 8.40 Trees and Shrubs.** This chapter provides a standard method for proper care of trees, shrubs and hedges in parks and public places, including street trees.
- **Chapter 15.45 Green Building Standards Code.** This chapter adopts CALGreen.
- **Chapter 18.150 General Development Standards.** This chapter details the development standards established in Title 18, Division II (Zoning Districts), by addressing site planning and project design to ensure that new development is compatible with existing and future development and is consistent with the General Plan.
- **Chapter 18.165 Landscaping.** This chapter establishes requirements for landscaping to improve the livability and attractiveness of the city, enhance the appearance of development, provide shade, reduce heat and glare, and screen and buffer incompatible uses.
- **Chapter 18.415 Design and Site Review.** Section 18.415.080 of this chapter establishes the design guidelines and other criteria upon which the City's design review recommendations shall be based. Criteria include compatibility with the visual character of an area; preservation of major views and vistas along major streets and open spaces and trails; provision of adequate light for safety and security while minimizing glare; and compatibility with neighboring development through harmonious transitions in building scale and character. Section 18.415.090 of this chapter describes the design review process that was established in order to ensure the orderly development of the City with proper attention to the harmony, compatibility, and aesthetic quality of site design, architecture, landscape architecture, signs, and engineering.

- **Chapter 18.300 Hillside Protection.** This chapter establishes regulations to minimize impacts of hillside development and protect views in hillside areas. These regulations are intended to ensure that the design of new development complements existing topography, resulting in a natural and unobtrusive appearance, and minimizes risk of personal injury, water quality impacts, and property damage from natural hazards.
- **Chapter 18.310 Tree Preservation and Protection.** This chapter establishes regulations for the protection, preservation, maintenance, removal, and replacement of trees associated with new construction and development.

City of Concord Community Design Guidelines

The City's Design Guidelines, adopted August 1987, are the recommended desirable design principles for projects in the city. The Guidelines cover topics that include area context, site plan, amenities, building design, landscape design, parking, signage, and utilities, and are utilized in the development review process to ensure that new development is consistent with the existing character of the city.

Contra Costa County General Plan

The Open Space Element of the County's General Plan describes scenic ridges, hillsides, rock outcroppings, and the San Francisco Bay/Delta estuary system as main scenic resources in the county, and includes the following goal and policies relevant to the project area. Although the County's General Plan does not apply directly to the project site, the project site borders unincorporated lands and therefore could affect, or be affected by, visual change on County lands.

- Goal 9-E: To protect major scenic ridges, to the extent practical, from structures, roadways, and other activities which would harm their scenic qualities.
 - Policy 9-12: In order to conserve the scenic beauty of the county, developers shall generally be required to restore the natural contours and vegetation of the land after grading and other land disturbances. Public and private projects shall be designed to minimize damage to significant trees and other visual landmarks.
 - Policy 9-13: Providing public facilities for outdoor recreation should remain an important land use objective in the county, as a method of promoting high scenic quality, for air quality maintenance, and to enhance outdoor recreation opportunities of all residents.
 - Policy 9-18: Construction of new structures on the top of major scenic ridges or within 50 feet of the ridgeline shall be discouraged.
 - Policy 9-19: When development is permitted to occur on hillsides, structures shall be located in a manner which is sensitive to available natural resources and constraints.
 - Policy 9-20: Hilltops, ridges, rock outcroppings, mature stands of trees, and other natural features shall be considered for preservation, at the time that any development applications are reviewed.
 - Policy 9-21: Any new development shall be encouraged to generally conform with natural contours to avoid excessive grading.

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City of Pittsburg General Plan and Municipal Code

Although the City of Pittsburg’s policies and regulations do not apply directly to the project site, the project site borders land in Pittsburg’s sphere of influence, and therefore could affect, or be affected by, visual changes on adjacent lands in Pittsburg.²

The Land Use Element of the General Plan includes the following goals and policies specific to aesthetics and applicable to the project area.

- Goal 2-G-1: Maintain a compact urban form within the City’s projected municipal boundary. Ensure that hillside lands not environmentally suitable for development are maintained as open space.
- Goal 2-G-8: Ensure that hillside development enhances the built environment, improves safety through slope stabilization, is respectful of topography and other natural constraints, and preserves ridgelines and viewsheds.
- Policy 2-P-23: Restrict development on minor and major ridgelines (as identified in Figure 4-2). Encourage residential construction on flatter natural slopes or non-sensitive graded areas that reduce environmental and visual impacts. Minimize cut-and-fill of natural hillsides.
- Policy 2-P-26: Ensure that new hillside development utilizes fire-resistant building materials, per the Uniform Building Code. Require that all residential units adjacent to open slopes maintain a 30-foot setback with fire resistant landscaping.

The Pittsburg Municipal Code (PMC), organized by Title, Chapter, and Section, includes all the ordinances for the City. Title 18, Development Code, includes regulations relevant to visual resources in Pittsburg as follows:

- **Chapter 18.56, Hillside Planned District.** This chapter establishes regulations to protect public health, safety, and welfare with regard to hillside development and protect natural topographic features, aesthetic views, vistas and prominent ridgelines, and adjacent properties from potential adverse impacts of grading and drainage associated with hillside development. The chapter also encourages compatibility of development to the terrain.

4.1.1.2 EXISTING CONDITIONS

This section describes the existing visual character of the project site.

Visual Character

The project site is located along the Los Medanos Hills in the eastern portion of Concord, along the border with undeveloped land within Pittsburg and unincorporated Contra Costa County. There are three highways in proximity to the northwest boundary of the project site—Highways 4 and 242 and Interstate 680. Willow Pass Road and Bailey Road cross the site and connect to Highway 4. The primary entrance point to the site is currently through the Military Ocean Terminal of Concord off Port Chicago Highway to

² See City of Pittsburg, 2018, Faria/Southwest Hills Annexation” Draft Environmental Impact Report, SCH#2017032027.

the north of Highway 4. The visual and aesthetic character of the project site and the prominent visual features of the regional landscape are described below. An aerial view of the project site and surrounding area is shown on Figure 3-3, Local Context, in Chapter 3, Project Description, of this Draft EIR.

Visual Features of the Project Site

The natural topography of the project site slopes gently upward from the west to east, with grades ranging from zero to ten percent. The project site elevations range from approximately 100 feet above mean sea level at the western border to 1,000 feet above mean sea level at the eastern border. As described in Chapter 3, Project Description, the 2,543-acre site has been developed with naval weapons storage facilities since 1945, which include vacant structures, a road and rail network, magazines, and experimental forestry research stands planted by the University of California Cooperative Extension and the U.S. Forest Service Institute of Forest Genetics. In addition to the experimental forestry stands, there are approximately 100 acres of Oak Woodland/Savannah on the site, which consists of groves of various oak species and buckeye trees throughout the site, primarily in drainage areas. Trees within the Oak Woodland/Savannah include coast live oak (*Quercus agrifolia*), blue oak (*Quercus douglasii*), valley oak, and scattered buckeye trees (*Aesculus californica*). Many of these trees are large and dramatic in form, creating a distinctive view on the hillside, and many meet the definition of a protected tree.³ The magazines are located in flat areas of the site, constructed as small, poured-in-place concrete covered in earth. The magazines have a barrel vault roofline and have the appearance of a large berm along the valley floor, varying in height from 15 to 20 feet. The experimental forestry stands encompass approximately 90 acres within the total Concord Reuse Project area and are planted with various pine and eucalyptus species. Within the project site, there is one large stand near the Cistern Pond and three smaller stands along Kinne Boulevard, north of Bailey Road.

The Los Medanos Hills are characterized by rolling hills dominated by California annual grasslands and small clusters of oak woodlands. Some views of the hills also include water storage tanks, existing paved and unpaved roads, and some smaller structures used during the site's operation as a naval weapons storage facility. From the higher elevations of the project site, there are views across the Diablo Valley and to the Sacramento-San Joaquin Delta, Suisun Bay and Bayfront lands, and surrounding open space, such as Black Diamond Mines Regional Preserve and Mount Diablo State Park. Both upland and lowland areas of the site are visible from off-site locations. Lowland elevations of the site, including the magazines, railway and road network, and larger naval operations buildings are visible from State Route 4. Views within the site include south-facing sloping hills on the higher elevations.

Visual Features of the Areas Surrounding the Project Site

The project site, as stated above, has gentle slopes that range between zero and ten percent and rise from the flat valley floor adjacent to the western boundary of the project site. The Los Medanos Hills form the eastern boundary of the project site, with elevations ranging from 800 feet to 1,000 feet. Magazines, former CNWS buildings, and the existing rail and roadway network are visible from the perimeter of the

² East Bay Regional Park District, 2015, Concord Hills Regional Park Biological Resources Existing Conditions Report.

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site as well as from the roads that traverse the project site.⁴ As described in Chapter 3, Project Description, the site is bounded on the north and west by the remainder of the Concord Reuse Project area and existing residential neighborhoods. Diablo Valley and Los Medanos Hills are visible from the areas surrounding the project site. The southern border is adjacent to Kirker Pass Road, followed by the Concord Pavilion, which is approximately 100 feet above the elevation of the site. Views to the Los Medanos Hills are visible from the southern border. The eastern border consists of the undeveloped Los Medanos Hills, which slope downward toward the site. The ridgeline meanders across the eastern boundary with some areas providing 360-degree views from the project site. From these higher elevations along the western boundary, there are views to the Suisun Bay and Bayfront lands, Sacramento-San Joaquin Delta, Diablo Valley, and surrounding open space. The Los Medanos Hills are visible from nearby transportation corridors, including Highway 4. The eastern boundary of the project site incorporates a portion of the ridgeline, which may be developed into residential uses within the buildout horizon of the proposed project, transforming the visual character of the project site⁵.

Scenic Vistas and Roads

Scenic vistas are generally interpreted as long-range views of a specific scenic feature (e.g., open space lands, mountain ridges, bay, or ocean views). A scenic road is defined as a highway, road, drive, or street that provides opportunities for the enjoyment of natural and human-made scenic resources in addition to its transportation function. Scenic roads direct views to areas of exceptional beauty, natural resources or landmarks, or historic or cultural interest. The aesthetic values of scenic routes can be protected and enhanced by regulations governing the development of property and the placement of outdoor advertising. There are no scenic vistas or roads designated by the cities of Concord and Pittsburg, nor by Contra Costa County in the project site and vicinity.^{6,7,8} Further, there are no State-designated scenic roadways in the project site and vicinity.⁹

Scenic Quality Field Surveys

The Navy's Environmental Impact Statement (EIS) evaluated existing scenic quality from several key observation points (KOP), one of which, KOP 4, Bailey Road, is located on the southern portion of the project site. KOP 4 is characterized as a panorama landscape. The EIS states that the foreground of the scenic nature of KOP 4 is characterized by grassy, rolling-hill slopes with distant views that include a break in vegetation and structures that are defined by a change in color. The EIS further states that, although there is scenic quality of the project site at the site of KOP 4, those viewing the site at this location are

⁴ City of Concord, 2008, Concord Community Reuse Project Draft EIR, page S-1.

⁵ City of Pittsburg, "Faria/Southwest Hills Annexation" Draft Environmental Impact Report, 2018 (SCH#2017032027).

⁶ City of Concord 2030 Urban Area General Plan, 2007, Chapter 3, Land Use.

⁷ Contra Costa County General Plan 2020, 2000, Figure 9-1 Scenic Ridges and Waterways.

⁸ City of Pittsburg 2020 General Plan, 2001, Chapter 2, Land Use.

⁹ State of California Department of Transportation, California Scenic Highway Mapping System, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/, accessed on April 13, 2018.

doing so for a relatively short length of time, and have their vision obstructed by motion of other vehicles, which overall detracts from the scenic quality of the site.¹⁰

Light and Glare

Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass or spill to adjacent sensitive receptors (e.g., residential development), sky glow, and over-lighting. Views of the night sky are an important part of the natural environment. Excessive light and glare can be visually disruptive to humans and nocturnal animal species. Light pollution in the project site and vicinity is minimal and is restricted primarily to street lighting along major arterial streets, State Routes 4 and 242, and night-time illumination of the Concord Pavilion. Light spillage from residential areas is mostly well screened by trees, and from the Concord Pavilion by topography that slopes gently across Kirker Pass Road.

Existing Viewsheds

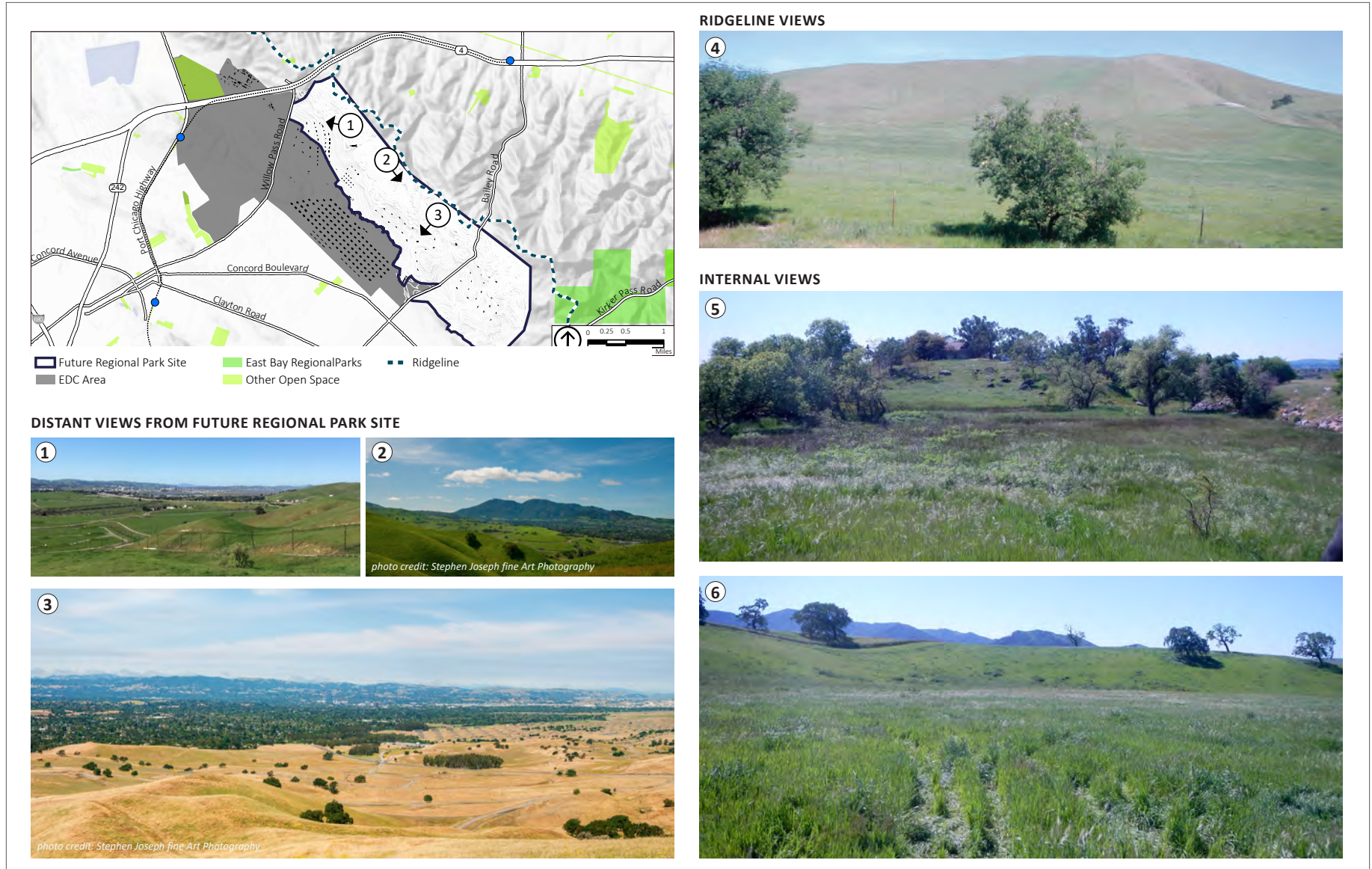
Viewsheds refer to the visual qualities of a geographical area that are defined by the horizon, topography, and other natural features that give an area its visual boundary and context, or by development that has become a prominent visual component of the area. Public views are those which can be seen from vantage points that are publicly accessible, such as streets, freeways, parks, and vista points. These views are generally available to a greater number of persons than private views. Private views are those views that can be seen from vantage points located on private property. Blockage of private views is not necessarily considered to be an impact under CEQA when interrupted by land uses on adjacent properties. Accordingly, this chapter is focused on the potential new development that could occur on the project site that would be visible from public viewing points and could result in a potentially significant aesthetic impact under CEQA.

The proposed project includes the potential for the development of future buildings associated with the recreation and staging facilities. The existing publicly-accessible viewshed in this area includes Newhall Park, and roadways include Willow Pass Road, Kinne Boulevard, Panoramic Drive at Port Chicago Highway (North Concord BART Station), Highway 4, and Bailey Road. Views from these locations in proximity to the project site include existing development and associated landscaping in the near-field viewshed and the surrounding natural hillsides and natural ridgelines in the far-field viewshed. It is also important to note that, as described above, the publicly-accessible areas surrounding the project site are not recognized by the City or the State as scenic viewing locations; a scenic viewing location is a distinct location where people gather with a reasonable expectation of having a view of a scenic resource.

Distant views from the ridgelines at the project site include Mount Diablo and existing residential development to the south, the Sacramento-San Joaquin Delta to the east, and the Suisun Bay and the Sacramento River to the north. Port Chicago is also visible from higher vantage points in the project site to the northeast. Figure 4.1-1 shows six distant viewpoints visible from the project site.

¹⁰ Department of the Navy, Naval Facilities Engineering Command Headquarters, Base Realignment and Closure Program Management Office West, August 2017, Final Environmental Impact Statement (EIS) for the Disposal and Reuse of the Former Naval Weapons Station Seal Beach, Detachment Concord in Concord, California, pages 3-215 to 3-216.

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Source: PlaceWorks, 2018.

Figure 4.1-1
 Viewpoints

Views from Points West toward the Los Medanos Hills

View 4 on Figure 4.1-1 shows a perspective looking east toward the project site from adjacent development near Willow Pass Road. As shown from View 4, the Los Medanos Hills ridgeline is visible in the background; the grassy hills of the site and existing trees are visible in the foreground.

Views from the Ridgeline toward Port Chicago and Suisun Bay and Mount Diablo

Views 1 and 2 on Figure 4.1-1 show perspectives looking southwest toward Port Chicago and looking southeast toward Mount Diablo. As shown from View 1, Port Chicago is visible in the background. The tidal area of the Naval Weapons Station is also visible from higher points to the northeast of the project site. This perspective provides a view of industrial development located on the water; the existing trail network and magazines are visible in the foreground. As shown in View 2, Mount Diablo is visible in the background.

From the higher elevations of the project site along the ridgeline, the undeveloped corridor connecting the park to Mount Diablo is visible; rolling hills and trees are visible in the foreground.

Views from the Ridgeline toward Adjacent Development and the Sacramento-San Joaquin Delta and Suisun Bay

View 3 on Figure 4.1-1 shows a perspective looking south toward adjacent development in Concord, the nearby cities of Walnut Creek and Pleasant Hill, and unincorporated Contra Costa County. As shown, urban development is visible in the background and will be in more immediate view as the Concord Reuse Project area develops through the year 2035; rolling hills and trees are visible in the foreground.

Internal Viewsheds

Views 5 and 6 on Figure 4.1-1 show perspectives within the site. As shown, the south-facing slopes that characterize the upper portion of the property are largely unscarred by the existing roadway network. The grazed hillsides are characterized by existing buildings, vegetation, grasslands, and wildflower meadows, while historic oaks are scattered throughout the site; riparian vegetation extends into drainage areas.

As seen in View 4 on Figure 4.1-1, the view from the east side of Building IA-24 consists of flat grassy space followed by a steep, sculpted hillside. The northern edge of the view contains historic magazines, while the southern edge contains a corral.

4.1.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant aesthetic impact if it would:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

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3. Substantially degrade the existing visual character or quality of public views of the site and its surroundings.
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.1.3 IMPACT DISCUSSION

AES-1	The project would not have a substantial adverse effect on a scenic vista.
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As described above, public views of scenic corridors are considered those views as seen along a linear transportation route, and public views of scenic vistas are views of specific scenic features. Scenic vistas are generally interpreted as long-range views, while scenic corridors may provide short-, middle-, and/or long-range views. The Concord, Pittsburg, and Contra Costa County General Plans do not designate scenic vistas or roads in the project vicinity. However, the General Plans of each jurisdiction include policies that enforce the protection of views of natural hillsides and natural ridgelines. Therefore, for the purposes of this analysis, long-range views across the Diablo Valley to the west, to the Sacramento-San Joaquin Delta and Suisun Bay and Bayfront lands to the north and northeast, and of surrounding open space, such as Black Diamond Mines Regional Preserve and Mount Diablo State Park, are considered scenic vistas.

As described above, the project site comprises naval weapons storage facilities, which include structures, a road and rail network, and magazines ranging from one to three stories, as well as mature trees of 5 to 60 feet in height. The proposed project would result in new development potential of up to 86 acres of recreational uses (including 35 acres within Recreation/Staging Units and approximately 50 acres of trails). For the purposes of this evaluation, it is assumed that the areas where future structures could potentially obstruct a view would be in the areas designated for recreation/staging unit facilities as shown on Figure 3-7, Overview of the Proposed Regional Park, in Chapter 3, Project Description, of this Draft EIR. The remainder of the project site would provide a mix of park and conservation open space uses that would be generally undeveloped.

Given that implementation of the proposed Plan could result in potential future buildings that would be limited to two to five stories (35 to 55 feet) in height, the proposed project would not block far-field views from various publicly accessible views surrounding the project site. Additionally, the publicly accessible areas surrounding the project site are not recognized by the City or the State as scenic viewing locations; that is, a distinct location where people gather with a reasonable expectation of having a view of a scenic resource. Therefore, future development under the proposed project would not further block or obstruct public views of scenic vistas from ground-level public viewing. Similar views would continue to be visible along the project site.

As described in Chapter 3, Project Description, of this Draft EIR, the proposed project includes strategies that, once implemented, would further the protection of scenic resources in the project vicinity. For example, development of the project would involve removal of unutilized utility lines and infrastructure that obstructs long-range views and/or detracts from the character of this site; native vegetation and

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existing topography would be used to frame views and screen undesirable features. In addition, the project would reduce the overall road density within the hills and focus recreation and staging units in the lower elevations of the site. In addition, future development under the proposed project would be required to comply with the City's General Plan and District's Master Plan policies (listed in Section 4.1.1), which seek to preserve existing views within the cities of Concord and Pittsburg and Contra Costa County. The proposed project would also be required to comply with CMC Chapter 18.415, Design and Site Review, which requires projects to undergo the City's design review process. Consistency with these regulations would further ensure that future development under the proposed project would result in a *less-than-significant* impact to scenic vistas.

Significance without Mitigation: *Less than significant.*

AES-2 **The project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.**

A scenic road is defined as a highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and human-made scenic resources. There are no designated scenic vistas or roads within the project site or vicinity by the cities of Pittsburg and Concord, Contra Costa County, or Caltrans. Accordingly, *no impact* with respect to scenic resources within a State scenic highway would occur.

Significance without Mitigation: *No impact.*

AES-3 **The project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings.**

Future development allowed under the proposed project would represent a change to the existing visual character of the project site from structures, a road and rail network, magazines, and experimental forest stands to a continuous linear mix of park and conservation uses that would be generally undeveloped. As described under impact discussion AES-1, potential future recreation and staging unit facilities would be concentrated within the site and located at lower elevations. Trails developed at mid-slope within the site would be visible from long distances, while trails along the flat valley bottom would not be readily visible from off site. Potential future buildings' form and massing would largely reuse existing buildings on site. While renovation of existing buildings could represent a substantial change to the existing visual character of the specific building areas, proposed renovations would generally be consistent with the overall character of the site in terms of scale. In addition, implementation of the proposed project would introduce park and recreational uses with native plantings and areas restored to their natural habitat, interspersed with picnic areas, campgrounds, a community orchard, and educational spaces that can be used by neighboring residents.

While implementation of the proposed project would result in a change to the existing visual character of the site itself, potential future development activities would be limited to a small area of the site (five percent of the total acreage). The remainder of the project site would provide conservation areas, similar

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to the existing open space areas. In addition, implementation of the proposed project would result in the restoration of the magazines, orchard trees, and Corporation Yard consistent with the City's Area Plan. To ensure a consistent style and to reference the site's former use, all structures, including renovations and new construction, would utilize an architectural style that is consistent with the industrial style of CNWS, such as concrete and steel construction, large windows for daylighting, and open floor plans. Further, all renovations and new construction would employ sustainable, green design and technologies such as natural lighting, passive heating and cooling, and the selection of sustainable materials.

As described under impact discussion AES-1, the proposed Plan includes strategies that, once implemented, would further the protection of scenic resources in the project vicinity. In addition, future development under the proposed Plan would be required to comply with the City's General Plan and District's Master Plan policies, which seek to provide high-quality urban design in public spaces and infrastructure and ensure that hillside development enhances the built environment. The proposed project would also be required to comply with the City's development standards per CMC Title 18 and undergo the design review process per CMC Chapter 18.415. Consistency with these regulations would ensure that future development under the proposed project would not substantially degrade the visual quality of the site or its surroundings, and associated impacts would be *less than significant*.

Significance without Mitigation: *Less than significant*.

AES-4	The project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.
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Nighttime illumination and glare impacts are the effect of a project's exterior lighting upon adjoining uses and areas. Light and glare impacts are determined through a comparison of the existing light sources with the proposed lighting plan or policies.

As described above, the project site is developed with vacant structures, a road and rail network, magazines, and experimental forest stands and, as such, the site does not currently contain existing sources of nighttime illumination. However, on-site light and glare is caused by surrounding sources of nighttime illumination, which include street and parking area lights and exterior lighting on existing residential, public/institutional, and commercial buildings.

With potential future development of the proposed project, sources of light could be introduced with new buildings, along the trail, and in recreation and staging unit areas. Exterior lighting provided on and around the future development would be required to comply with City standards for outdoor lighting that are intended to reduce light pollution and glare per CMC Chapter 18.150, which establishes maximum height standards for outdoor lighting on public property and requires new development to shield and direct lighting fixtures downward and away from adjoining properties to reduce spill-over lighting and light pollution. In addition, the proposed project would also be required to undergo the design review process per CMC Chapter 18.415. Consistency with these regulations would ensure that future development under the proposed project would not create substantial light and glare that could degrade daytime or nighttime views in the area, and impacts would be *less than significant*.

Significance without Mitigation: *Less than significant.*

4.1.4 CUMULATIVE IMPACTS

AES-5	The project would not contribute to significant cumulative aesthetic impacts.
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The cumulative impact for aesthetics includes potential future development under the proposed project combined with effects of development on lands adjacent to the project site. A cumulative impact would be considered significant if, when taken together with past, present, and reasonably foreseeable projects in the identified area, it would result in a substantial adverse effect on a designated scenic vista or if it would result in a substantial degradation of the visual quality or character in the vicinity of the project site.

The CMC requires projects to undergo the City's design review process to ensure that project features such as building design, landscaping, site planning, and signage are consistent with the City's adopted plans, regulations, and design aesthetics. These requirements would apply to any future development within Concord, including development of the Concord Reuse Project and Tournament Sports Complex. According to the Final EIR Addendum prepared for the Area Plan, the development of the Concord Reuse Project would create a significant and unavoidable impact associated with visual impacts of urban development as seen from the Sun Terrace Neighborhood and the United States Coast Guard Housing complex. Areas adjacent to the eastern boundary of the project site may be developed with residential uses within the buildout horizon of the proposed project, transforming the visual character of the site and potentially impacting existing views east of the site. Portions of the future Regional Park that would be visible from these areas to the east and west would appear similar to existing conditions, which is a largely undeveloped site with scattered buildings and facilities. Therefore, the project would not contribute to a significant cumulative impact due to a change in the existing visual character of the surrounding area.

Similar to the proposed project, projects within the project site vicinity would be required to be in conformance with applicable local General Plan policies, which require development to be compatible with the character of their surroundings. The uniform application of these regulations, goals, and policies would ensure that all development within the vicinity is compatible with its surroundings upon approval. Additionally, the design review requirement as well as subsequent environmental review of projects subject to CEQA would give the City the opportunity to evaluate projects' potential impacts on scenic resources prior to approval. Therefore, the project would result in a *less-than-significant* cumulative impact with respect to visual character and scenic vistas.

Significance without Mitigation: *Less than significant.*

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4.2 AIR QUALITY

This chapter describes the regulatory framework and existing conditions on the project site related to air quality, and the potential impacts of the project on air quality.

The project site is in the San Francisco Bay Area Air Basin (SFBAAB or Air Basin). Land use is subject to the rules and regulations imposed by the Bay Area Air Quality Management District (BAAQMD), the California Ambient Air Quality Standards (AAQS) that have been adopted and are periodically updated by the California Air Resources Board (CARB), and National AAQS adopted by the United States Environmental Protection Agency (EPA). Air pollutants for which the State and federal government have identified AAQS are known as criteria air pollutants. In addition to criteria air pollutants, both the State and federal governments regulate the release of toxic air contaminants (TACs). The air quality modeling is included in Appendix B, Air Quality and Greenhouse Gas Data, of this Draft EIR.

4.2.1 ENVIRONMENTAL SETTING

4.2.1.1 REGULATORY FRAMEWORK

Federal, State, and local air districts have passed laws and regulations intended to control and enhance air quality. The regulatory framework that is potentially applicable to the proposed project is summarized below.

Federal and State Regulations

Ambient Air Quality Standards

The federal Clean Air Act (CAA) was passed in 1963 by the U.S. Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The federal CAA allows states to adopt more stringent standards or to include other pollutants. The California CAA, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect “sensitive receptors” most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 4.2-1. These pollutants are ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide

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TABLE 4.2-1 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard ^a	Federal Primary Standard ^b	Major Pollutant Sources
Ozone (O ₃) ^c	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20.0 ppm	35.0 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9.0 ppm	
Nitrogen Dioxide (NO ₂)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Particulate Matter (PM ₁₀) ^d	Annual Arithmetic Mean	20.0 µg/m ³	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50.0 µg/m ³	150.0 µg/m ³	
Respirable Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	12.0 µg/m ³	12.0 µg/m ³	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35.0 µg/m ³	
Lead (Pb)	30-Day Average	1.5 µg/m ³	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarterly	*	1.5 µg/m ³	
	Rolling 3-Month Average	*	0.15 µg/m ³	
Sulfates (SO ₄) ^e	24 hours	25 µg/m ³	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo ^f = 0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.

TABLE 4.2-1 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard ^a	Federal Primary Standard ^b	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H ₂ S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Notes: ppm: parts per million; µg/m³: micrograms per cubic meter

* Standard has not been established for this pollutant/duration by this entity.

a. California standards for O₃, CO (except 8-hour Lake Tahoe), SO₂ (1 and 24 hour), NO₂, and particulate matter (PM₁₀, PM_{2.5}, 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.

b. National standards (other than O₃, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O₃ standard is attained when the fourth highest 8-hour concentration measured at each site 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 calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, 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.

c. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

d. On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

e. On June 2, 2010, a new 1-hour SO₂ standard was established, and the existing 24-hour and annual arithmetic mean standards were revoked.

Source: California Air Resources Board, 2015, Ambient Air Quality Standards, <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>, accessed on April 20, 2017.

(CO), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- Assembly Bill (AB) 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

Tanner Air Toxics Act and Air Toxics “Hot Spot” Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may

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pose a present or potential hazard to human health.” A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 US Code Section 7412[b]) is a toxic air contaminant. Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics “Hot Spot” Information and Assessment Act of 1987). The Tanner Air Toxics Act sets up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an “airborne toxics control measure” for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

Air Pollutants of Concern

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb) are primary air pollutants. Of these, CO, SO₂, NO₂, PM₁₀, and PM_{2.5} are “criteria air pollutants,” which means that AAQS have been established for them. ROG and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and nitrogen dioxide (NO₂) are the principal secondary pollutants. Each of the primary and secondary criteria air pollutants and its known health effects is described here.

- **Carbon Monoxide** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations

tend to be the highest during winter mornings with little or no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, motor vehicles operating at slow speeds are the primary source of CO in the Air Basin. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds. New findings indicate that CO emissions per mile are lowest at about 45 miles per hour (mph) for the average light-duty motor vehicle and begin to increase again at higher speeds. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.¹

- **Reactive Organic Gases** are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O₃. There are no AAQS established for ROGs. However, because they contribute to the formation of O₃, BAAQMD has established a significance threshold for this pollutant.
- **Nitrogen Oxides** are a by-product of fuel combustion and contribute to the formation of O₃, PM₁₀, and PM_{2.5}. The two major components of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂). The principal component of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and in equal concentrations is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 ppm. NO₂ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high.²
- **Sulfur Dioxide** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO₂. When SO₂ forms sulfates (SO₄) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO₂ is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO₂ may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO₂ may do greater harm by injuring lung tissue.
- **Suspended Particulate Matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM₁₀, include the particulate matter with an aerodynamic diameter of 10 microns (i.e.,

¹ Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines.

² Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines.

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10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or PM_{2.5}, have an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch).

Some particulate matter, such as pollen, occurs naturally. In the Air Basin most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM₁₀ bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The EPA's scientific review concluded that PM_{2.5} penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM₁₀ standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Motor vehicles are currently responsible for about half of particulates in the Air Basin. Wood burning in fireplaces and stoves is another large source of fine particulates.³

Both PM₁₀ and PM_{2.5} may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. These health effects include premature death; increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individual with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms (SCAQMD 2005). There has been emerging evidence that even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.1 millionths of a meter or <0.000004 inch), known as ultrafine particulates (UFPs), have human health implications, because UFPs toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs. However, the EPA or CARB has yet to adopt AAQS to regulate these particulates. Diesel particulate matter (DPM) is also classified a carcinogen by CARB.

- **Ozone** is commonly referred to as “smog” and is a gas that is formed when ROG_s and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O₃ is a secondary criteria air pollutant. O₃ concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions to the formation of this pollutant. O₃ poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O₃ levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O₃ can also damage plants and trees and materials such as rubber and fabrics.⁴
- **Lead** is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phasing out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Twenty years ago, mobile sources

³ Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines.

⁴ Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines.

were the main contributor to ambient lead concentrations in the air. In the early 1970s, the EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.⁵ Because emissions of lead are found only in projects that are permitted by BAAQMD, lead is not an air quality of concern for the proposed project.

Toxic Air Contaminants

At the time of the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.⁶ Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

Community Risk

To reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when siting sensitive receptors near existing pollution sources. CARB's recommendations were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity substantially increases exposure and the potential for adverse health effects. Three carcinogenic TACs constitute the majority of the known health risks from motor vehicle traffic—DPM from trucks and benzene and 1,3 butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

Regional Regulations East Bay Regional Park District Master Plan (2013)

There are no policies in the District Master Plan that are applicable to air quality at the Concord Hills Regional Park.

⁵ Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines.

⁶ California Air Resources Board, 1999, Final Staff Report: Update to the Toxic Air Contaminant List.

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East Bay Regional Park District General Conditions

The Park District's General Conditions contains the following rule regarding dust control:

Article 22(b) Dust Control: Dust resulting from the Contractor's performance of the work shall be controlled by the Contractor either by applying water or a dust palliative without additional costs to the District. The District Inspector has the full authority to suspend work wholly or in part should the Contractor fail to perform to the satisfaction of the District Inspector.

Bay Area Air Quality Management District

BAAQMD is the agency responsible for ensuring that the National and California AAQS are attained and maintained in the SFBAAB. BAAQMD is responsible for:

- Adopting and enforcing rules and regulations concerning air pollutant sources.
- Issuing permits for stationary sources of air pollutants.
- Inspecting stationary sources of air pollutants.
- Responding to citizen complaints.
- Monitoring ambient air quality and meteorological conditions.
- Awarding grants to reduce motor vehicle emissions.
- Conducting public education campaigns.
- Preparing the air quality management plan.

Air quality conditions in the Air Basin have improved significantly since the BAAQMD was created in 1955. The BAAQMD prepares air quality management plans (AQMPs) to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans for the National O₃ standard and clean air plans for the California O₃ standard. The BAAQMD prepares these AQMPs in coordination with the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). The most recent adopted comprehensive plan is the Bay Area 2017 Clean Air Plan, Spare the Air, Cool the Climate, which incorporates significant new scientific data, ambient measurements, new meteorological episodes, and new air quality modeling tools.

2017 Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area

BAAQMD adopted the 2017 Clean Air Plan on April 19, 2017. It serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues in providing the framework for SFBAAB to achieve attainment of the California and National AAQS. Similar to the Bay Area 2010 Clean Air Plan, the 2017 Clean Air Plan updates the Bay Area's ozone plan, which is based on the "all feasible measures" approach to meet the requirements of the California Clean Air Act. Additionally, it sets a goal of reducing health risk impacts to local communities by 20 percent by 2020. Furthermore, the 2017 Clean Air Plan lays the groundwork for reducing GHG emissions in the Bay Area to meet the State's 2030 GHG reduction target and 2050 GHG

reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:⁷

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A comprehensive multi-pollutant control strategy has been developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, TACs, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of “super-GHGs” such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
 - Increase efficiency of the energy and transportation systems.
 - Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
 - Make the electricity supply carbon-free.
 - Electrify the transportation and building sectors.

BAAQMD Community Air Risk Evaluation Program

The BAAQMD Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light-duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29

⁷ Bay Area Air Quality Management District, 2017, Final 2017 Clean Air Plan, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area, http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en, accessed on May 10, 2018.

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percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory accounted for CARB's diesel regulations. Overall, cancer risk from TAC dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.⁸

Modeled cancer risks from TACs in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. The highest modeled risks were found east of San Francisco, near West Oakland, and at the Maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

- Western Contra Costa County and the cities of Richmond and San Pablo
- Western Alameda County along the Interstate 880 corridor and the cities of Berkeley, Alameda, Oakland, and Hayward
- San José
- Eastern side of San Francisco
- Concord
- Vallejo
- Pittsburgh and Antioch

A northeastern portion of the project site is within a CARE-program impacted community.⁹

The major contributor to acute and chronic non-cancer health effects in the SFBBAB is acrolein (C₃H₄O). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports.¹⁰ Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the BAAQMD does not conduct health risk screening analysis for acrolein emissions.¹¹

BAAQMD Rules and Regulations

Regulation 7, Odorous Substances

Sources of objectionable odors may occur within Concord. BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property."

⁸ Bay Area Air Quality Management District, 2014, Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program Retrospective & Path Forward (2004–2013).

⁹ Bay Area Air Quality Management District, 2014, Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program Retrospective & Path Forward (2004 – 2013).

¹⁰ Bay Area Air Quality Management District, 2006, Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area.

¹¹ Bay Area Air Quality Management District, 2010, Air Toxics NSR Program, Health Risk Screening Analysis Guidelines.

Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

Other BAAQMD Regulations

In addition to the plans and programs described above, BAAQMD administers a number of specific regulations on various sources of pollutant emissions that would apply to individual development projects allowed under the proposed project, including:

- BAAQMD, Regulation 2, Rule 2, New Source Review.
- BAAQMD, Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants.
- BAAQMD Regulation 6, Rule 1, General Requirements.
- BAAQMD Regulation 6, Rule 2, Commercial Cooking Equipment.
- BAAQMD Regulation 8, Rule 3, Architectural Coatings.
- BAAQMD Regulation 8, Rule 4, General Solvent and Surface Coatings Operations.
- BAAQMD Regulation 8, Rule 7, Gasoline Dispensing Facilities.
- BAAQMD Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing.

Contra Costa County Transportation Authority

The Contra Costa Transportation Authority (CCTA) is the designated congestion management agency for the county. The CCTA's congestion management plan (CMP) includes traffic level-of-service standards for state highways and principal arterials; multi-modal performance measures to evaluate current and future system; a seven-year capital program of projects to maintain or improve the performance of the system or mitigate the regional impacts of land use projects; a program to analyze the impacts of land use decisions; and a travel demand element that promotes transportation alternatives to the single-occupant vehicle.¹²

Pursuant to the EPA's transportation conformity regulations and the Bay Area Conformity State Implementation Plan (also known as the Bay Area Air Quality Conformity Protocol), the CMP is required to be consistent with the MTC planning process, including regional goals, policies, and projects for the regional transportation improvement program (RTIP). The MTC cannot approve any transportation plan, program, or project unless these activities conform to the State Implementation Plan. The CMP legislation also requires each congestion management agency to prepare and maintain a computerized travel demand model, including a land use database. To meet this requirement, CCTA has developed and maintains a countywide model that runs using TransCAD® software. In 2010, CCTA undertook a comprehensive update of its land use database, consistent with the ABAG "Current Regional Plans" (aka Sustainable Communities Strategy Base Case) land use allocation, and in 2014 completed an update of the model with the adopted Plan Bay Area land use forecasts (Projections 2013) for use in the 2016 Countywide Transportation Plan (CTP), the Supplemental Environmental Impact Report for the CTP, and other planning efforts.¹³

¹² County of Contra Costa, 2015, Climate Action Plan, <http://www.co.contra-costa.ca.us/DocumentCenter/View/39791>, accessed on May 10, 2018.

¹³ County of Contra Costa, 2015, Climate Action Plan, <http://www.co.contra-costa.ca.us/DocumentCenter/View/39791>, accessed on May 10, 2018.

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The federal CAA requires that federal transportation plans be prepared for regions in nonattainment of the federal AAQS. CCTA provides county-level input to MTC during preparation of the regional transportation plan (RTP). Plan Bay Area 2040 was adopted on July 26, 2017. Plan Bay Area was prepared by MTC and ABAG. It incorporates the region's sustainable communities strategy (SCS) pursuant to Senate Bill 375.¹⁴

Metropolitan Transportation Commission and Association of Bay Area Governments

Plan Bay Area 2040 is the Bay Area's RTP/SCS and was adopted jointly by ABAG and MTC on July 26, 2017. It lays out a development scenario for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by CARB. Plan Bay Area is discussed in greater detail in Chapter 4.7, Greenhouse Gases, of this Draft EIR.

Local Regulations

City of Concord General Plan

The General Plan establishes a vision and priorities for the City of Concord through 2030. Policies found in this document act as a road map for the Development Code, Capital Improvement Program, and subdivision regulations. The Concord Reuse Project Area Plan provides further guidance on the use of the site, including specific policies and standards for its development and conservation. The General Plan includes the following principles and policies relevant to the Concord Hills Regional Park Land Use Plan:

- Principle Safety – 1.1: Integrate Air Quality Goals into Local Planning and Development Review.
 - Policy S-1.1.2: Site projects in locations and/or in a manner that will reduce air pollution exposure of sensitive receptors.
 - Policy S-1.1.3: Require project applicants to implement all feasible control measures to reduce combustion emissions from construction equipment.
 - Policy S-1.1.4: Require developers on a case-by-case basis to comply with the Bay Area Air Quality Management District regulations in effect at the time of project approval, including regulations relating to dust, toxic air contaminants (TACs), odors, and other air pollutants or air quality issues.
 - Policy S-1.1.5: Coordinate with the Bay Area Air Quality Management District (BAAQMD) when addressing air quality issues related to local land use proposals.
 - Policy S-1.1.7: Coordinate with the Bay Area Air Quality Management District (BAAQMD) when addressing air quality issues related to local land use proposals.
 - Policy S-1.1.5: Require new development to comply with all applicable dust control measures promulgated by the BAAQMD for new construction. The BAAQMD includes these in its CEQA Guidelines in the section addressing construction emissions.

¹⁴ Metropolitan Transportation Commission and Association of Bay Area Governments, 2017, Plan Bay Area 2040 Plan.

- Principle Safety – 1.3: Support Regional Air Quality Strategies through Land Use Planning and Site Design.
 - Policy S-1.3.5: Recognize the potential for the Concord Reuse Project to contribute to regional air quality improvements by encouraging transit-oriented development on the site; providing new workplaces, residences, and services in close proximity to one another to minimize trip lengths; and developing viable alternatives to single passenger vehicle travel.
 - Policy S-1.3.6: Promote the planting and maintenance of trees and other landscaping to absorb carbon dioxide and help reduce air pollution levels.

Concord Reuse Project Area Plan

The Concord Reuse Project Area Plan (Area Plan) was adopted by the City in 2012. Book Two of the Area Plan provides background information and policy guidance on key topics in order to position the area for long-term success. Book Three: Climate Action Plan of the Area Plan presents ways in which greenhouse gas emissions associated with development and operation in the Area Plan boundary can be reduced. Whereas the citywide General Plan policies provide broad direction for decision making, this document provides more detailed principles and policies that are necessary to fully achieve the community vision for the Concord Reuse Project area. The policies are intended to complement and augment those in other parts of the 2030 General Plan, and are fully consistent with the citywide elements. The Safety, Health, and Noise chapter includes policies to protect future occupants of the Concord Reuse Project area and its surroundings and addresses public health and wellness through policies on air quality. Principles and policies relevant to the proposed project are shown below:

- Principle SHN-4: Integrate regional air quality goals and strategies into land use planning, site design, and development review for the CRP [Concord Reuse Project] area.
 - Policy SHN – 4.1: Ensure that development of the site helps move the region toward attainment of State and federal ozone standards by accommodating regional growth in a way that reduces average per capita vehicle miles traveled.
 - Policy SHN – 4.2: Minimize potential impacts to sensitive land uses from exposure to toxic air contaminants (TACs) and fine particulate matter (PM_{2.5}). Restrict housing and other sensitive land uses within a 500 foot buffer along Highway 4 in accord with health risk guidelines from the Bay Area Air Quality Management District (BAAQMD). During detailed planning and design, analyze risk to land uses within a 500-1000 foot contour of Highway 4 and as necessary mitigate potential health risks consistent with guidelines established by the Bay Area Air Quality Management District (BAAQMD).
 - Policy SHN – 4.3: Require future businesses on the site to limit generation of toxic air contaminants in order to control overall site emissions. During detailed planning and design, control the location of regulated stationary sources to avoid the potential for adverse cumulative effects.
 - Policy SHN – 4.4: Mitigate the potential for odor-related conflicts by avoiding the placement of sensitive land uses such as housing near objectionable odor sources.

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- Policy SHN – 4.5: Reduce the potential for particulate matter and related air emissions during construction by following best management practices for demolition, earthwork, grading, construction, and vehicle operations.
- Policy SHN – 4.6: Work with the Association of Bay Area Governments and the BAAQMD to revise the regional population projections and Clean Air Plan so that projections for Concord include expected development at the CNWS. This will involve establishing “Projections 2011” totals for Concord that are consistent with the Area Plan, and adjusting later versions of the Clean Air Plan and other air quality plans to reflect appropriate horizon year job and household forecasts for Concord.

4.2.1.2 EXISTING CONDITIONS

San Francisco Bay Area Air Basin

California is divided geographically into air basins for the purpose of managing the air resources of the state on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The state is divided into 15 air basins. As previously stated, Concord is in the SFBAAB. The discussion below identifies the natural factors in the SFBAAB that affect air pollution. Air pollutants of concern are criteria air pollutants and TACs. Federal, State, and local air districts have adopted laws and regulations intended to control and improve air quality. The regulatory framework that is potentially applicable to the proposed project is also summarized below.

The BAAQMD is the regional air quality agency for the SFBAAB. In addition to the presence of existing air pollution sources and ambient conditions, air quality in the SFBAAB is determined by the following natural factors:¹⁵

- **Meteorology:** The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range¹⁶ splits in the Bay Area, creating a western coast gap, the Golden Gate, and an eastern coast gap, the Carquinez Strait, which allow air to flow in and out of the Bay Area and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast.

The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

¹⁵ Bay Area Air Quality Management District, 2017, Revised. California Environmental Quality Act Air Quality Guidelines.

¹⁶ The Coast Range traverses California’s west coast from Humboldt County to Santa Barbara County.

- **Wind Patterns:** During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais in Marin County, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3:00 to 4:00 p.m.), compared with only 7 knots at San Jose and less than 6 knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. Under normal atmospheric conditions, the air in the lower atmosphere is warmer than the air above it. An inversion is a change in the normal conditions that causes the temperature gradient to be reversed, or inverted. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited, and stagnant conditions are likely to result.

In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes (i.e., conditions where there is little mixing, which occurs when there is a lack of or little wind) are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

- **Temperature:** Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold water from the ocean bottom along the coast. On summer afternoons, the temperatures at the coast can be 35 degrees Fahrenheit cooler than temperatures 15 to 20 miles inland; at night, this contrast usually decreases to less than 10 degrees Fahrenheit. In the winter, the relationship of minimum and maximum temperatures is reversed: During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.
- **Precipitation:** The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys. During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e., air pollutants are dispersed more readily

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into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, where mixing and ventilation are low and pollutant levels build up.

- **Wind Circulation:** Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commuter traffic (early morning) and wood-burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants up-valley during the day, and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthy levels.
- **Inversions:** As described above, an inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth (i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground). There are two types of inversions that occur regularly in the SFBAAB. Elevation inversions¹⁷ are more common in the summer and fall, and radiation inversions¹⁸ are more common during the winter. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

SFBAAB Area Designations

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal AAQS through the State Implementation Plan. Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O₃ range from marginal, moderate, and serious to severe and extreme.

- **Unclassified:** A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment:** A pollutant is in attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment:** A pollutant is in nonattainment if there was at least one violation of an AAQS for that pollutant in the area.
- **Nonattainment/Transitional:** A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SFBBAB is shown in Table 4.2-2. The SFBBAB is currently designated a nonattainment area for California and National O₃, California and National PM_{2.5}, and California PM₁₀ AAQS.

¹⁷ When the air blows over elevated areas, it is heated as it is compressed into the side of the hill/mountain. When that warm air comes over the top, it is warmer than the cooler air of the valley.

¹⁸ During the night, the ground cools off, radiating the heat to the sky.

TABLE 4.2-2 ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SAN FRANCISCO BAY AREA AIR BASIN

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment	Classification revoked (2005)
Ozone – 8-hour	Nonattainment (serious)	Nonattainment (marginal) ^a
PM ₁₀ – 24-hour	Nonattainment	Unclassified/Attainment ^b
PM _{2.5} – 24-hour	Nonattainment	Nonattainment
CO – 8-hour and 1-hour	Attainment	Attainment
NO ₂ – 1-hour	Attainment	Unclassified
SO ₂ – 24-hour and 1-hour	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

a. Severity classification current as of June 30, 2019 Environmental Protection Agency. 2019, June 30. California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. https://www3.epa.gov/airquality/greenbook/anayo_ca.html. Accessed July 31, 2019.)

b. In December 2014, US EPA issued final area designations for the 2012 primary annual PM_{2.5} National AAQS. Areas designated “unclassifiable/attainment” must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

Source: California Air Resources Board. 2017, October 18. Area Designations Maps: State and National. Accessed July 31, 2019.

<http://www.arb.ca.gov/degis/adm/adm.htm>. Bay Area Air Quality Management District. 2017. Air Quality Standards and Attainment Status.

<http://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status> Accessed July 31, 2019. Accessed July 31, 2019.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of Concord have been documented and measured by the BAAQMD. BAAQMD has 24 permanent monitoring stations located around the Bay Area, and data from the nearest station, Concord – 2975 Treat Boulevard Monitoring Station in Concord, was used. This station monitors O₃, NO₂, PM_{2.5}, and PM₁₀. This station does not monitor CO or SO₂. Data from this station is summarized in Table 4.2-3. The data show occasional violations of the State and federal O₃ standards, a violation of the State PM₁₀ standard in 2018, and violations of the federal PM_{2.5} standard in 2017 and 2018. The State and federal NO₂ standards have not been exceeded in the last five years in the vicinity of the project site.

Existing Emissions

The project site includes 2,543 acres of the former naval base, which has remained largely undeveloped. As described in Chapter 3, Project Description, of this Draft EIR, the northern section includes 1,740 acres of mostly open space with some existing structure and a complex road and rail network. The southern section of approximately 890 acres is less developed, with a small network of concrete and magazines along a loop road. These current land uses do not generate long-term air pollutant emissions from mobile sources, energy use, or area sources. Additionally, there are no known odor generators in the project vicinity.

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TABLE 4.2-3 AMBIENT AIR QUALITY MONITORING SUMMARY

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations				
	2014	2015	2016	2017	2018
Ozone (O₃)					
State 1-Hour ≥ 0.09 ppm	1	0	1	0	0
State & Federal 8-hour ≥ 0.070 ppm	2	2	2	0	0
Maximum 1-Hour Conc. (ppm)	0.095	0.088	0.095	0.082	0.077
Maximum 8-Hour Conc. (ppm)	0.080	0.073	0.074	0.070	0.061
Nitrogen Dioxide (NO₂)					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	48.2	33.0	33.6	40.6	38.3
Coarse Particulates (PM₁₀)					
State 24-Hour > 50 µg/m ³	0	0	0	0	1
Federal 24-Hour > 150 µg/m ³	0	0	0	0	0
Maximum 24-Hour Conc. (µg/ m ³)	42.5	22.5	18.7	41.2	105.0
Fine Particulates (PM_{2.5})					
Federal 24-Hour > 35 µg/m ³	0	0	0	6	14
Maximum 24-Hour Conc. (µg/m ³)	30.6	31.0	20.7	89.4	180.0

Notes: ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter; * = insufficient data; NA = Not Available
Source: California Air Resources Board, 2019, Air Pollution Data Monitoring Cards (2014, 2015, 2016, 2017, and 2018),
<https://www.arb.ca.gov/adam/topfour/topfourdisplay.php>, accessed on July 31, 2019.

However, two stationary sources, both of which are generators permitted by BAAQMD, are located within 1,000 feet of the project site.¹⁹ One is located to the northeast of the project site along Avila Road. The other is located along Kirker Pass Road. State Route 4 is the only high-volume roadway with over 10,000 vehicles per day in the vicinity of the project site.²⁰

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition,

¹⁹ Bay Area Air Quality Management District, 2012, Stationary Source Screening Analysis Tool, <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>, accessed on April 20, 2018.

²⁰ Bay Area Air Quality Management District, 2011, *Highway Screening Analysis Tool*, <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>, accessed on April 20, 2018.

noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the population. The nearest sensitive receptors include single-family residences to the north and south. Additional sensitive receptors include Delta View Elementary School to the north and several schools to the south, including Sunrise Elementary School, Riverwood Elementary School, El Dorado Middle School, and Ayers Elementary School. The proposed project will not include heavy construction equipment use within 1,500 feet of sensitive receptors.

4.2.2 THRESHOLDS OF SIGNIFICANCE

4.2.2.1 CEQA APPENDIX G THRESHOLDS

Implementation of the proposed project would have a significant effect on the environment with respect to air quality if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

4.2.2.2 BAAQMD THRESHOLDS

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. These thresholds are designed to establish the level at which the District believed air pollution emissions would cause significant environmental impacts under CEQA.

In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts; however, this later amendment regarding risk and hazards was the subject of the December 17, 2015, California Supreme Court decision (*California Building Industry Association v BAAQMD*), which clarified that CEQA does not require an evaluation of impacts of the environment on a

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project.²¹ The supreme court also found that CEQA requires the analysis of exposing people to environmental hazards in specific circumstances, including the location of development near airports, schools near sources of toxic contamination, and certain exemptions for infill and workforce housing. The supreme court also held that public agencies remain free to conduct this analysis regardless of whether it is required by CEQA. To account for these updates, BAAQMD published a new version of the Guidelines, dated May 2017, which includes revisions made to address the supreme court’s opinion.²² This latest version of the BAAQMD CEQA Guidelines was used to prepare the analysis in this Draft EIR.

Criteria Air Pollutant Emissions and Precursors

The BAAQMD’s criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4.2-4. Criteria for both the potential future construction and operational phases of the project are shown.

TABLE 4.2-4 BAAQMD CRITERIA AIR POLLUTANT REGIONAL SIGNIFICANCE THRESHOLDS

Pollutant	Construction Phase	Operational Phase	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
ROG	54	54	10
NO _x	54	54	10
PM ₁₀	82 (Exhaust)	82	15
PM _{2.5}	54 (Exhaust)	54	10
PM ₁₀ and PM _{2.5} Fugitive Dust	Best Management Practices	None	None

Source: Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines.

BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the Air Basin and has established thresholds that

²¹ On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. The court did not rule on the merits of the thresholds of significance, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. Following the court’s order, the BAAQMD released revised CEQA Air Quality Guidelines in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and which set aside the significance thresholds. The Alameda County Superior Court, in ordering BAAQMD to set aside the thresholds, did not address the merits of the science or evidence supporting the thresholds, and in light of the subsequent case history discussed below, the science and reasoning contained in the BAAQMD 2017 CEQA Air Quality Guidelines provide the latest state-of-the-art guidance available. On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD’s CEQA Guidelines. (California Building Industry Association v. BAAQMD, Case Nos. A135335 and A136212 (Court of Appeal, First District, August 13, 2013))

²² Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on May 10, 2018.

would be protective of these individuals. To achieve the health-based standards established by the EPA, BAAQMD prepares the Clean Air Plan that details regional programs to attain the AAQS. Mass emissions in Table 4.2-4 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the Air Basin. The thresholds are based on the trigger levels for the federal New Source Review (NSR) Program. The NSR Program was created to ensure projects are consistent with attainment of health-based federal ambient air quality standards. Regional emissions from a single project do not single-handedly trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed above. Projects that do not exceed the BAAQMD regional significance thresholds in Table 4.2-4 would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which are 9.0 parts per million (ppm) (8-hour average) and 20.0 ppm (1-hour average). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, the BAAQMD does not require a CO hotspot analysis if the following criteria are met:

- The project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Community Risk and Hazards

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and PM_{2.5} because emissions of these pollutants can have significant health impacts at the local level.

- The future potential development associated with the proposed project would generate TACs and PM_{2.5} during construction activities that could elevate concentrations of air pollutants at the nearby residential sensitive receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. The BAAQMD has adopted screening tables for air toxics evaluation during construction.²³ Construction-related TAC and PM_{2.5} impacts should be

²³ Bay Area Air Quality Management District, 2010, Screening Tables for Air Toxics Evaluations during Construction.

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addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site receptors, as applicable.²⁴

- The proposed project does not involve construction of any facilities that would be a source of operational TACs and PM_{2.5}. BAAQMD thresholds related to siting new sources of TACs and PM_{2.5} near existing or planned sensitive receptors are not applicable.

Since neither Contra Costa County nor the City of Concord has a qualified risk reduction plan, a site-specific analysis of TACs and PM_{2.5} impacts on sensitive receptors was conducted. The thresholds identified below are applied to the project's construction and operational phases.

Community Risk and Hazards: Project

Project-level emissions of TACs or PM_{2.5} from individual sources that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- Noncompliance with a qualified Community Risk Reduction Plan.
- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e., chronic or acute) hazard index greater than 1.0 would be a significant cumulatively considerable contribution.
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) annual average PM_{2.5} from a single source would be a significant cumulatively considerable contribution.²⁵

Community Risk and Hazards: Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone. A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds any of the following:

- Non-compliance with a qualified Community Risk Reduction Plan.
- An excess cancer risk level of more than 100 in one million or a chronic non-cancer hazard index (from all local sources) greater than 10.0.
- 0.8 $\mu\text{g}/\text{m}^3$ annual average PM_{2.5}.²⁶

In February 2015, the Office of Environmental Health Hazard Assessment (OEHHA) adopted new health risk assessment guidance that includes several efforts to be more protective of children's health. These

²⁴ Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on May 10, 2018.

²⁵ Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, May, http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on May 10, 2018.

²⁶ Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, May, http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed May 10, 2018.

updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer-causing chemicals, and age-specific breathing rates.²⁷

Odors

BAAQMD's thresholds for odors are qualitative based on BAAQMD's Regulation 7, Odorous Substances. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance. Under BAAQMD's Rule 1-301, BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.²⁸ For a plan-level analysis, BAAQMD requires:

- Identification of potential existing and planned location of odors sources.
- Policies to reduce odors.

4.2.3 IMPACT DISCUSSION

AQ-1 Implementation of the proposed project would not conflict with or obstruct implementation of the applicable air quality plan.

A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the 2017 Clean Air Plan. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration at an early enough stage to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals in the Bay Area.

As described in Section 4.2.2, Thresholds of Significance, BAAQMD requires a consistency evaluation of a plan with its current AQMP measures. BAAQMD considers project consistency with the AQMP in accordance with the following:

- Does the project support the primary goals of the AQMP?
- Does the project include applicable control measures from the AQMP?
- Does the project disrupt or hinder implementation of any AQMP control measures?
- A comparison that the project vehicle miles traveled (VMT) or vehicle trip increase is less than or equal to the projected population increase.

²⁷ Office of Environmental Health Hazard Assessment, 2015, Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.

²⁸ Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed May 10, 2018.

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BAAQMD 2017 Clean Air Plan Goals

The primary goals of the 2017 Clean Air Plan are to attain the State and federal AAQS, reduce population exposure and protect public health in the Bay Area, and reduce GHG emissions and protect the climate. Furthermore, the 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the State's 2030 GHG reduction target and 2050 GHG reduction goal.

Attain Air Quality Standards

BAAQMD's 2017 Bay Area Clean Air Plan strategy is based on regional population and employment projections in the Bay Area compiled by ABAG. These demographic projections are incorporated into *Plan Bay Area*. Demographic trends incorporated into *Plan Bay Area* determine VMT in the Bay Area, which BAAQMD uses to forecast future air quality trends. The SFBAAB is currently designated a nonattainment area for State and national O₃ and PM_{2.5}, and State PM₁₀ (State AAQS only).

The anticipated growth from the proposed project is within the population and employment projections identified by ABAG for the City of Concord, as discussed further in Chapter 4.12, Population and Housing, of this Draft EIR. As identified in Impact POP-1, the proposed project would not exceed the anticipated regional population and employment forecasts either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure). Because population and employment projections of the proposed project are consistent with regional projections, BAAQMD emissions forecasts consider the additional growth and associated emissions from the proposed project. Consequently, emissions resulting from potential future development associated with the proposed project are included in BAAQMD's projections, and future development accommodated under the proposed project would not hinder BAAQMD's ability to attain the California or National AAQS. Accordingly, impacts would be *less than significant*.

Reduce Population Exposure and Protect Public Health

The proposed project would not site sensitive land uses near sources of TACs. There are two stationary sources within 1,000 feet of the project site, both of which are generators permitted by BAAQMD.²⁹ One is along Avila Road to the northeast of the project site, and the other is along Kirker Pass Road. Likewise, State Route 4 is the only high-volume roadway with over 10,000 vehicles per day in the vicinity of the project site.³⁰ Adherence to BAAQMD regulations would ensure that new sources of TACs do not expose populations to significant health risk. Compliance with these regulations by these stationary sources would ensure risks from these sources to on-site visitors of the Concord Hills Regional Park would be minimized. Additionally, CEQA does not require an analysis of the environmental effects of attracting development and people to an area.³¹ However, the environmental document must analyze the impacts

²⁹ Bay Area Air Quality Management District, 2012, Stationary Source Screening Analysis Tool, <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>, accessed on April 20, 2018.

³⁰ Bay Area Air Quality Management District, 2011, *Highway Screening Analysis Tool*, <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>, accessed on April 20, 2018.

³¹ *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478)

of environmental hazards on future users when a proposed project exacerbates an existing environmental hazard or condition. As described in Impact AQ-3, the proposed project would not generate substantial quantities of TACs and/or exacerbate hazards on-site. Further, visitors at the Concord Hills Regional Park would only be on-site for short-durations while risks associated with TACs are typically considered over a lifetime (30-year exposure duration). Sensitive receptors at parks would not be exposed to long-term health risks from proximity of the major sources of air pollution identified above. Therefore, the proposed project is consistent with this measure in the 2017 Clean Air Plan and impacts would be *less than significant*.

Reduce GHG Emissions and Protect the Climate

The GHG emissions impacts of the proposed project are discussed in Chapter 4.7, Greenhouse Gas Emissions, of this Draft EIR. Future development associated with implementation of the proposed Plan would be required to adhere to statewide measures that have been adopted to achieve the GHG reduction targets of AB 32. In addition, the proposed project is consistent with regional strategies for infill development identified in *Plan Bay Area 2040*. Furthermore, the proposed project would not exceed the forecast year 2023 (estimated opening day) or 2050 (estimated buildout) project-level efficiency metric of 2.4 metric tons of carbon dioxide equivalent per service population (residents plus employees) per year and would be on a trajectory to meet the GHG reduction goal of Executive Order S-03-05. Therefore, the proposed project is consistent with the goal of the 2017 Clean Air Plan to reduce GHG emissions and protect the climate, and the impact would be *less than significant*.

2017 Clean Air Plan Control Measures

The 2017 Clean Air Plan identifies control measures that are required by BAAQMD to reduce emissions for a wide range of both stationary and mobile sources. These measures are broken down into Stationary Sources, Transportation, Energy and Climate, Buildings, Agriculture, Natural and Working Lands, Waste Management, Water, Super-GHGs, and Further Study. The proposed project's consistency with these measures is evaluated below.

- **Stationary Sources (SS)** are regulated directly by BAAQMD; therefore, new stationary and area sources within the proposed Regional Park area would be required to comply with BAAQMD's regulations (e.g., boilers, emergency generators, etc. if determined to be necessary). Implementation of the proposed project would not result in any new major stationary source emissions or TACs, which are more commonly associated with industrial manufacturing or warehousing. The park would not hinder the ability of BAAQMD to implement SS control measures.
- **Transportation (TR)** control measures are strategies to reduce vehicle trips, vehicle use, VMT, vehicle idling, and traffic congestion for the purpose of reducing motor vehicle emissions. Although most of the TR control measures are implemented at the regional level—that is, by MTC or Caltrans—the 2017 Clean Air Plan relies on local communities to assist with implementation of some measures. The proposed project would guide the development of new park space, including pedestrian and bicycle facilities to improve connectivity and reduce dependency on motorized vehicles. The proposed project is also proximate to the North Concord/ Martinez BART station, which would also offer visitors alternatives to passenger vehicles and reduce VMT.

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- **Energy and climate (EN)** control measures are intended to reduce energy use as a means of reducing adverse air quality emissions. Under the Concord Reuse Area Plan's Climate Action Plan (CAP), future development activities associated with implementation of the proposed Plan would be required to comply with the CAP's building and site energy efficiency policies, which require new development in the Plan Area to minimize energy loads (E-1.1), utilize passive cooling and heating (E-1.2), and generate energy on-site when applicable (E-1.6). Additionally, the proposed project may include roof-top solar on new facilities, which would help to offset electricity use on-site.
- **Buildings (BL)** control measures focus on working with local governments to facilitate adoption of best GHG emissions control practices and policies. The 2017 Clean Air Plan includes measures to increase building efficiency. As described above, compliance with the current CAP, as well as Title 24 Parts 6 and 11, would ensure the project would not conflict with these BL control measures.
- **Agricultural (AG)** practices in the Bay Area account for a small portion, roughly 1.5 percent, of the Bay Area's GHG emissions inventory. AG control measures target larger-scale farming practices that are not proposed under the project. Therefore, implementation of the proposed project would not conflict with these AG control measures.
- **Natural and working lands (NW)** sector control measures focus on increasing carbon sequestration on rangelands and wetlands. The proposed project would generally create parkland rather than rangeland and wetland uses; nonetheless, the park would plant trees to absorb CO₂, provide shade to reduce urban heat island effects, and increase carbon sequestration, all of which aligns with NW goals. Additionally, the proposed project includes an experimental forest component in the Cistern Pond Special Protection Feature that would increase carbon sequestration on-site.
- **Waste management (WA)** control measures include strategies to increase waste diversion rates through efforts to reduce, reuse, and recycle. As discussed in Chapter 4.15, Utilities and Service Systems, in Section 4.15.3, Solid Waste, of Chapter 4.15, Utilities and Service Systems, the City has regulations in place to ensure that potential future development under the proposed project would not conflict with the applicable WA control measures.
- **Water (WR)** control measures are aimed at reducing water use and associated emissions. As discussed in Chapter 4.15, Utilities and Services Systems, ongoing compliance with the City's current water conservation regulations and policies in the General Plan and Climate Action Plan would support water conservation and ensure the proposed project would not conflict with the WR control measures.
- **Super-GHGs (SL)** include methane, black carbon, and fluorinated gases. Through ongoing implementation of the Concord Reuse Project Area Plan CAP, the project site will continue to reduce local GHG emissions and meet State, regional, and local reduction targets, which would ensure implementation of the proposed project would not conflict with these SL control measures.
- **Further Study (FSM)** control measures apply to sources regulated directly by BAAQMD. Because BAAQMD is the implementing agency, new and existing stationary and area sources in the project site would be required to comply with these additional further study control measures in the 2017 Clean Air Plan.

The proposed project, through compliance with existing regulations, would not conflict with the 2017 Clean Air Plan and would not hinder BAAQMD from implementing the control measures in the 2017 Clean Air Plan. Accordingly, impacts would be *less than significant*.

Regional Growth Projections for VMT and Population and Employment

Future development activities and land uses associated with implementation of the proposed Plan would result in additional sources of criteria air pollutants. BAAQMD's approach to evaluating impacts from criteria air pollutants generated by a plan's long-term growth is done by comparing population and employment estimates to the VMT estimates. This is because BAAQMD's AQMP plans for growth in the SFBAAB are based on regional population and employment projections identified by ABAG and growth in VMT identified by CCTA. Changes in regional, community-wide emissions within the project site could affect the ability of BAAQMD to achieve the air quality goals in the AQMP. Consequently, air quality impacts for a plan-level analysis are based on consistency with the regional growth projections.

The proposed project would develop a regional park and associated educational and interpretive facilities. These types of developments are not considered a regionally significant project that would affect regional VMT and warrant Intergovernmental Review by MTC pursuant to the CEQA Guidelines Section 15206(b)(2)(D). In addition, the proposed project would not result in an increase in the level of population or housing growth foreseen in City or regional planning efforts, as discussed in Chapter 4.12, Population and Housing. Additionally, the project site has been designated as open park space in previous planning documents, including the City's General Plan and the Reuse Project Area Plan. Therefore, the proposed project would not have the potential to substantially affect housing, employment, and population projections within the region, which is the basis of the Clean Air Plan projections. Furthermore, as described under Impact AQ-2, operation of the proposed Regional Park would not contribute to an existing air quality violation. These thresholds are established to identify projects that have the potential to generate a substantial amount of criteria air pollutants. Because the proposed project would not exceed these thresholds, the proposed project would not be considered by the BAAQMD to be a substantial emitter of criteria air pollutants. In summary, implementation of the proposed project would not conflict with the 2017 Clean Air Plan. Consequently, impacts would be *less than significant*.

Significance without Mitigation: *Less than significant.*

AQ-2	Implementation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
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BAAQMD has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO, PM₁₀, and PM_{2.5}. Development projects below the significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard or contribute substantially to an existing or projected air quality violation. According to BAAQMD's CEQA Guidelines, long-range plans, such as the proposed Plan, present unique challenges for assessing

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impacts.³² Due to the SFBAAB's nonattainment status for ozone and PM and the cumulative impacts of growth on air quality, long-range plans almost always have significant, unavoidable adverse air quality impacts. At a plan level, air quality impacts are measured by the potential for a project to exceed BAAQMD's significance criteria and contribute to California and National nonattainment designations in the SFBAAB.

Construction Emissions

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the project site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM₁₀ and PM_{2.5}) from soil-disturbing activities, such as grading and excavation. Air pollutant emissions from construction activities on site would vary daily as construction activity levels change. Implementation of the proposed Plan would involve the construction of a continuous bicycle, pedestrian, and non-motorized transportation routes, as well as open space, educational opportunities, and active recreation areas.

BAAQMD's plan-level guidelines do not require an evaluation of construction emissions for plan-level projects. However, because preliminary details regarding future construction activities are known at this time, construction emissions can be evaluated against BAAQMD's screening thresholds for project buildout. Based on BAAQMD's screening criteria, parks of 67 acres or larger have the potential to generate a substantial increase in criteria air pollutant emissions and would need further analysis. Based on the proposed site plan and phasing details, the proposed project would not include heavy construction equipment use within 1,500 feet of sensitive receptors, require more than 10,000 cubic yards of haul, or disturb more than 67 acres in any given year. Due to the nature of the project as a regional park, an intense construction schedule with heavy equipment is not anticipated. The areas anticipated to require the most construction include the Visitor Center, Diablo Center, and Corporation Yard. Each of these land uses would require construction on an area of 4 acres or less at a time, and would likely use equipment such as tractors, graders, and rubber-tired dozers.³³ Each of these construction phases would occur intermittently over the 31 years associated with project buildout. Existing federal, State, and local regulations, and policies and strategies of the proposed project described throughout this section protect local and regional air quality. Continued compliance with these regulations would reduce construction-related impacts. Consequently, construction-related impacts would be *less than significant*.

Significance without Mitigation: *Less than significant*.

Operational Emissions

In its current state, the existing project site does not generate long-term air pollutant emissions from the burning of fossil fuels in vehicles (mobile sources), energy use for cooling and heating (energy), or landscape equipment use and consumer products (area sources). Implementation of the proposed Plan would result in the development of up to 86 acres of land available for park facilities and passive

³² Bay Area Air Quality Management District, 2017, May. California Environmental Quality Act Air Quality Guidelines, http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on April 17, 2018.

³³ According to best available information and defaults from CalEEMod 2016.3.2.

recreational use and 2,417 acres of conservation area and open space, with the remaining acreage acting as a buffer between the park facilities and conservation areas. Criteria air pollutant emissions would be generated from on-site area sources (e.g., landscaping fuel, consumer products), vehicle trips generated by park visitors, and energy use in park buildings and facilities (e.g., natural gas used for cooking and heating). The primary source of long-term criteria air pollutant emissions would be project-generated vehicle trips. The proposed project would generate a total of 125 average daily weekday trips on opening day and 1,303 weekend trips at buildout (see Section 3.7 of Chapter 3 for visitor estimates). Table 4.2-5 identifies the criteria air pollutant emissions associated with the proposed project at opening year and buildout.

As shown in Table 4.2-5, the net increase in operational emissions generated by the project would not exceed BAAQMD daily or annual thresholds. Consequently, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard, and regional operational-phase air quality impacts would be *less than significant*. Consequently, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard, and regional operational-phase air quality impacts would be *less than significant*.

Significance without Mitigation: *Less than significant.*

AQ-3 Construction and operation activities associated with the proposed project would not expose sensitive receptors to substantial concentrations of air pollution.

The proposed project could expose sensitive receptors to elevated pollutant concentrations if it would cause or contribute significantly to elevated pollutant concentration levels. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects.

Construction Community Risk and Hazards

Construction associated with implementation of the proposed Plan would temporarily elevate concentrations of TACs and DPM in the vicinity of sensitive land uses during construction activities. The proposed project involves siting recreational land uses proximate to existing sensitive receptors in the vicinity of the project site. However, based on the proposed site plan and preliminary construction details, the proposed project will not include heavy construction equipment use within 1,500 feet of sensitive receptors, require more than 10,000 cubic yards of haul, or disturb more than 67 acres in any given year. The OEHHA adopted new guidance for the preparation of health risk assessments in March 2015. Emissions from construction equipment primarily consist of DPM, and OEHHA has developed a cancer risk factor and non-cancer chronic reference exposure level for DPM. These factors are based on continuous exposure over a 30-year time frame, and because the proposed Regional Park is anticipated to be developed in three phases over the course of 30 to 40 years, exposure of off-site receptors to DPM would be limited.

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TABLE 4.2-5 NET CHANGE IN REGIONAL OPERATION-PHASE CRITERIA AIR POLLUTANT EMISSIONS

Category	Criteria Air Pollutants (lbs/day) ^a			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Opening Day Operation (2023^b)				
Area	<1	<1	<1	<1
Energy	<1	<1	<1	<1
On-Road Mobile Sources	<1	<1	1	<1
Total	<1	<1	1	<1
BAAQMD Average Daily Project-Level Threshold	54	54	82	54
Exceeds Average Daily Threshold?	No	No	No	No
Buildout Operation (2050^b)				
Area	2	<1	<1	<1
Energy ^c	<1	<1	<1	<1
On-Road Mobile Sources	<1	1	3	1
Campfires	7	<1	1	1
Total	10	1	5	2
BAAQMD Average Daily Project-Level Threshold	54	54	82	54
Exceeds Average Daily Threshold?	No	No	No	No
Annual Emissions				
Category	Criteria Air Pollutants (tons/year)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Opening Day (2023)	<1	<1	<1	<1
Buildout (2050)	2	<1	1	<1
BAAQMD Annual Threshold	10 tpy	10 tpy	15 tpy	10 tpy
Opening Day Exceeds Threshold?	No	No	No	No
Buildout Exceeds Threshold?	No	No	No	No

a. Average daily emissions are based on the annual operational emissions divided by 365 days.

b. Opening day and buildout operation years are estimates based on the anticipated construction schedule and buildout time frame as given in the proposed Plan.

c. New buildings would be constructed to the 2016 Building Energy Efficiency Standards (effective January 1, 2017).

Source: PlaceWorks, 2018, using CalEEMod 2016.3.2. Emissions may not total to 100 percent due to rounding.

Construction of the proposed project would be intermittent over the project’s multi-decade buildout period, and intensive construction schedules and equipment are not anticipated for the majority of the project site. The Visitor Center, Diablo Center, and Corporation Yard would require the most intensive construction, and each of these complexes would develop 4 acres or fewer using equipment such as

graders, rubber-tired dozers, and tractors.³⁴ For the reasons stated above, it is anticipated that construction emissions would not pose a threat to off-site receptors near the project site. Therefore, a construction health risk assessment has not been prepared. Overall, construction emissions associated with the proposed project would not exceed BAAQMD's project level and cumulative significance thresholds for community risk and hazards, and the impact is *less than significant*.

Significance without Mitigation: *Less than significant*.

Operational Phase On-Site Community Risk and Hazards

Exposure to elevated concentrations of vehicle-generated PM_{2.5} and TACs at sensitive land uses has been identified by CARB, the California Air Pollution Control Officer's Association, and BAAQMD as a potential air quality hazard. The proposed project would not create new major sources of TACs, which are more commonly associated with industrial manufacturing or warehousing. Additionally, the proposed project does not propose non-residential land uses known to generate small quantities of TACs (e.g., emergency generators, dry cleaners, and gasoline dispensing facilities). Therefore, BAAQMD thresholds related to siting new sources of TACs and PM_{2.5} near existing or planned sensitive receptors are not applicable. The project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during operation. Therefore, operation-related health risk impacts associated with the proposed project are considered *less than significant*.

Significance without Mitigation: *Less than significant*.

Operational Phase CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. Because CO is produced in the greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds.

CCTA's CMP must be consistent with Plan Bay Area, and an overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth in outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle VMT and associated GHG emissions reductions. Because the proposed project would provide routes for alternative modes of transportation, the proposed project would be consistent with the overall goals of the Plan Bay Area. Additionally, the proposed project would not conflict with CCTA's CMP because it would not hinder the capital improvements outlined in the CMP or alter regional travel patterns. Furthermore, under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—in order to

³⁴ According to best available information and defaults from CalEEMod 2016.3.2.

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generate a significant CO impact.³⁵ Based on the traffic analysis conducted as part of this environmental analysis, the proposed project would generate a total of 382 weekend daily trips at opening day, and 1,303 weekend daily trips at buildout (see Chapter 4.14, Transportation and Traffic, for more information). This would not increase traffic volumes at affected intersections by more than BAAQMD screening criteria of 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Therefore, the proposed project would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the project. Localized air quality impacts related to mobile-source emissions would therefore be *less than significant*.

Significance without Mitigation: *Less than significant.*

AQ-4	Implementation of the proposed project would not result in other emissions (such as those leading to odors adversely affecting a substantial number of people)
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The proposed project would include park trails, roadways, a visitor center, and outdoor educational facilities. Construction and operation of the proposed Regional Park would not generate substantial odors or be subject to odors that would affect a substantial number of people. Examples of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. Parks and outdoor educational facilities uses are not associated with foul odors that constitute a public nuisance.

During operation, campsites could generate odors from cooking. Odors from cooking are not substantial enough to be considered nuisance odors that would affect a substantial number of people. Furthermore, nuisance odors are regulated under BAAQMD Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds.³⁶ In addition, odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance.

During construction activities of future developments on the project site, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. The construction activities shall also comply with BAAQMD's odor-related regulations. By the time such emissions reach any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Any odors produced during

³⁵ Bay Area Air Quality Management District, 2017, CEQA Air Quality Guidelines (Revised).

³⁶ It should be noted that while restaurants can generate odors, these sources are not identified by BAAQMD as nuisance odors since they typically do not generate significant odors that affect a substantial number of people. Larger restaurants that employ five or more people are subject to BAAQMD Regulation 7, Odorous Substances.

construction are not expected to be significant or highly objectionable and would be in compliance with BAAQMD Regulation 7. Therefore, impacts would be less than significant.

Significance without Mitigation: *Less than significant.*

4.2.4 CUMULATIVE IMPACTS

AQ-5 Implementation of the proposed project would not cumulatively contribute to air quality impacts in the San Francisco Bay Area Air Basin.

The SFBAAB is currently designated a nonattainment area for California and National O₃, California and National PM_{2.5}, and California PM₁₀ AAQS. Any project that produces a significant project-level regional air quality impact in an area that is in nonattainment adds to the cumulative impact. At a plan level, air quality impacts are measured by the potential for a project to exceed BAAQMD's significance criteria and contribute to California and National nonattainment designations in the SFBAAB. A project that exceeds the BAAQMD's significance criteria in the context of emissions from all other development projected within the entire SFBAAB would cumulatively contribute to impacts. Thus, per BAAQMD guidelines, the potential for the proposed project to result in cumulative air quality impacts is evaluated on an individual basis irrespective of other projects that may be occurring concurrently in the area (e.g., Concord Reuse Project). The proposed project would not exceed BAAQMD's significance thresholds for criteria air pollutants, conflict with applicable air quality plans, expose sensitive receptors to substantial pollutant concentrations, or generate objectionable odors. Therefore, in combination with past, present, and reasonably foreseeable projects elsewhere within the SFBAAB and with implementation of applicable regulations, the proposed project would result in a *less-than-significant* cumulative impact with respect to air quality.

Significance without Mitigation: *Less than significant.*

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4.3 BIOLOGICAL RESOURCES

This chapter describes the regulatory framework and existing conditions on the project site related to biological resources, and the potential impacts of the project on biological resources.

In response to the Notice of Preparation of this Draft EIR, comment letters were received from the City of Concord and the California Native Plant Society, both expressing concerns about the Plan's potential effects on Biological Resources. The City requests that the proposed Concord Hills Regional Park activities be consistent with the Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS) (see "Federal Endangered Species Act" section below). The Society requests that comprehensive biological surveys should identify special-status native plant species, locally rare native plants and sensitive natural communities (see impact discussion BIO-1, below).

4.3.1.1 ENVIRONMENTAL SETTING

4.3.1.2 REGULATORY FRAMEWORK

Federal Regulations

Clean Water Act

The Clean Water Act (CWA) regulates restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Areas meeting the regulatory definition of "waters of the United States" (jurisdictional waters) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE) Section 404 of the 1972 Clean Water Act (Federal Water Pollution Control Act) and Section 10 of the 1899 Rivers and Harbors Act (described below). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as waters of the United States, tributaries of waters otherwise defined as waters of the United States, the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to waters of the United States.¹ Wetlands on non-agricultural lands are identified using the *Corps of Engineers Wetlands Delineation Manual*.² Areas typically 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.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. To issue a permit under Section 404, USACE must also obtain a state water quality certification from one of the State's Regional Water Quality Control Boards (RWQCBs) pursuant to Section 401 of the Clean Water Act. The State Water Resources

¹ Code of Federal Regulations, Title 33, Part 328, Section 328.3.

² Environmental Laboratory, 1987, Corps of Engineers Wetlands Delineation Manual. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

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Control Board (SWRCB) is the State agency that, together with the RWQCB, is charged with implementing water quality certification in California.

A delineation of wetlands and other waters on the project site that are under the jurisdiction of the USACE was completed as part of the Concord Reuse Project Area Plan California Environmental Quality Act (CEQA) review process³ and verified by the USACE in 2011.⁴ Any work within areas defined as waters of the U.S. (i.e., wetlands and other waters) may require a Section 404 fill discharge permit from the USACE and Section 401 Water Quality Certification from the RWQCB.

Federal Endangered Species Act

The federal Endangered Species Act (FESA) protects listed threatened or endangered species from actions that result in a “take,” i.e., to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. “Take” can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as “take” even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the FESA only if they occur on federal lands or if the project requires a federal action, such as a Clean Water Act Section 404 fill permit from the USACE.

The USFWS has jurisdiction over federally listed threatened and endangered wildlife species under the FESA, while the National Marine Fisheries Service (NMFS) has jurisdiction over federally listed, threatened, and endangered marine and anadromous fish. Provisions under the FESA allow for an authorized “incidental” take of listed species under certain terms and conditions while conducting otherwise lawful actions.

On May 30, 2017, the USFWS issued a Biological Opinion (BO) for the Transfer and Redevelopment of the Former Concord Naval Weapons Station Project, including the East Bay Regional Park District’s (District) proposed development of a Regional Park, which is the designated conservation area for the Concord Reuse Project Area Plan. The proposed project will implement all applicable conservation measures specified by the BO, including all construction-related avoidance and minimization measures (see Appendix C). All applicable conservation measures are considered to be implemented as part of the proposed project.

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) (16 U.S.C., Section 703, Supp. I, 1989) makes it unlawful to pursue, hunt, take, capture, kill, possess, or sell migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. The trustee agency that addresses issues related to the MBTA is the USFWS. Migratory birds protected under this law include all native birds and certain game birds

³ H.T. Harvey & Associates, 2011, Concord Community Reuse Plan Concord, California Preliminary Delineation of Wetlands and Other Waters, September.

⁴ U.S. Army Corps of Engineers, 2011, Jurisdictional Delineation for the Concord Community Reuse Plan Site.

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(e.g., turkeys and pheasants).⁵ This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA protects active nests from destruction, and all nests of species protected by the MBTA, whether active or not, cannot be possessed. An active nest under the MBTA, as described by the Department of the Interior in its April 16, 2003 Migratory Bird Permit Memorandum, is one having eggs or young. Nest starts, prior to egg laying, are not protected from destruction.

All native bird species occurring on the project site are protected by the MBTA.

Federal Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC Sec. 668 et seq.) (BGEPA) makes it unlawful to import, export, take, sell, purchase, or barter any bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*), or their parts, products, nests, or eggs. A “take” under BGEPA has been interpreted to include altering or disturbing nesting habitat. Exceptions may be granted by the USFWS for scientific or exhibition use or for traditional and cultural use by Native Americans. However, no permits may be issued for the import, export, or commercial activities involving bald or golden eagles.

State Regulations

Porter-Cologne Water Quality Control Act

The RWQCB is responsible for protecting surface, ground, and coastal waters within its boundaries, pursuant to the Porter-Cologne Water Quality Control Act of the California Water Code. The RWQCB has jurisdiction under Section 401 of the Clean Water Act for activities that could result in a discharge of dredged or fill material to a water body. Federal authority is exercised whenever a proposed project requires a Clean Water Act Section 404 permit from the USACE in the form of a Section 401 Water Quality Certification. State authority is exercised when a proposed project is not subject to federal authority, in the form of a Notice of Coverage, Waiver of Waste Discharge Requirements. Many wetlands fall into RWQCB jurisdiction, including some wetlands and waters that are not subject to USACE jurisdiction. RWQCB jurisdiction of other waters, such as streams and lakes, extends to all areas below the ordinary high water mark.

Under the Porter-Cologne Water Quality Control Act, the SWRCB and the nine RWQCBs also have the responsibility of granting Clean Water Act National Pollutant Discharge Elimination System (NPDES) permits and waste discharge requirements for certain point-source and non-point discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

As stated above, any activities within the project site that impact waters of the United States or State will require 401 Certification and/or a Waste Discharge Requirement from the RWQCB. On the project site, drainages and wetlands that are considered waters of the United States are also considered waters of the

⁵ U.S. Fish and Wildlife Service, 2013, List of Migratory Bird Species Protected by the Migratory Bird Treaty Act as of December 2, 2013, <https://www.fws.gov/migratorybirds/pdf/policies-and-regulations/ListofMBTAProtectedSpecies1312.pdf>, accessed on May 10, 2018.

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State. However, no wetlands were identified that would likely be considered waters of the State but not waters of the U.S. (e.g., isolated wetlands).

California Endangered Species Act

The California Endangered Species Act (CESA) (Fish and Game Code of California, Chapter 1.5, Sections 2050-2116) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, the California Department of Fish and Wildlife (CDFW) has jurisdiction over State-listed species and regulates activities that may result in take of individuals listed under the Act. A project applicant is responsible for consulting with the CDFW, if required, to address activities that are likely to affect any CESA-listed threatened or endangered species or destroy or adversely affect habitat essential for such species. Habitat degradation or modification is not expressly included in the definition of “take” under the Fish and Game Code. The CDFW, however, has interpreted “take” to include the “killing of a member of a species which is the proximate result of habitat modification.”

California Environmental Quality Act

CEQA and the CEQA Guidelines provide guidance in evaluating impacts of projects on biological resources and determining which impacts will be significant. Section 15380(b) of the CEQA Guidelines provides that a species not listed on the federal or State lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the FESA and the CESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW or species that are locally or regionally rare.

The CDFW has produced three lists (amphibians and reptiles, birds, and mammals) of “species of special concern” that serve as “watch lists.” Species on these lists are of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Thus, their populations should be monitored. These species may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review per CEQA Guidelines Section 15380(b), Endangered, Rare, or Threatened Species.

The California Native Plant Society (CNPS), a non-governmental conservation organization, has developed a California rare plant ranking (CRPR) system species of concern. Vascular plants included on these lists are defined as follows:

- Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.
- Rank 1B: Plants rare, threatened, or endangered in California and elsewhere.
- Rank 2A: Plants presumed extirpated in California, but common elsewhere.
- Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere.
- Rank 3: Plants about which more information is needed—a review list.
- Rank 4: Plants of limited distribution—a watch list.

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These CRPR threat ranks are further described by the following threat code extensions:

- 0.1: seriously threatened in California
- 0.2: moderately threatened in California
- 0.3: not very threatened in California

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, adverse effects on plants appearing in Rank 1 or Rank 2 are, in general, are considered to meet the CEQA criteria to be potentially significant. Impacts on plants listed by the CNPS in Rank 3 or Rank 4 are also considered during CEQA review, although because these species are typically not as rare as those on Rank 1 or Rank 2, impacts are less frequently considered significant.

California Fish and Game Code

The California Fish and Game Code includes regulations governing the use of, or impacts on, many of the state's fish, wildlife, and sensitive habitats. The CDFW exerts jurisdiction over the bed and banks of rivers, lakes, and streams according to Sections 1601 to 1603 of the Fish and Game Code. The Fish and Game Code requires a Notification of Streambed Alteration for any activity that deposits debris, waste, or other material or substantially diverts or obstructs the natural flow of, or substantially alters the bed, channel, or bank of any river, stream, or lake.

Certain sections of the Fish and Game Code describe regulations pertaining to certain wildlife species. For example, Fish and Game Code Sections 3503, 2513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW. Raptors (i.e., eagles, falcons, hawks, and owls) and their nests are specifically protected in California under Fish and Game Code Section 3503.5, which 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." Non-game mammals are protected by Fish and Game Code Section 4150, and other sections of the Code protect other taxa.

Any work within channels with clearly defined beds and banks on the project site will require a Notification of Streambed Alteration and a possible Streambed Alteration Agreement from the CDFW per Section 1602 of the Fish and Game Code if the activities are found to substantially and adversely affect fish and wildlife resources. All native bird species that occur on the project site are protected by the California Fish and Game Code. As necessary, project activities will take measures to avoid impacts on nesting birds pursuant to Fish and Game Code Sections 3503, 3513, and 3800. Native mammals and other species on the project site are also protected by the Fish and Game Code, and measures may be required to avoid and minimize impacts on these species during construction activities.

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District Regulations

East Bay Regional Park District Master Plan (2013)

The East Bay Regional Park District Master Plan, adopted July 16, 2013, provides policy direction for resource stewardship and development of parks within the jurisdiction of the District. The Master Plan also includes a vision, a mission statement, as well as policies and goals addressing biological resources and management. The Natural Resource Management (NRM) section of the Master Plan includes the following policies related to biological resources, and applicable to the proposed project:

- NRM1: The District will maintain, manage, conserve, enhance, and restore park wildlife resources to protect essential plant and animal habitat within viable, sustainable ecosystems.
- NRM1b: To help mitigate the effects of climate change, the District will endeavor to conserve and connect habitat for native species through its acquisition and planning processes.
- NRM2: Plant and animal pest species will be controlled by using Integrated Pest Management (IPM) procedures and practices adopted by the Board of Directors. The District will employ IPM practices to minimize the impact of undesirable species on natural resources and to reduce pest-related health and safety risks to the public within developed facilities and/or high-use recreational areas.
- NRM4: The District will continue to integrate the principles of biodiversity and conservation into the management of its resources to maintain stable and functioning biological communities. This philosophy will help sustain healthy and balanced parkland environments for the education, enjoyment and well-being of present and future generations.
- NRM5: The District will maintain and manage vegetation to conserve, enhance and restore natural plant communities, to preserve and protect populations of rare, threatened, endangered and sensitive plant species and their habitats; and where possible, to protect biodiversity and to achieve a high representation of native plants and animals.
- NRM8: The District will conserve, enhance and restore biological resources to promote naturally functioning ecosystems. Conservation efforts may involve using managed conservation grazing in accordance with the District's Wildland Management Policies and Guidelines, prescribed burning, mechanical treatments, IPM and/or habitat protection and restoration. Restoration activities may involve the removal of invasive plants and animals, or the reintroduction of native or naturalized species, adapted to or representative of a given site.
- NRM9: The District will conserve and protect native animal species and enhance their habitats to maintain viable wildlife populations within balanced ecosystems. Non-native and feral animals will be managed to minimize conflicts with native wildlife species. The District will cooperate on a regular basis with other public and private land managers, and recognized wildlife management experts to address wildlife management issues on a regional scale.
- NRM12: The District will manage riparian and other wetland environments and their buffer zones to preserve and enhance the natural and beneficial values of these important resources and to prevent the destruction, loss, or degradation of habitat. The District will participate in the preservation, restoration and management of riparian and wetland areas of regional significance and will not initiate any action that could result in a net decrease in park wetlands. The District will encourage

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public access to the Bay/Delta shoreline, but will control access to riparian and wetland areas, when necessary, to protect natural resources.

- NRM12b: The District will engage in watershed management planning and practices that will address the shifts in habitat ranges caused by climate change through the preservation and enhancement of streams and wetland areas.

The Planning for Regional Parks and Trails section of the Master Plan includes a land use designation which specifically protects natural habitat, “Natural Units”:

- PRPT20: Natural, open space, or wildland areas with lower intensity recreational uses and facilities (primarily trails) will be designated as Natural Units. Natural Units will generally comprise the majority of parkland acreage, except in Regional Recreation Areas. Parklands will be designated as Natural Units to maintain open space and significant features in a cohesive areas. A Natural Unit may contain Special Protection Features and Special Management Features.

Local Regulations

City of Concord General Plan

Although not applicable to the District’s use and management of its own lands within the project site, the City of Concord’s General Plan includes goals, principles, and policies relevant to the environmental factors potentially affected by the proposed project, including the following:

- Goal LU-8: A transformed former Concord Naval Weapons Station (Concord Reuse Project) with land uses and design features that enhances the quality of life for all Concord Residents
- Principle LU-8.1: Achieve a complete and diverse community that provides well-connected neighborhoods and districts with high-quality urban design and convenient access to open space, daily necessities, and regional transit.
 - Policy LU-8.1.6: Design built features and the circulation system to respond to the CRP [Concord Reuse Project] site’s natural form. Where slopes of 30 percent or greater occur within planned development areas on the CRP site, they should generally be set aside as open space.
- Principle LU-8.2: Provide for a balance between development and open space on the CRP site.
 - Policy LU-8.2.1: Designate the most environmentally sensitive portions of the CRP site, including the Los Medanos Hills and the Mount Diablo Creek corridor, as permanent open space.
 - Policy LU-8.2.2: Incorporate a network of greenways within the CRP site that help define neighborhood edges, connect residents to services and workplaces, and provide access to recreational features and open space.
- Goal POS-2: A protected and accessible open space system
- Principle POS-2.1: Provide an Interconnected Open Space System.
 - Policy POS-2.1.1: Acquire, preserve, and maintain open space for future generations.

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- Policy POS-2.1.2: Participate in joint planning and implementation with the State of California Parks and Recreation Department, East Bay Regional Park District (District), and other appropriate agencies to establish connections to Mount Diablo State Park.
- Policy POS-2.1.3: Use the Trails Master Plan and Map to develop connections between open space areas.
- Policy POS-2.1.4: Incorporate portions of the CRP site into the regional open space network, and provide trail and greenway connections between this area and developed Concord neighborhoods.
- Principle POS-2.2: Preserve Natural Resources within Designated Open Space.
 - Policy POS-2.2.3: Strive to preserve open space in northeast Concord in order to maintain the visual profile of the Los Medanos Hills.
- 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 the District, Contra Costa County, the United States 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.
- Goal POS-3: Well-Planned Natural Resource Conservation
- 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 and restore native riparian vegetation and wildlife, and establish riparian corridors along all creeks.
- Principle POS-3.2: Preserve and Protect Wetlands.
 - Policy POS-3.2.2: Provide visual, and where practical, physical access to wetland areas in a manner consistent with protection of these fragile ecological systems.
 - Policy POS-3.2.3: For wetlands that are not adjacent to Suisun Bay, follow management and protection measures that are consistent with state and federal requirements.
- Principle POS-3.4: Preserve and Protect Wildlife and Vegetation Resources.
 - Policy POS-3.4.1: Conserve wildlife habitat and wildlife corridors, including seasonal migration routes, and require appropriate mitigation in the event such areas are impacted by development.
 - Policy POS-3.4.2: Protect rare, threatened, or endangered species and their habitats through the environmental review process and in accordance with State and Federal Law.
 - Policy POS-3.4.3: Retain significant vegetation, including native vegetation and heritage trees, where feasible, and require replacement plantings as appropriate for mitigation.
 - Policy POS-3.4.4: Plant vegetation to increase benefits to wildlife.

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- Policy POS-3.4.5: Coordinate with appropriate regulatory and trustee agencies to enhance protection of special status species and sensitive natural communities.
- Policy POS-3.4.6: Avoid construction-related activities during breeding and nesting seasons for special status species.
- Policy POS-3.4.7: Promote habitat restoration in areas of special status species.

Concord Reuse Project Area Plan

The Concord Reuse Project Area Plan includes principles and policies relevant to the environmental factors potentially affected by the proposed project, including the following:

- Principle C-5: Preserve and Protect Wildlife and Vegetation Resources in the CRP Area.
 - Policy C-5.1: Habitat Protection – Retain and enhance plant and wildlife habitat areas, particularly creeks, wetlands, riparian areas, special status species habitat, and other areas where there are environmentally sensitive resources.
 - Policy C-5.2: Biotic Surveys – Prior to approving any development plan, require project sponsors to conduct pre-construction botanical and wildlife surveys and to follow accepted grading and construction practices to minimize species loss. These surveys are typically conducted as part of CEQA review.
 - Policy C-5.3: Wildlife Movement – Facilitate wildlife migration across the site by protecting wildlife corridors such as Mount Diablo Creek, and minimizing the use of fences, walls, or structures that could pose barriers to wildlife movement.
 - Policy C-5.4: Invasive Plant Control – Minimize the potential for the spread of invasive plants as the CRP area is developed.
 - Policy C-5.5: Siting of Recreational Uses – Ensure that the siting of any recreational facilities or activities within the designated Conservation Open Space avoids sensitive habitat areas consistent with provisions of any applicable resource permits.

This includes the Cistern Pond, the coastal sage scrub in Rattlesnake Canyon, the Mount Diablo Creek riparian corridor, the eucalyptus grove at the eastern edge of the site, and areas set aside for wetland preservation or mitigation. Any recreational or interpretive development, including roads and trails to support such uses, that may occur in or near these areas should be limited in extent, and planned and constructed to avoid potential impacts.

- Principle C-7: Preserve and Protect Wetlands in the CRP Area.
 - Policy C-7.1: Wetland Protection – Manage and protect seasonal and perennial wetlands on the site, including freshwater marshes, seeps, springs, and ponds.
 - Policy C-7.2: Coordination with Resource Agencies – Work with regional, state and federal resource agencies with permitting authority relating to wetlands to obtain necessary sitewide permits and to establish requirements for mitigation of unavoidable wetland impacts.
 - Policy C-7.3: Detailed Wetlands Mapping – Prior to or in conjunction with the process of obtaining resource permits, require detailed surveys in order to more precisely identify jurisdictional waters

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of the United States and State of California, including wetlands. These surveys will need to be verified by the USACE and the RWQCB.

- Policy C-7.4: Creation of New Wetlands – When creating mitigation wetlands, give first priority to sites within the CRP area and second priority to sites elsewhere in the Mount Diablo Creek watershed. Alternatively, impacts can be mitigated through the purchase of credits in an approved wetland mitigation bank whose designated service area includes the site.
- Policy C-7.5: Timing of Mitigation – Require mitigation wetlands to be created prior to or concurrently with the filling of existing wetlands.
- Policy C-7.6: Invasive Species Control Plan – Prepare, or require to be prepared, 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 be a single document that addresses the entire project area, and it may be integrated with other habitat management plans to ensure that impacts to special-status species and their habitats are avoided.
- Principle C-8: Protect Special Status Species in the CRP Area.
 - Policy C-8.1: Habitat Protection – Protect the habitat of the special status species listed in Tables 3-1 and 3-2 by designating such areas as part of the Conservation Open Space district wherever feasible.
 - Policy C-8.2: Mitigation of Habitat Impacts – Where disturbance of special status habitat is unavoidable, minimize and compensate for impacts in a way that is consistent with the measures outlined in the adopted Mitigation Monitoring and Reporting Program (MMRP) and/or sitewide conservation permits.
 - Policy C-8.3: Location of Replacement Habitat – To the extent practical and consistent with relevant conservation permits, locate replacement habitat for special status species in the Conservation Open Space district. If this is infeasible, first priority should be given to off-site locations within the Mount Diablo Creek watershed and second priority should be given to other sites within Contra Costa County Habitat Conservation Plan areas, consistent with all applicable resource permits.
 - Policy C-8.4: Maintenance of Replacement Habitat – Require provisions for the maintenance, monitoring, and funding of any replacement habitat created for special status species.
 - Policy C-8.5: Minimizing Construction and Post-Construction Impacts on Habitat – Ensure that grading, earth movement, and construction occurs in ways that avoids and minimizes potential impacts on the habitat of sensitive species.
 - Policy C-8.6: Protection of Bird Nests – Avoid clearing trees and shrubs during the breeding season and/or in a manner that could damage or destroy bird nests. Development shall comply with all State and federal laws regarding native and migratory birds.
 - Policy C-8.7: Habitat Mitigation and Monitoring Plans – As appropriate, require preparation of Habitat Mitigation and Monitoring Plans prior to development.

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City of Concord Tree Preservation and Protection Ordinance

The City of Concord Tree Preservation and Protection Ordinance (Chapter 18.310 of the Concord Municipal Code) serves to protect large native trees, trees of historic or cultural significance, groves and stands of mature trees, and mature trees. Protected trees may occur in any zoning district. Protected trees are defined in Chapter 18.310.020 and include (1) any of the following listed native trees with a diameter of 12 inches or more as measured 54 inches above the ground (e.g., diameter at breast height) or a multi-stemmed native tree on the list below where the sum of all stem diameters is 12 inches or more as measured 54 inches above the ground: valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*), California bay (*Umbellularia californica*), California buckeye (*Aesculus californica*), and California sycamore (*Platanus racemosa*); (2) other trees with a diameter of 24 inches or more as measured 54 inches above the ground or more or a multi-stemmed nonnative tree where the sum of all stem diameters is 24 inches or more as measured 54 inches above the ground; (3) any tree which has been previously designated as a heritage tree by planning commission resolution; (4) a tree required to be planted, relocated, or preserved as a condition of approval of a tree permit or other discretionary permit, and/or as environmental mitigation for a discretionary permit; and (5) a tree with a trunk diameter of 6 inches or more or one component trunk of a multi-stemmed tree with a diameter of 4 inches or more as measured 54 inches above the ground that is located within the structure setback of creeks or streams as defined in Concord Development Code 18.305.040(A) (Structure Setbacks for Unimproved Channels).

A tree removal permit is required for the removal or relocation of any protected tree in all zoning districts when the removal or relocation is associated with a proposal requiring a planning permit pursuant to the Concord Development Code.

A number of trees on the project site may meet the definition of a protected tree. If any work within the project site will result in the removal of a protected tree, the District must obtain a tree removal permit from the City of Concord.

4.3.1.3 EXISTING CONDITIONS

General Project Area Description

Historical agricultural and military uses, including farming, livestock grazing, munitions storage, and associated activities, have extensively altered and influenced biological conditions throughout the approximately 2,543-acre project site. Most of the natural vegetation on the lower hills and flatland of the site was altered by farming practices between the late 1800s through the 1940s. Hay production likely altered or removed much of the native grasslands and natural plant communities in the lowlands. Between 1944, when the Navy purchased the site, and 1975, uncontrolled grazing was allowed year-round. After 1975, as leases became eligible for renewal, five-year leases specifying the maximum number of animal unit months for each allotment were issued.

Since 1944, the predominant military uses of the project site consisted of storing explosives and guns. The Navy also constructed a rail system. Networks of roads, railroads, and utilities link the buildings across the

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site. The Bay Area Rapid Transit (BART) rail system also serves the area, passing just north of the project boundary.

Portions of the site not used for munitions storage/transport areas have been exposed to relatively little direct human activity in recent decades. Nevertheless, the network of roads, rail lines, and munitions magazines developed by the Navy has substantially altered runoff, drainage, and vegetation patterns in the Mount Diablo Creek watershed in which the project site is located. Mount Diablo Creek, located just south of the south-central project boundary, is the major hydrologic feature of the area. Currently, extensive fencing exists along the perimeter of the site, and the site is not accessible to the public.

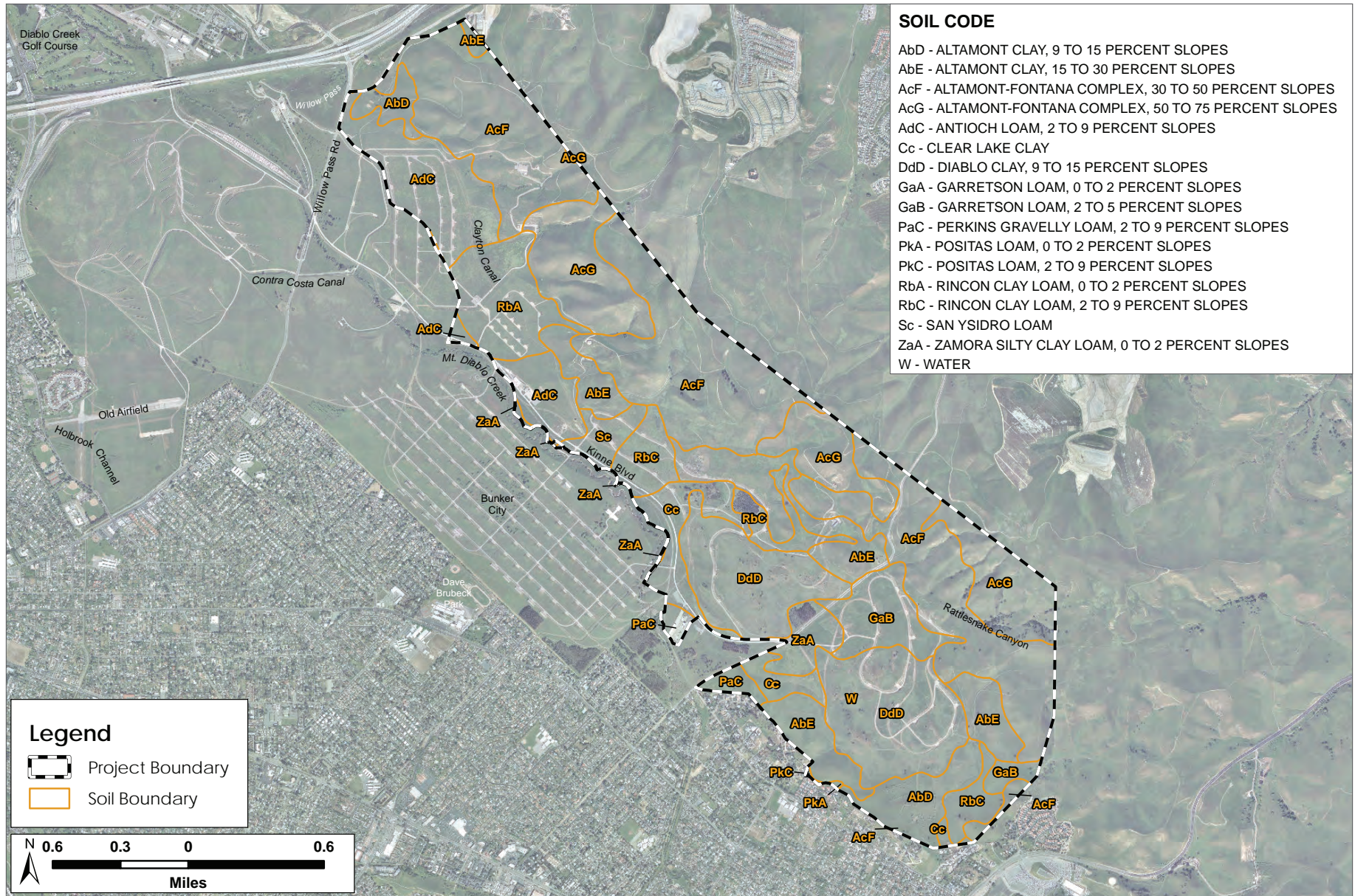
Site topography consists primarily of gently sloping lowlands, with the steeper Los Medanos Hills along the eastern boundary. Elevations range from approximately 90 to about 1,000 feet above sea level. The Clayton section of the Greenville Fault Zone runs northwest to southeast through the eastern portion of the project site. The 17 soil series found within the project site are listed in Table 4.3-1 and shown on Figure 4.3-1.

TABLE 4.3-1 SOIL TYPES ON THE PROJECT SITE

Soil Series Symbol	Soil Series Name
AbD	Altamont clay, 9 to 15% slopes
AbE	Altamont clay, 15 to 30% slopes
AcF	Altamont-Fontana complex, 30 to 50% slopes
AcG	Altamont-Fontana complex, 50 to 75% slopes
AdC	Antioch loam, 2 to 9% slopes
Cc	Clear Lake clay
DdD	Diablo clay, 9 to 15% slopes
GaA	Garretson loam, 0 to 2% slopes
GaB	Garretson loam, 2 to 5% slopes
PaC	Perkins gravelly loam, 2 to 9% slopes
PkA	Positas loam, 0 to 2% slopes
PkC	Positas loam, 2 to 9% slopes
RbA	Rincon clay loam, 0 to 2% slopes, MLRA 14
RbC	Rincon clay loam, 2 to 9% slopes, MLRA 14
Sc	San Ysidro loam
W	Water
ZzA	Zamora silty clay loam, 0 to 2% slopes

Source: Natural Resource Conservation Service, 2004, Soil Survey Geographic (SSURGO) database for Contra Costa County, California.

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Source: H.T. Harvey & Associates, 2018.

Figure 4.3-1
 Project Site Soils

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The project site experiences a Mediterranean climate—winters are cool and wet, while summers are warm and dry. Mean annual precipitation for the area is 18.38 inches, with most of the rain falling between October and April.⁶

Existing Land Uses, Vegetation Communities, and Habitats

The following discussion describes the land uses, vegetation communities, and habitats present on the project site. Because an animal’s habitat (i.e., where it lives and reproduces in the environment) is largely determined by the vegetation present, both vegetation communities and habitats are commonly defined in terms of their dominant plant species (e.g., annual grassland, oak woodland), and this convention will be used in this analysis. Thus, in this document the terms “vegetation community” and “habitat” are used interchangeably; both refer to assemblages of vegetation that are similar in species composition, growth form, and other variables such as soil type or hydrologic conditions.

Nine vegetation communities/land uses were identified on the project site: California annual grassland; coastal sage scrub; developed; oak woodland/savannah; plantations; riparian woodland; freshwater marsh; seasonal wetlands; and drainages, canals, and ponds. The general locations of these habitat types are shown on Figure 4.3-2, and the acreages associated with each vegetation community are provided in Table 4.3-2. The dominant and characteristic plant and animal species for each of these habitats are described below. These descriptions are derived largely from the USFWS’s BO for the Transfer and Redevelopment of the Former Concord Naval Weapons Station.⁷

TABLE 4.3-2 LAND USE AND VEGETATION COMMUNITY/HABITAT ACREAGES ON THE PROPOSED REGIONAL PARK

Vegetation Community	Area (Acres)	Percentage of Site
California annual grassland	2,244	89.2
Coyote brush/coastal sage scrub	0.2	<0.1
Developed	120	4.8
Oak woodland/savannah	99	3.9
Orchards and tree plantations	37	1.5
Riparian woodland	1	<0.1
Freshwater marsh	5	0.2
Seasonal wetlands	5	0.2
Drainages, canals, and ponds	5	0.2
Total	2,516	100.00

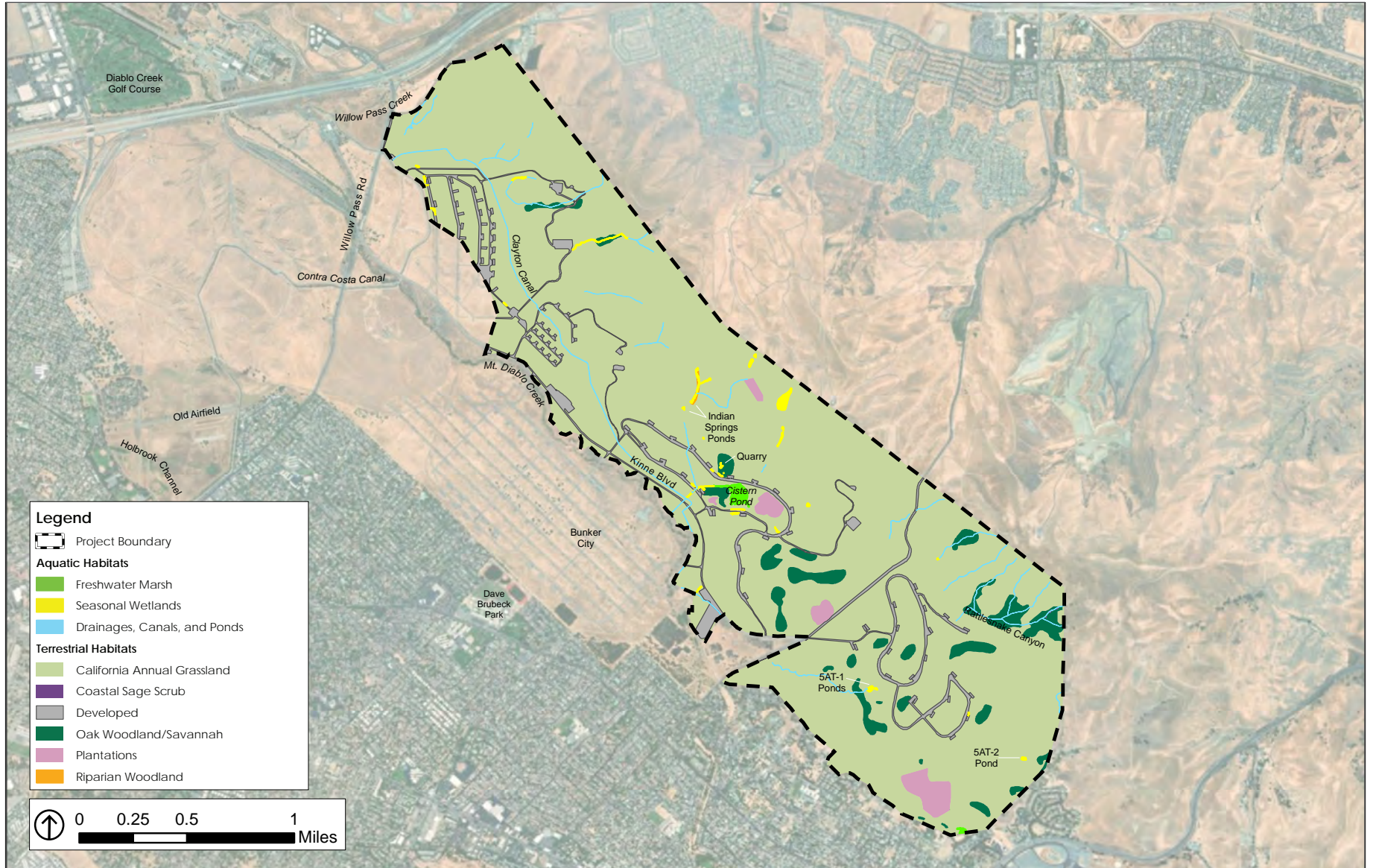
Note: Total site acreage of 2,516 does not match proposed project site area of 2,543 acres because the acreages in this table come from the Biological Opinion, which was based on a slightly smaller site area than the current version of the Draft Land Use Plan.

Source: H.T. Harvey & Associates, 2018.

⁶ Western Regional Climate Center, 2019, Concord Wastewater Treatment Plant, California (0471967), Period of Record Monthly Climate Summary, Period of Record: 09/01/1991 to 06/09/2016, <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca1967>, accessed on February 12, 2019.

⁷ U.S. Fish and Wildlife Service. 2017. Formal Consultation on the Proposed Transfer and Redevelopment of the Former Concord Naval Weapons Station, Contra Costa County, California.

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Source: H.T. Harvey & Associates, 2018.

Figure 4.3-2
Project Site Habitat Map

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As can be seen by the acreages in Table 4.3-2, the vast majority of the site is characterized as California annual grassland. All sensitive plant communities combined (i.e., oak woodland/savannah; riparian woodland, freshwater marsh; seasonal wetlands; and drainages, canals, and ponds) total less than 5 percent of the acreage of the grasslands. Although of relatively high ecological value, the aquatic habitats on site occur as narrow bands or discrete features among an immense landscape of grassland species.

California Annual Grassland

Vegetation

California annual grassland is the most abundant vegetation community on the project site, occupying 2,244 acres or more than 89 percent of the site. The California annual grassland found here is dominated by non-native annuals, including wild oats (*Avena fatua*), rigpgut grass (*Bromus diandrus*), Italian rye grass (*Festuca perennis*), and yellow star-thistle (*Centaurea solstitialis*). Yellow star-thistle is an extremely invasive species, and over 50 percent of the site exhibits cover levels of at least 25 percent.⁸

This analysis includes all of the grasslands on the site under the single descriptor of “California annual grasslands,” while 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 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,⁹ these plant assemblages include significant percentages of plant taxa other than grasses. Occurrences of many of these native species, such as wildflowers, depend 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 Consulting¹⁰ also indicate that populations of noxious weeds are expanding within the annual grassland community.

Small, remnant stands of native, perennial grasslands were located on site in 2008¹¹ and in verification field surveys conducted by H. T. Harvey & Associates during the preparation of the Concord Community Reuse Plan FEIR.¹² These native grasses occur in scattered stands of varying sizes within the broader annual grasslands and are primarily dominated by purple needlegrass (*Nassella pulchra*). Associate grass

⁸ 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.

⁹ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area.

¹⁰ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area.

¹¹ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area.

¹² City of Concord, 2010, Concord Community Reuse Plan Final Environmental Impact Report.

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species include Sandberg bluegrass (*Poa secunda*), California fescue (*Festuca californica*), and California melic (*Melica californica*).

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 (*Sisyrinchium bellum*), and creeping wildrye (*Leymus triticoides*).¹³ In several locations, the upland species of this vegetation community intermix or co-occur with many of the wetland plants that dominate the seasonal wetlands described below. Where the upland grasses and forbs dominate, such areas were identified as occurring within the California annual grassland.

It is important to note that there are many locations within the California annual grasslands that are dominated by species adapted to or able to tolerate ground disturbance 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 broadleaf 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 on the project 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, and *Prunus* spp.;¹⁴ 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.

Wildlife

In general, annual grasslands support relatively low wildlife diversity due to the structural simplicity of this habitat type. However, because the project site provides broad expanses of grasslands, and because this habitat type occurs within a mosaic of small patches of oak woodland, wetlands, and other habitats providing additional breeding, feeding, perching, and cover resources for wildlife species, the California annual grasslands on the project site provide relatively high-quality habitat for species typical of central California grasslands.

Characteristic wildlife species in annual grasslands on the project 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 Sierran chorus frog (*Pseudacris regilla*) and western toad (*Anaxyrus boreas*) are widespread and are often found in moister areas within

¹³ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area.

¹⁴ 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.

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the grasslands 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 most of the project site. 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 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 non-breeders, forage regularly in grasslands on the site. These include the loggerhead shrike (*Lanius ludovicianus*), savannah sparrow (*Passerculus sandwichensis*), and a variety of raptors, such as 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*), pairs of which have nested within a eucalyptus grove located along the north-central boundary of the site.

Coastal Sage Scrub

Vegetation

Coastal sage scrub, a shrub-dominated vegetation community, occupies a limited area on the site (0.2 acres, comprising less than 0.01 percent of the site). This community occurs on a northwest-facing slope within Rattlesnake Canyon in the southeast corner of the project site, forming a near monoculture of shrub species that are very different from the surrounding vegetation types. This community is dominated by California sagebrush (*Artemisia californica*).

Wildlife

The coastal sage scrub habitat on the project site is not extensive enough to support a distinctive wildlife community. As a result, most of the wildlife species using this habitat are associated more generally with dense scrubby vegetation or are characteristic of the adjacent California annual grassland and oak woodland habitats. Reptiles such as western fence lizards, California whiptails (*Aspidoscelis tigris munda*), and western rattlesnakes occur in this habitat. The only brush mouse (*Peromyscus boylii*) recorded on the project site was trapped in Rattlesnake Canyon,¹⁵ 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 the coastal sage scrub on the site, and the dense nature of this habitat provides cover for white-crowned sparrows (*Zonotrichia leucophrys*), golden-crowned sparrows (*Z. atricapilla*), and a variety of mammals.

¹⁵ 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.

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Developed

Vegetation

Developed areas of the site including roadways, parking lots, and asphalt aprons surrounding buildings make up 120 acres, or 4.8 percent of the site. Also included are a wide variety of structures, including buildings and magazines. This relatively broad category is collectively used to describe any land surface on site that consists primarily of steel, asphalt, or concrete. Such areas often contain patches of ruderal vegetation as well as landscape trees and shrubs. During construction by the Navy, the tops of the magazines on the site were covered with soil, and a plant community similar in structure and composition to the adjacent grasslands has developed over the years. As such, the top of the magazine structures has been included in the California annual grassland vegetation community.

Wildlife

Developed areas typically support a small suite of relatively common, often urban-associated wildlife species that are tolerant of periodic human disturbance. Non-native species associated with developed areas include 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*). 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. Unoccupied magazines and other structures on the site also provide nesting and roosting habitat for some species of bats, such as the Yuma myotis bat (*Myotis yumanensis*), Brazilian free-tailed bat (*Tadarida brasiliensis*), and big brown bat (*Eptesicus fuscus*).

Oak Woodland/Savannah

Vegetation

Both oak woodland and oak savannah occur on the project site, although they occupy only 99 acres, or 3.9 percent of the site. The East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (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 project site, however, is in the form of small, clustered pockets of trees occurring on more mesic sites within the larger oak savannah/grassland. Therefore, the two community types are herein discussed together. Typical oak species present are coast live oak, blue oak, and valley oak. Scattered buckeye trees are a sub-dominant 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 trees form closed canopies within the oak woodland communities in some of the ephemeral drainages on 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 in the oak savannah include the same

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suite of non-native annual grasses and forbs that occur in much of the California annual grassland habitat on site.

Wildlife

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 woodlands 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 (*Picoides nuttallii*), 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 (*Psaltriparus minimus*). 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 site have not been well studied, a variety of species may occur here, possibly including the California myotis bat, Yuma myotis bat, big brown bat, pallid bat (*Antrozous pallidus*), and Brazilian free-tailed bat.

Plantations

Vegetation

The older eucalyptus groves on the project site were planted by homesteaders as windbreaks and shade trees during the late 1800s.¹⁶ Later, the University of California Cooperative Extension planted test groves of eucalyptus to evaluate the cost of eucalyptus energy production.¹⁷ The United States Forest Service also maintained several plantations at the site that consisted of test plantings of pine, including Coulter pine (*Pinus coulteri*) and others, and blue gum eucalyptus. Each stand has several hundred trees.

Wildlife

The 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 also 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

¹⁶ 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.

¹⁷ Sandiford, R.B. and F.T. Ledig, 1983, Economic Evaluation of Eucalypt Energy Production. Gen. Tech. Rep. PSW-69. Berkeley, California. Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture.

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trees as well, and eucalyptus flowers provide insects and nectar for a variety of bird species. Dense foliage within the pine plantations provides ideal roost sites for owls such as the barn owl.

Riparian Woodland

Vegetation

Riparian communities, from an ecological perspective, are generally described as a transition between aquatic habitats and the adjacent upland terrestrial habitats along freshwater drainages. They are identified by distinctive vegetation communities that generally border streams, creeks, and drainage channels. The vegetation becomes established in response to the elevated moisture content of the soils, which is due to the presence of flowing water on a seasonal or perennial basis. On the project site, riparian woodland is very limited in extent (1 acre) and not well developed, occurring only adjacent to upper and lower Indian Springs. Vegetation consists mainly of scattered willows (*Salix* sp.).

Wildlife

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. However, the riparian woodland habitat on the project site is very limited in size and structural diversity, reducing the diversity and abundance of species that this habitat can support. Thus, wildlife species found in this habitat are likely species typically associated with the adjacent grasslands and aquatic habitat.

Freshwater Marsh

Vegetation

Freshwater marsh is present on the project site at the Cistern Pond, perennial stock ponds, portions of the Contra Costa Canal, and a marsh at the southeast border of the property. These areas occupy a very limited portion of the site (approximately 5 acres, or 0.2 percent). 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 that tends to be too deep to allow emergent vegetation to become established. The floristic composition of these wetlands is fairly variable, but typical dominant species include California bulrush (*Schoenoplectus californicus*), American bulrush (*Schoenoplectus americanus*), cattails (*Typha* spp.), sedges (*Carex* spp.), and Baltic rush (*Juncus balticus*). Associate wetland 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 (*Helminthotheca echioides*). The perennial stock pond located just east of the Cistern

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Pond retains standing water well into the month of August.¹⁸ The dominant species occurring around the perimeter of this pond includes cosmopolitan bulrush (*Bolboschoenus maritimus*).

Wildlife

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 Sierran chorus frogs 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. Nevertheless, marsh habitat in these areas supports common amphibians such as western toads and Sierran chorus frogs, and common garter snakes (*Thamnophis sirtalis*) may also 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 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 (*Melospiza melodia*), 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.

Seasonal Wetlands

Vegetation

The limited areas of seasonal wetlands, which occupy approximately 5 acres, or 0.2 percent of the project 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, wetlands around the perimeter of seasonal stock ponds, and numerous shallow depressions within the grasslands, including those previously described by others as vernal pools.¹⁹ In contrast with the obligate emergent wetland plants found in the freshwater marsh habitats, the majority of seasonal wetlands on the site support a predominance of marginal wetland grass species²⁰ such as Italian ryegrass (*Festuca perennis*) and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), as well as bristly ox-tongue and bird's-foot trefoil (*Lotus corniculatus*).

¹⁸ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area.

¹⁹ 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 CNWS (City of Concord 2010).

²⁰ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area.

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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 site. 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. Most of these seasonal wetlands support plants such as curly dock and annual beard grass, along with other annual hydrophytes (“water-loving plants”).

Wildlife

During the wet season, seasonal wetlands are used by a variety of wildlife, including various amphibians such as the Sierran chorus frog, western toad, and California tiger salamander as well as shorebirds such as the killdeer, greater yellowlegs (*Tringa melanoleuca*), and Wilson’s snipe (*Gallinago delicata*). 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.

Drainages, Canals, and Ponds

Vegetation

This section describes linear drainage features, both natural and man-made, and impoundments. The important features that characterize these habitats are the presence of surface water (at least seasonally) and the general absence of vegetation. These features occupy a limited portion of the project site, collectively comprising approximately 5 acres, or 0.2 percent of the site. For the purposes of this discussion, these communities are divided into the following subcategories:

- **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 onto the project 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 Mount Diablo Creek, which flows in a northwest direction along the south-central boundary of the project site. In locations where the hillslope 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 Mount Diablo Creek. As a result, only a few of the drainages are hydrologically connected to Mount 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 through the project 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 loops through the northwest section of the site. The north end of the Clayton Canal begins on site from an aqueduct

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connected to the east side of the Contra Costa Canal, extending south where it exits the central portion of the site.

- **Ponds.** The site includes several 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. Levels are highest in the winter because 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,^{21,22} but it contained no water in March 2009²³ or March 2015. The vegetative components of the Cistern Pond have been described above under freshwater marsh habitat.

Wildlife

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, they do not provide high-quality aquatic or wetland habitat aside from the ponds that are scattered among the drainages. Further, red-legged frogs are not expected to breed in the drainages due to their ephemeral nature.

A number of ponds of varying size and hydrology are present on the project site. Few of these ponds 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 upper Indian Springs pond, reported by Downard²⁴ as perennial, did not contain water during H.T. Harvey & Associates’ March 2009 field surveys²⁵ or during field surveys conducted in March of 2015. 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 Sierran chorus frogs, which in turn provide food for predators such as herons, egrets, belted kingfishers (*Megaceryle alcyon*), raccoons, and other species. Ducks, herons, and egrets forage within the Clayton Canal and Contra Costa Canal when these features hold water.

²¹ 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.

²² Department of the Navy, 2006, Final Environmental Condition of Property Report for the Naval Weapons Station Seal Beach Detachment Concord, Concord, California. Base Realignment and Closure Program Management Office, San Diego, California.

²³ City of Concord, 2010, Concord Community Reuse Plan Final Environmental Impact Report.

²⁴ 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.

²⁵ City of Concord, 2010, Concord Community Reuse Plan Final Environmental Impact Report.

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Special-Status Species and Sensitive Habitats

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.” In order to assess the impacts of the Regional Park project, special-status species have been defined as described below. Impacts on these species are regulated by some of the federal, state, and local laws and ordinances described under “Regulatory Setting” above.

Special-Status Plants

For purposes of this analysis, “special-status” plants are considered vascular or non-vascular plant species and lichens that are:

- Listed under the FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under the CESA as threatened, endangered, rare, or a candidate species.
- Listed by the CNPS as rare or endangered with CRPR 1A, 1B, 2A, or 2B.
- Listed by the CNPS as CRPR 3 or 4.

Several general plant surveys have failed to detect any special-status plants on the project site.^{26,27} Species-specific or multiple-season botanical surveys for special-status plants that may occur at the site were conducted by Vollmar Consulting 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.²⁸

No occurrences of any plants meeting the definition of special-status plants provided above were documented on the project site. The Vollmar Consulting study²⁹ 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 Consulting³⁰ raised the possibility that the lack of special-status plants could have been influenced by the unusually dry spring season of 2008. Of the special-status plants with suitable habitat present on the project site, Vollmar

²⁶ Jones and Stokes Associates, Inc., 1982, A Natural Resource Survey: Naval Weapons Station, Concord, California, page 171.

²⁷ 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.

²⁸ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area.

²⁹ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area.

³⁰ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area.

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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, and it could not conclude absence because of the relatively dry winter. 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.³¹ Round-leaved filaree has recently been removed from the CNPS list of special-status plants owing to the discovery of large populations, so the only species remaining from Vollmar’s survey that has not been adequately surveyed for is big tarplant.

H.T. Harvey & Associates developed a list of 71 special-status plants thought to have some potential for occurrence in the area covered by the Concord Reuse Project Area Plan. The list was compiled using CNPS lists and California Natural Diversity Database (CNDDDB) records as well as reports of earlier surveys conducted on the site. Of the 71 different plant species considered for potential occurrence, 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 to 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. All but four of the remainder of the special-status plants (41 species) for which suitable habitat was determined to be present, were included in the survey efforts by Vollmar Consulting.³² Four species for which potentially suitable habitat is present on the project site (i.e., johnny-nip [*Castilleja ambigua* var. *ambigua*], Jepson’s coyote thistle [*Eryngium jepsonii*], Toren’s grimmia [*Grimmia torenii*], and woodland woollythreads [*Monolopia gracilens*]) were designated as special-status following the completion of the surveys conducted by Vollmar Consulting in 2008,³³ and thus were not included in the special-status species table produced for that report. Nevertheless, all vascular species identified during the 2008 survey were documented, and none of these four species were identified on the site. Similarly, the species were not documented during the botanical survey conducted by Downard.³⁴

As a result of the negative findings of prior investigations into the potential occurrence of special-status plants on the site, results of the protocol-level field surveys conducted by Vollmar Consulting,³⁵ and results of the additional field surveys conducted by H.T. Harvey & Associates in 2009,³⁶ none of the

³¹ City of Concord, 2010, Concord Community Reuse Plan Final Environmental Impact Report.

³² Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area, September.

³³ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area, September.

³⁴ 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.

³⁵ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area, September.

³⁶ City of Concord, 2010, Concord Community Reuse Plan Final Environmental Impact Report.

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special-status plants for which suitable habitat was determined to occur on the site are considered present at this time, with the possible exception of the big tarplant. The germination and growth of this 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 its absence cannot be made at this time. A detailed description of this species, including its potential to occur on the project site, is provided below:

- **Big Tarplant (*Blepharizonia plumosa*).** Federal Listing Status: None; State Listing Status: None; CRPR List: 1B.1. Big tarplant is an annual herb in the sunflower family (Asteraceae) that blooms from July through October. This plant grows on dry, grassy slopes in valley and foothill grassland habitat at elevations between 98 and 1,657 feet.³⁷ Big tarplant is known from Alameda, Contra Costa, San Joaquin, San Luis Obispo, and Stanislaus Counties. It is extirpated from its historic range in Solano County. Most historic occurrences were probably extirpated by agriculture and non-native plants. Grasslands within the project site provide suitable habitat for this species.

Special-Status Animals

The legal status and potential for occurrence of special-status animal species known to occur or potentially occurring in the general vicinity of the project site are provided in Table 4.3-3 and shown in Figure 4.3-3. For the purposes of this analysis, the general vicinity of the project is defined as the area within a 5-mile radius. Expanded descriptions are provided in Appendix C for those species where potentially suitable breeding habitat occurs on the project site, as well as species for which resource agencies have expressed particular concern and for which expanded discussion is required.

Several special-status animal species were determined to be absent from the project site due to a lack of suitable habitat or to evidence that the species does not occur in the project vicinity. Species considered for occurrence but rejected, as well as the reasons for their rejection, are included in Table 4.3-3. Several special-status species occur on the project site as nonbreeding transients, foragers, or migrants, but they do not breed in or in areas very close to the project site, and suitable nesting/breeding habitat is absent on the project site. These species include the bald eagle, American peregrine falcon, northern harrier (*Circus cyaneus*), short-eared owl (*Asio flammeus*), long-eared owl (*Asio otus*), Vaux's swift (*Chaetura vauxi*), olive-sided flycatcher (*Contopus cooperi*), yellow warbler (*Setophaga petechia*), grasshopper sparrow (*Ammodramus savannarum*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), tricolored blackbird (*Agelaius tricolor*), and western red bat (*Lasiurus blossevillii*). Because the short-eared owl, long-eared owl, Vaux's swift, olive-sided flycatcher, yellow warbler, and grasshopper sparrow, are only considered a species of special concern when nesting, they are not considered a special-status species when they occur as a nonbreeding visitor to the project site.

³⁷ California Native Plant Society, 2018, Inventory of Rare and Endangered Plants (online edition). California Native Plant Society. Sacramento, California, <http://www.cnps.org/inventory>, accessed on May 10, 2018.

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TABLE 4.3-3 SPECIAL-STATUS ANIMAL SPECIES, THEIR STATUS, AND POTENTIAL OCCURRENCE ON THE PROJECT SITE

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Federal or State Endangered, Threatened, or Candidate Species			
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	Grassy or mud-bottomed swales, earth slump, or basalt-flow depression pools in grasslands.	Absent. No known records on the project site or in the general vicinity. Protocol-level dry-season and wet-season surveys conducted in 2007 and 2008 throughout the Concord Naval Weapons Station (CNWS) did not detect the species. ^a
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	FE	Grass or mud-bottomed swales in grasslands on old alluvial soils underlain by hardpan.	Absent. No known records on the project site or in the general vicinity. Protocol-level dry-season and wet-season surveys conducted in 2007 and 2008 throughout the CNWS did not detect the species. ^a
Longhorn fairy shrimp (<i>Branchinecta longiantenna</i>)	FE	Vernal pools with clear to turbid water in grass-bottomed pools and clear-water sandstone depression pools.	Absent. No known records on the project site or in the general vicinity. Protocol-level dry-season and wet-season surveys conducted in 2007 and 2008 throughout the CNWS did not detect the species. ^a
Green sturgeon (<i>Acipenser medirostris</i>)	FT, CSSC	Spawns in large river systems such as the Sacramento River; forages in nearshore oceanic waters, bays, and estuaries.	Absent. Suitable habitat is absent from the project site. Further, the species is not expected to occur in Mount Diablo Creek along the project's southern border due to barriers to fish migration (such as a utility berm near Clyde that completely blocks lower Mount Diablo Creek downstream of the site, except during very high flows), and the absence of the species during surveys.
Central California Coast coho salmon (<i>Oncorhynchus kisutch</i>)	FE, SE	Prefer 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.	Absent. Suitable habitat is absent from the project site. Further, the species is not expected to occur in Mount Diablo Creek along the project's southern border due to barriers to fish migration (such as a utility berm near Clyde that completely blocks lower Mount Diablo Creek downstream of the site, except during very high flows), and the absence of the species during surveys.
Central California Coast steelhead Distinct Population Segment (DPS) (<i>Oncorhynchus mykiss</i>)	FT	Cool streams with suitable spawning habitat (i.e., clean gravels) and conditions allowing migration between spawning and marine habitats.	Absent. Suitable habitat is absent from the project site. Further, the species is not expected to occur in Mount Diablo Creek along the project's southern border due to barriers to fish migration (such as a utility berm near Clyde that completely blocks lower Mount Diablo Creek downstream of the site, except during very high flows), and the absence of the species during surveys.
Central Valley steelhead DPS (<i>Oncorhynchus mykiss</i>)	FT	Spawns in cool, moderately fast flowing water with gravel bottom.	Absent. Suitable habitat is absent from the project site. Further, the species is not expected to occur in Mount Diablo Creek along the project's southern border due to barriers to fish migration (such as a utility berm near Clyde that completely blocks lower Mount Diablo Creek downstream of the site, except during very high flows), and the absence of the species during surveys.
Central Valley spring-run Chinook salmon Evolutionarily	FT, ST	Spawn and rear in main-stem Sacramento River and suitable	Absent. Suitable habitat is absent from the project site. Further, the species is not expected to occur in Mount Diablo Creek along the project's southern border due to

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TABLE 4.3-3 SPECIAL-STATUS ANIMAL SPECIES, THEIR STATUS, AND POTENTIAL OCCURRENCE ON THE PROJECT SITE

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Significant Unit (ESU) (<i>Oncorhynchus tshawytscha</i>)		perennial tributaries. Require cool year-round water temperatures and deep pools for over-summering habitat. Spawn in riffles with gravel and cobble substrate.	barriers to fish migration (such as a utility berm near Clyde that completely blocks lower Mount Diablo Creek downstream of the site, except during very high flows), and the absence of the species during surveys.
Winter-run Chinook salmon, Sacramento River ESU (<i>Oncorhynchus tshawytscha</i>)	FE, SE	Cool streams that reach the ocean and that have shallow, partly shaded pools and clear-water sandstone depression pools.	Absent. Suitable habitat is absent from the project site. Further, the species is not expected to occur in Mount Diablo Creek along the project’s southern border due to barriers to fish migration (such as a utility berm near Clyde that completely blocks lower Mount Diablo Creek downstream of the site, except during very high flows), and the absence of the species during surveys.
Longfin smelt (<i>Spirinchus thaleichthys</i>)	ST	Spawns in fresh water in the upper end of the San Francisco Bay; occurs year-round in the South Bay. When not spawning, most abundant where salinity generally ranges from 2 to 20 parts per thousand.	Absent. Suitable habitat is absent from the project site. Further, the species is not expected to occur in Mount Diablo Creek along the project’s southern border due to barriers to fish migration (such as a utility berm near Clyde that completely blocks lower Mount Diablo Creek downstream of the site, except during very high flows).
Delta smelt (<i>Hypomesus transpacificus</i>)	FT, SE	Estuarine systems in the Sacramento-San Joaquin Delta. Most spawning occurs in tidally influenced backwater sloughs and channel edgewater.	Absent. Suitable habitat is absent from the project site. Further, the species is not expected to occur in Mount Diablo Creek along the project’s southern border due to barriers to fish migration (such as a utility berm near Clyde that completely blocks lower Mount Diablo Creek downstream of the site, except during very high flows).
Tidewater goby (<i>Eucyclogobius newberryi</i>)	FE, CSSC	Brackish water habitats along coast, fairly still but not stagnant water, and high oxygen levels.	Absent. Aquatic habitats on the project site are entirely freshwater and are thus not suitable for this species.
California tiger salamander (<i>Ambystoma californiense</i>)	FT, SE	Vernal or temporary pools in annual grasslands or open woodlands.	Present. Tiger salamanders have been recorded breeding at the Cistern Pond, 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 on the project site (Figure 4.3-3). In addition, based on the results of a habitat assessment conducted by EDAW, ^b the project site includes 1,655 acres of high-quality tiger salamander upland habitat and 700 acres of medium-quality upland habitat.
California red-legged frog (<i>Rana draytonii</i>)	FT, CSSC	Streams, freshwater pools, and ponds with emergent or overhanging vegetation.	Present. Breeding by California red-legged frogs has been documented on the project site at the Cistern Pond, upper and lower Indian Springs, Rattlesnake Canyon Pond, 5AT-1 Marsh, and 5AT-2 Pond and Lower Marsh (Figure 4.3-3). In addition, approximately 2,396 acres of the project site (i.e., all but the developed portions) provide refugial, aquatic breeding and non-breeding, and/or dispersal habitat for the

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TABLE 4.3-3 SPECIAL-STATUS ANIMAL SPECIES, THEIR STATUS, AND POTENTIAL OCCURRENCE ON THE PROJECT SITE

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Alameda whipsnake (<i>Masticophis lateralis euryxanthus</i>)	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.	red-legged frog. As noted by Downard <i>et al.</i> , ^c the hydrology of the Cistern Pond and Indian Springs is linked and individual red-legged frogs likely disperse between these features, as evidenced by observations of red-legged frogs along dirt roads between Cistern Pond and Indian Springs. May be Present. A whipsnake reported from the Tidal Area of the CNWS during the 1998-1999 surveys ^c is the only report from the project 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 (<i>Thamnophis atratus</i>). ^d 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 Mount Diablo. ^e A habitat assessment performed by Ecology & Environment and Swaim Biological ^d 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.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	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.	Absent as Breeder. Although individuals may occasionally forage on the project site (a juvenile bald eagle was observed during spring surveys in 1982, ^f 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 (Mount Diablo Audubon Society, unpublished).
American peregrine falcon (<i>Falco peregrinus anatum</i>)	SE, SP	Nests on cliffs, and occasionally on buildings or bridges; forages for birds over many habitats.	Absent as Breeder. Forages on the project site infrequently and in low numbers during migration and winter. Single individuals have been recorded on the CNWS during five of the 11 years of the Central Contra Costa County Christmas Bird Count for which data were provided (Mount Diablo Audubon Society, unpublished). There is no suitable nesting habitat on the project site and the species is not expected to breed, occur frequently, or occur in large numbers on the site.
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	FE, SE	Typically, nests in willow and cottonwood- dominated riparian habitat.	Absent. The project site is outside the species' known historical and current breeding range. Although the species formerly may have bred north to Redding in the Central Valley, there is no evidence that it historically bred in the project vicinity, as southern

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TABLE 4.3-3 SPECIAL-STATUS ANIMAL SPECIES, THEIR STATUS, AND POTENTIAL OCCURRENCE ON THE PROJECT SITE

Name	*Status	Habitat	Potential for Occurrence on the Project Site
			<p>Santa Clara County was the northern limit of the species' historical breeding range west of the Central Valley. Riparian habitat on and immediately adjacent to the site is not suitable for the species due to its narrow extent, fragmented nature, and poorly developed understory (largely due to grazing).^d Protocol-level surveys conducted on the CNWS in spring and summer 2009 not detect the species, confirming that it is absent from the site.^{d,g}</p>
<p>Tricolored blackbird (<i>Agelaius tricolor</i>)</p>	ST	<p>Nests near fresh water in dense emergent vegetation, forages in a variety of open habitats.</p>	<p>Absent as Breeder. Approximately 100 tricolored blackbirds were observed by H.T. Harvey & Associates in a large flock of mixed blackbird species foraging in grassland on the project site in March 2009.^h However, the species is not expected to breed on the site due to a lack of suitably extensive emergent marsh habitat.</p>
<p>San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)</p>	FE, ST	<p>Flat or gently sloping grasslands on the margins of the San Joaquin Valley and adjacent valleys.</p>	<p>Absent. There are no records from the project site.ⁱ This species was reported in 1996 and 1997 at Black Diamond Mine Regional Preserve, approximately 3 miles southeast of the site.ⁱ The 1982 survey of the CNWS did not detect kit fox and concluded that their occurrence is highly improbable based on data available at the time. The kit fox was determined to be absent from the adjacent property at Bailey Road Estates.^j The ECCC HCP/NCCP noted that a recent survey of Contra Costa County and Alameda County within the known range of the San Joaquin kit fox using detection dogs found no evidence of recent occupancy.^k 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 of Contra Costa County, this species is determined to be absent from the site.</p>
<p>California Species of Special Concern</p>			
<p>Central Valley fall-run/late fall-run Chinook salmon (<i>Oncorhynchus tshawytscha</i>)</p>	CSSC	<p>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.</p>	<p>Absent. Suitable habitat is absent from the project site. Further, the species is not expected to occur in Mount Diablo Creek along the project's southern border due to barriers to fish migration (such as a utility berm near Clyde that completely blocks lower Mount Diablo Creek downstream of the site, except during very high flows), and the absence of the species during surveys.</p>
<p>Foothill yellow-legged frog (<i>Rana boylei</i>)</p>	CSSC, SC	<p>Partially shaded shallow streams and riffles with a rocky substrate and perennial flow.</p>	<p>Absent. No records from the project site or vicinity. According to the ECCC HCP/NCCP,^e all known extant occurrences of this species in the county are around Mount 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 reach of Mount Diablo Creek adjacent to the project site does not provide suitable breeding habitat due to the absence of flow for most of the year and absence of cobble substrate. Even if the species is present in the upper part of the Mount Diablo Creek watershed (which has not been demonstrated), it is unlikely to</p>

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TABLE 4.3-3 SPECIAL-STATUS ANIMAL SPECIES, THEIR STATUS, AND POTENTIAL OCCURRENCE ON THE PROJECT SITE

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Western pond turtle <i>(Actinemys marmorata)</i>	CSSC	Permanent or nearly permanent water in a variety of habitats, breeds in upland areas.	disperse through the urbanized reaches upstream to be able to reach the project site. Present. Within the project site, this species has been observed only at the Cistern Pond, ⁱ and only in small numbers. Small numbers may nest in uplands near the Cistern Pond, and possibly elsewhere on the site.
Silvery legless lizard <i>(Anniella pulchra pulchra)</i>	CSSC	Occurs in sandy or loose loamy soils in a variety of habitats	Absent. Suitable habitat is absent from the project site due to the absence of loose soils. The nearest known occurrence is approximately 12 miles east of the site, ^j 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. ^e
Coast horned lizard <i>(Phrynosoma coronatum frontale)</i>	CSSC	Sandy soils, usually in dry creek channels or coastal dunes.	May be Present. A single individual reported by Kuenzi and Morrison (1994 ^c) on the Inland Area of the CNWS represents the only record for the 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, within the project site.
Western spadefoot <i>(Spea hammondi)</i>	CSSC	Breeds in temporary rain pools; spends much of life in burrows or cracks in hard soil.	Absent. Project site is not within the species' known range and there are no records from the project site or vicinity, despite intensive surveys of the seasonal pools present on the Inland CNWS. Determined to be absent.
Northern harrier <i>(Circus cyaneus)</i>	CSSC	Nests in extensive marshes and wet fields, forages in marshes, grasslands, and ruderal habitats.	Absent as Breeder. Individual harriers have been frequently observed on the project site during general natural resource surveys. ^{f,c} 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 grasslands on the site do not provide enough protection from mammalian predators to provide high-quality nesting habitat for this species.
Burrowing owl <i>(Athene cunicularia)</i>	CSSC	Open grasslands and ruderal habitats with suitable burrows, usually those made by California ground squirrels.	Present. Burrowing owls have been observed in small numbers within grassland on the project site. An individual was observed in the southeastern portion of the project site in 1981–1982. ^f A burrowing owl was detected on the project site in the area southeast of Bailey Road during site visits in 2007 ^l but none were seen during general field surveys conducted throughout the site by H.T. Harvey & Associates between November 2008 and June 2009 ^h or during sporadic site visits from 2009 to the present. Short grassland with abundant ground squirrel burrows is present throughout much of the project site, 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.

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TABLE 4.3-3 SPECIAL-STATUS ANIMAL SPECIES, THEIR STATUS, AND POTENTIAL OCCURRENCE ON THE PROJECT SITE

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Short-eared owl (<i>Asio flammeus</i>)	CSSC (breeding)	Breeds in extensive marshes and moist grasslands, forages over wetlands, grasslands, and ruderal habitats.	Absent as Breeder. Short-eared owls have not been documented on the project site, ^c but the extensive grasslands provide suitable foraging habitat. If short-eared owls are present on the site, they are expected to occur only as infrequent nonbreeding foragers, as the grasslands do not provide enough protection from mammalian predators to provide suitable nesting habitat for this species.
Long-eared owl (<i>Asio otus</i>)	CSSC (breeding)	Nests in chimneys and in hollow snags in evergreen forests.	Absent as Breeder. A single individual recorded in a pine plantation during the Central Contra Costa County Christmas Bird Count in 2003 (Mount Diablo Audubon Society, unpublished) is the only record from the CNWS. 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 (<i>Chaetura vauxi</i>)	CSSC (nesting)	Nests in snags in coastal coniferous forests or, occasionally, in chimneys; forages aerially.	Absent as Breeder. Nonbreeding individuals forage over the project site, primarily during migration. However, suitable breeding habitat is absent, and the species does not breed here.
Olive-sided flycatcher (<i>Contopus cooperi</i>)	CSSC (breeding)	Nests in montane forests.	Absent as Breeder. Expected to occur on the project site only as an infrequent nonbreeding forager during migration. Not expected to breed, occur regularly, or occur in large numbers on the site, as suitable breeding habitat is not present.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	CSSC (nesting)	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 ⁿ and suitable breeding and foraging habitat is present.
Yellow warbler (<i>Setophaga petechia</i>)	CSSC (nesting)	Nests in riparian woodlands.	Absent as Breeder. The riparian habitat on the site is extremely limited and is of low quality for the yellow warbler due to understory degradation (likely resulting from grazing). This species has not been recorded breeding, or even summering, on the project site or the larger Inland CNWS. However, it is a common migrant, particularly in fall, and may occur on the project site during migration.
San Francisco common yellowthroat (<i>Geothlypis trichas sinuosa</i>)	CSSC	Nests in tall, emergent, herbaceous wetlands.	May be Present. Small numbers of San Francisco common yellowthroats nest in the project vicinity ^c and the species may nest and forage in freshwater marsh and in emergent vegetation and other wetland vegetation on the project site.
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	CSSC (breeding)	Breeds and forages in meadows, fallow fields, and pastures.	Absent as Breeder. May occur as a migrant in grasslands on the project site but this species is not known or expected to breed, occur regularly, or occur in large numbers on the project site.
Bryant's savannah sparrow (<i>Passerculus sandwichensis alaudinus</i>)	CSSC	Breeds and forages in meadows, fallow fields, pastures, and salt marshes.	Absent as Breeder. Savannah sparrows (of unknown subspecies) forage commonly in grasslands on the project site during the nonbreeding season, but they are not expected to breed here.

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TABLE 4.3-3 SPECIAL-STATUS ANIMAL SPECIES, THEIR STATUS, AND POTENTIAL OCCURRENCE ON THE PROJECT SITE

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Suisun song sparrow (<i>Melospiza melodia maxillaris</i>)	CSSC	Tidal salt and brackish marsh around Suisun Bay.	Absent. Song sparrows breed on the project site in riparian and freshwater marsh habitat, and Suisun song sparrows have been reported on the CNWS. However, due to the habitat associations of <i>maxillaris</i> (tidal salt and brackish marsh) vs. <i>gouldii</i> , 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 <i>gouldii</i> . Therefore, <i>maxillaris</i> is presumed absent from the project site.
American badger (<i>Taxidea taxus</i>)	CSSC	Typically associated with extensive grasslands containing small mammal prey, but will use other open and scrub habitats.	May be Present. Although several burrows in upland grasslands were identified that exhibited characteristics of typical badger burrows (e.g., elliptical) during the multi-season University of Arizona study, only a single badger was observed on the CNWS, a dead individual along Kinne Boulevard. ^c Downard et al. also cited a badger recorded by the Public Works Engineering Division (1980). Individuals may occasionally occur in grasslands 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 (<i>Neotoma fuscipes annectens</i>)	CSSC	Builds large stick nests in a variety of habitats, including riparian areas, oak woodlands, and scrub.	Absent. None of the intensive biological surveys of the CNWS, including the project site, has recorded the presence of this species, 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 (<i>Antrozous pallidus</i>)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees.	May be Present. During the multi-season University of Arizona studies, ^c bats were detected acoustically on the project site at a pond at the base of Rattlesnake Canyon, freshwater marsh SAT, and Indian Springs; however, the species of bat was not determined. Mist netting at Rattlesnake Canyon pond and Indian Springs captured no bats.
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	CSSC	Roosts in caves and mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats.	May be Present. Although this species has not been recorded on the project site, Downard et al. ^c and Tetra Tech, Inc. ⁿ concluded that it could occur here. Trees with cavities, and possibly old buildings or magazines, 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 (<i>Lasiurus blossevillii</i>)	CSSC	Roosts in foliage in forest or woodlands, especially in or near riparian habitat.	Absent as Breeder. Although this species has not been recorded on the project site, ^c concluded that it could occur here. This species is not known or expected to breed on or near the site, but it could roost on the site in small numbers during migration or in winter.

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TABLE 4.3-3 SPECIAL-STATUS ANIMAL SPECIES, THEIR STATUS, AND POTENTIAL OCCURRENCE ON THE PROJECT SITE

Name	*Status	Habitat	Potential for Occurrence on the Project Site
State Fully Protected Species			
Golden eagle (<i>Aquila chrysaetos</i>)	SP	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 north-central boundary of the site. ^{f,c} 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 District lands to the south of the site. Eagles from one or more of these nest sites regularly forage in grasslands on the site.
White-tailed kite (<i>Elanus leucurus</i>)	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	Present. Pine and eucalyptus plantations and oak woodlands on the project site provide suitable nesting habitat and the grasslands and other open habitats provide suitable foraging habitat throughout the site. The species has been recorded on the project site ^h and has been recorded breeding in the immediate vicinity. ^c

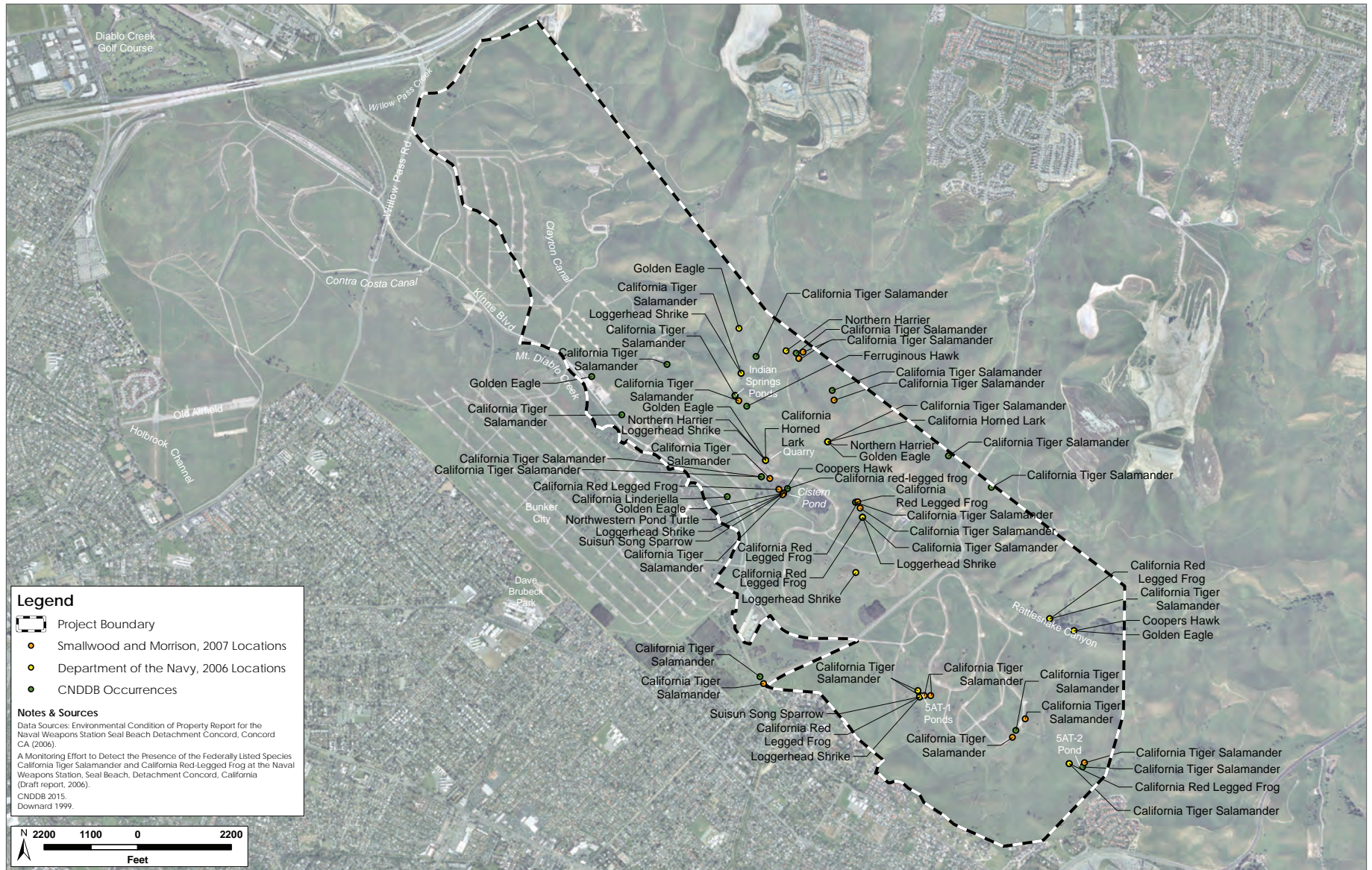
Notes:

*Status Codes:

FE = Federally listed Endangered CSSC = California Species of Special Concern
 FT = Federally listed Threatened SP = State Fully Protected Species
 SE = State listed Endangered
 ST = State listed Threatened

- a. EDAW, 2008, Listed Vernal Pool Branchiopod Wet-Season and Dry-Season Surveys, 90-Day Report. Naval Weapons Station Seal Beach Detachment. Concord, Contra Costa County, California.
- b. EDAW, 2008, Final California Tiger Salamander Upland Habitat Study Report. Naval Weapons Station Seal Beach Detachment. Concord, Contra Costa County, California.
- c. 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.
- d. Ecology & Environment, Inc. and Swaim Biological, 2009, Alameda Whipsnake Habitat Assessment in Support of the Environmental Impact Statement (EIS) for Disposal and Redevelopment of the Naval Weapons Station Seal Beach Detachment, Concord, California.
- e. Contra Costa County, 2006, Final East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan.
- f. Jones and Stokes Associates, Inc., 1982, A Natural Resource Survey: Naval Weapons Station, Concord, California, page 171.
- g. Ecology and Environment, Inc. and Foothill Associates, 2009, Least Bell's Vireo Survey Report – In Support of the Environmental Impact Statement (EIS) for Disposal and Redevelopment of the Former Naval Weapons Station Seal Beach Detachment. Concord, California. Prepared for NAVFAC Southwest, Environmental Contracts Core – BRAC Code R08B2. Prepared by: Ecology and Environment, Inc., and Foothill Associates.
- h. City of Concord, 2010, Concord Community Reuse Plan Final Environmental Impact Report.
- i. California Natural Diversity Data Base, 2018, Rarefind. California Department of Fish and Game.
- j. Mills Associates, 2002, Chapter 4.8 Biological Resources. Bailey Road Estates Project Final Environmental Impact Report.
- k. Smith, D.A., K. Ralls, B.L. Cypher, H.O. Clark, Jr., P.A. Kelly, D.F. Williams, and J.E. Maldonado, 2006, Relative abundance of endangered San Joaquin kit foxes (*Vulpes macrotis mutica*) based on scat-detection dog surveys. Southwestern Naturalist 51: pages 210 to 219.
- l. CH2M HILL, 2007, Technical Memorandum: Summary of Aquatic Field Reconnaissance. Survey at the CNWS Inland Unit on February 15, 2007.
- m. Department of the Navy, 2006, Final Environmental Condition of Property Report for the Naval Weapons Station Seal Beach Detachment Concord, Concord, California. Base Realignment and Closure Program Management Office, San Diego, California.
- n. Tetra Tech, Inc., 2002, Integrated Natural Resources Management Plan and Environmental Assessment. Naval Weapons Station Seal Beach, Detachment Concord, California.

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Source: H.T. Harvey & Associates, 2018.

Figure 4.3-3
 Representative Special-Status Species Occurrences

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Thirteen special-status wildlife species are known or expected to occur within the habitats present on the project site and could potentially breed or roost there. These are the California tiger salamander, California red-legged frog, Alameda whipsnake, western pond turtle, coast horned-lizard (*Phrynosoma coronatum frontale*), burrowing owl, golden eagle, white-tailed kite, loggerhead shrike, San Francisco common yellowthroat, American badger (*Taxidea taxus*), pallid bat, and Townsend's big-eared bat (*Corynorhinus townsendii*).

Sensitive and Regulated Plant Communities and Habitats

The CDFW ranks certain rare or threatened plant communities, such as wetlands, meadows, and riparian forest and scrub, as "threatened" or "very threatened." These communities are tracked in the CNDDDB. Impacts on CDFW sensitive plant communities, or any such community identified in local or regional plans, policies, and regulations, must be considered and evaluated under CEQA. Furthermore, wetland and riparian habitats are also afforded protection under applicable federal, State, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS. Sensitive and regulated plant communities and habitat include the following:

- **Natural Communities of Special Concern.** Based on a query of Rarefind³⁸ for sensitive habitats in the *Vine Hill, Walnut Creek, and Clayton, California* USGS 7.5-minute quadrangles in which the project site occurs, no sensitive habitats were identified on the project site.
- **Waters of the U.S./State.** As discussed under *Regulatory Setting* above, a delineation of wetlands and other waters on the project site that are under the jurisdiction of the USACE was completed as part of the Concord Reuse Project Area Plan CEQA review process³⁹ and verified by the USACE in 2011.⁴⁰ No wetlands were identified that would likely be considered waters of the State but not waters of the U.S. (e.g., isolated wetlands).
- **CDFW Stream/Riparian Habitat.** The beds and banks of the unnamed drainages on the project site, as well as associated riparian habitat, are potentially subject to regulation by the CDFW per Section 1602 of the Fish and Game Code. Any work within the bed or banks of the unnamed drainages, or within adjacent riparian habitat, would require Notification of Streambed Alteration and, if necessary, a Streambed Alteration Agreement from the CDFW.

4.3.1.4 INVASIVE SPECIES

Since the exploration of California by Europeans began, people have brought non-native plants and animals into the project area, either accidentally (e.g., as stowaways in cargo shipments) or intentionally (e.g., as pets or for food, ornament, or sport), and many of these species have been introduced into the wild. Introduced species that cause harm and, once established, spread quickly are often called "invasive" species. Invasive species can threaten the diversity and abundance of native species through predation,

³⁸ California Natural Diversity Data Base, 2018, Rarefind. California Department of Fish and Game.

³⁹ H.T. Harvey & Associates, 2011, Concord Community Reuse Plan Concord, California Preliminary Delineation of Wetlands and Other Waters.

⁴⁰ U.S. Army Corps of Engineers, 2011, Jurisdictional Delineation for the Concord Community Reuse Plan Site 8.

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competition for resources, transmission of disease, parasitism, and physical or chemical alteration of the habitat.

A floristic survey of the Inland Area of the CNWS by Vollmar Consulting⁴¹ identified 75 non-native plant species listed on the California Invasive Plant Inventory.⁴² Many of these species are present on the project site, including medusahead (*Taeniatherum caput-medusae*), peppergrass (*Lepidium latifolium*), yellow-star thistle (*Centaurea solstitialis*), and fennel (*Foeniculum vulgare*), which have been rated as having “high” ecological impact and can invade into additional areas.

Introduced animal species are also present on the project site. A few of the more common introduced/invasive wildlife species present in, or with a high potential to be introduced to, the project site are discussed in more detail below.

The American bullfrog (*Lithobates catesbeianus*) has been accidentally and intentionally introduced (e.g., for food in the 1920s by commercial frog farmers) throughout the world and is now established throughout most of California,⁴³ including the project site.^{44,45} Compared to native frogs, the American bullfrog is larger in size, highly mobile, and have generalized eating habits (their prey includes native amphibians as well as other aquatic and riparian vertebrates).⁴⁶

Non-native species such as red foxes (*Vulpes vulpes*) and Norway rats, which have been documented on the CNWS,⁴⁷ are significant predators of native birds. For example, Norway rats have long been known to be effective predators of California Ridgway’s rail (*Rallus obsoletus obsoletus*) nests,^{48,49,50} and according to Harvey and Foerster et al., predators, especially rats, have accounted for California Ridgway’s rail nest losses of 24 to 29 percent in certain South Bay marshes.

⁴¹ Vollmar Consulting, 2008, 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area.

⁴² California Invasive Plant Council (Cal-IPC), 2018, Cal-IPC Inventory Database, <http://www.cal-ipc.org/paf/>, accessed on March 2018.

⁴³ California Herps, 2018, *Lithobates catesbeianus* – American bullfrog. <http://www.californiaherps.com/frogs/pages/r.catesbeiana.html>, accessed on March 25, 2015.

⁴⁴ Jones and Stokes Associates, Inc., 1982, A Natural Resource Survey: Naval Weapons Station, Concord, California, page 171.

⁴⁵ 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.

⁴⁶ Graber, D.M., 1996, Status of terrestrial vertebrates. In Sierra Nevada Ecosystem Project: Final report to Congress. Chapter 25. Davis, California: Centers for Water and Wildland Resources.

⁴⁷ 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.

⁴⁸ D.S. DeGroot, 1927, The California clapper rail: It’s nesting habitats, enemies, and habitat. Condor. 29: pages 259 to 270.

⁴⁹ Harvey, T.E., 1980, A breeding season survey of the California clapper rail (*Rallus longirostris obsoletus*) in South San Francisco Bay, California. Prepared for the U.S. Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge.

⁵⁰ Foerster, K.S, J.E. Takekawa, and J.D. Albertson, 1990, Breeding density, nesting habitat, and predators of the California Clapper Rail. Fremont, California: Unpubl. Rep. No. Refuge-116400-90-1, San Francisco Bay Wildlife Refuge. Newark, California, page 21 *et seq.*

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4.3.2 STANDARDS OF SIGNIFICANCE

Based on CEQA Guidelines Appendix G, the proposed project would result in a significant impact on biological resources if it would:

1. 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 California Department of Fish and Game or U.S. Fish and Wildlife Service.
2. 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 California Department of Fish and Game or US Fish and Wildlife Service.
3. Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.3.3 IMPACT DISCUSSION

BIO-1	The project could have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
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Special-Status Plant Species

Although no special-status plant species have been identified on the project site, there is potential for one species with a California rare plant ranking of Rank 1B (rare, threatened, or endangered in California and elsewhere), big tarplant, to be present on the site. Conservation of CRPR 1B species is important because their populations contribute to preserving the genetic resources for the species and ensuring persistence of rare species in the county and state. Thus, the proposed Plan, which has been prepared consistent with the Long-Term Management Plan (LTMP), includes a management prescription (identified as BIO 25)⁵¹ to monitor and document the presence and relative abundance of special-status species, including big

⁵¹ Concord Hills Regional Park Land Use Plan, 2019, Table 4-1

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tarplant, within the project site over time and inform management to aid this species. In addition, the proposed Plan includes management prescriptions BIO 17 through BIO 20 to minimize the spread of existing nonnative invasive plants and prevent the unintentional introduction and spread of invasive plant species that can degrade the value of habitat for native species (see also the discussion under Impact BIO-2).

Nevertheless, construction and operation of proposed Regional Park facilities would impact up to 16.5 acres of California annual grassland, and additional grassland would be impacted during the City's construction of amphibian breeding ponds in the Regional Park (as discussed in Condition 5, on page 27, of the BO); this grassland provides suitable habitat for big tarplant. In addition, if this species is present, future development, operation, and maintenance activities may result in impacts on individuals of this species. Potential direct impacts include loss or degradation of suitable habitat (e.g., as a result of grading or alteration of surface drainage patterns resulting from movement of heavy equipment or soil disturbance); loss of individual plants and populations as a result of mechanical or physical removal of vegetation in the work site; and damage to special-status plants as a result of crushing by equipment, trampling by construction crews or recreationists, and compaction of soil, which could result in damage to plant roots. These activities could result in death, altered growth, or reduced seed set through physically breaking, crushing, wilting, or uprooting plants. Potential indirect impacts include increased mobilization of dust onto plants, which can affect their photosynthesis and respiration. Due to the regional rarity of these special-status species, such impacts would be *significant*.

Significance without Mitigation: *Significant*.

Impact BIO-1.1: Construction and operation of Regional Park facilities would result in direct and indirect impacts to up to 16.5 acres of California annual grassland, which provides suitable habitat for special-status plant species. This would be a significant impact.

Mitigation Measure BIO-1.1a: Pre-Activity Survey. A focused survey for big tarplant will be conducted within suitable habitat in areas of the project site that may experience ground disturbing activities. The surveys will be conducted prior to initial ground disturbance and during the appropriate blooming period (late summer and early fall). The survey area will include all suitable habitat that may be impacted as well as a 50-foot buffer. Surveys are to be conducted in a year with near-average or above-average precipitation. The purpose of the surveys will be to assess the presence or absence of big tarplant. If this species is not found in the survey area, then no further mitigation will be warranted. If big tarplant is found in the impact area, then Mitigation Measures BIO-1.1b and BIO-1.1c will be implemented.

Mitigation Measure BIO-1.1b: Avoidance Buffer. Populations of big tarplant shall be avoided to the extent feasible. Avoided populations shall be protected by establishing and observing a 50-foot buffer between plant populations and the impact area. All such populations located in the impact area, and their associated designated avoidance areas, will be clearly depicted on any construction plans. In addition, prior to initial ground disturbance or vegetation removal, the limits of the identified buffer around special-status plants to be avoided will be flagged or fenced. The flagging will be maintained intact and in good condition throughout project-related construction activities. If complete avoidance is not feasible, Mitigation Measure 1.1c will be implemented.

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Mitigation Measure BIO-1.1c: Implementation of Plan Management Prescriptions BIO 8 through BIO 16. The destruction of populations of big tarplant on the project site shall be mitigated by specifically managing portions of the Regional Park's open grasslands within designated Natural Units for this 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 on the project site. A review of the regional occurrences of this 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 Natural Units within the project boundaries. As such, specific habitat management measures (i.e., Plan management prescriptions BIO 8 through BIO 16 identified in Chapter 4 of the proposed Land Use Plan) to enhance the open space for the California red-legged frog, California tiger salamander, and burrowing owl, will also benefit the germination, growth, and long-term viability of populations of the big tarplant, if it is present.

Significance with Mitigation: *Less than significant.*

Special-Status Animal Species

California Red-Legged Frog and California Tiger Salamander

As described in Chapter 3, Project Description, the proposed Regional Park is the designated conservation area for the Concord Project Reuse Area Plan. As such, it provides compensatory mitigation for impacts on three federally- and State-listed species (i.e., the California red-legged frog, California tiger salamander, and Alameda whipsnake) resulting from development of the non-conservation areas of the Concord Reuse Project Area Plan, and it is required to implement all applicable avoidance and minimization measures contained in the BO.

The California red-legged frog, federally listed as threatened and a California species of special concern, occurs on the project site primarily in ponds and freshwater marshes, which provide suitable breeding habitat. Extensive surveys of the project site have documented California red-legged frog breeding at the Cistern Pond, upper and lower Indian Springs, Rattlesnake Canyon Pond, 5AT-1 Marsh, and 5AT-2 Pond and Lower Marsh. However, California red-legged frogs could occur virtually anywhere on the project site, especially during wet-season dispersal. The California tiger salamander, federally and State listed as threatened, is also known to breed in a number of locations on 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. In addition, California tiger salamanders use upland habitats surrounding their breeding sites for aestivation and for dispersal between breeding sites and aestivation areas. The California red-legged frog and California tiger salamander are assessed together because project-related impacts on these species are expected to be similar.

The majority of California red-legged frog and California tiger salamander breeding habitat on the project site would be located within Natural Units, which would be planned and managed to preserve and enhance natural habitat with only lower intensity recreational uses and facilities (primarily trails) permitted. In addition, approximately 620 acres within the Natural Units, including the majority of known

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California red-legged frog and California tiger salamander breeding sites, would be distinguished as Special Protection Features (SPFs) within which public access would be restricted. Further, the proposed Plan includes siting and design guidelines for the protection of biological resources, including the following measures relevant to the California red-legged frog and California tiger salamander:

- All new trails, roads, and all other recreational facilities will maintain a buffer of at least 500 feet from California red-legged frog and California tiger salamander breeding habitat.
- Group picnic sites and camping areas will be sited over 1,000 feet from any California red-legged frog or California tiger salamander breeding habitat.
- Existing roads used for regional park access should maintain a buffer of at least 500 feet from California red-legged frog and California tiger salamander breeding habitat, wherever possible. Where buffers are not feasible, fencing, signage, reduced speed limit, and other management barriers will be used to restrict trail users to the designated trails.

Thus, development of proposed Regional Park facilities would not result in the loss or disturbance of breeding habitat for the California red-legged frog or California tiger salamander.

Proposed construction (including the City's construction of amphibian breeding ponds in the Regional Park, as discussed in Condition 5, on page 27, of the BO) would result in the loss of suitable upland dispersal and aestivation habitat for the California red-legged frog and California tiger salamander. However, as required by the BO and described in the proposed Plan, to offset the loss of a maximum of approximately 16.5 acres of presently undeveloped land (i.e., California annual grassland), including approximately 6.2 acres of disturbance around the proposed visitor center and other park facilities, and approximately 6.1 miles (9.6 acres) of new trail connections and 0.3-mile (0.7-acre) of new roads, the District would remove 10.3 miles of rail lines in biologically sensitive areas as shown on Figure 3-3 of the Plan. Rail ties and associated rock would also be removed along a 5.6-mile portion of these former rail lines, which would be converted to trail. Further, the District would restore up to 5.7 miles of unutilized unpaved roads within SPFs to deter public use of areas closed to recreation. The restored habitat would be managed to benefit listed species, including the California red-legged frog and California tiger salamander.

Regional Park development and maintenance activities in upland areas could also result in injury or mortality of any individual California red-legged frogs or California tiger salamanders within work areas due to vehicle traffic and foot traffic or as a result of predation from domestic animals. In addition, individuals may be crushed in their refugia by the passage of heavy equipment or trapped and suffocated. Petrochemicals, hydraulic fluids, and solvents that were spilled or leaked from construction vehicles or equipment might also kill individuals of this species. However, as required by the BO, the District would implement all relevant construction-related Avoidance and Minimization Measures (AMMs) (see Appendix C) to avoid and minimize impacts on the California red-legged frog and California tiger salamander. These measures include, but are not limited to, implementation of a Storm Water Pollution Prevention Plan (SWPPP), restoration of temporary impact areas, implementation of a Worker Environmental Awareness Program, preparation of a California red-legged frog and California tiger salamander relocation plan, observance of upland and aquatic work windows, observance of a 20-mile-per-hour (mph) speed limit in construction areas, installation of wildlife exclusion fencing around

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construction areas, monitoring of exclusion fencing, preconstruction surveys for California red-legged frogs and California tiger salamanders, construction monitoring, and implementation of measures to minimize effects of lighting.

Further, per the proposed Plan, the District will implement a series of management prescriptions (BIO 1 through BIO 25) focused on the management and monitoring of biological resources, including the California red-legged frog and California tiger salamander. These tasks include, but are not limited to: (1) monitoring and managing the Regional Park's potential breeding ponds for the benefit of the California red-legged frog and California tiger salamander; (2) managing, enhancing, and monitoring upland habitat for the benefit of the California red-legged frog and California tiger salamander; (3) maintaining amphibian breeding ponds free from fish and minimizing bullfrog and crayfish numbers; (4) maintaining California red-legged frog and California tiger salamander presence, relative abundance, and distribution within the Regional Park; and (5) recording a restrictive covenant for the preservation of conservation values (including endangered species habitat) within the Regional Park Area.

Thus, with implementation of the proposed Plan's siting and design guidelines and management prescriptions, as well as the AMMs prescribed in the BO, impacts on the California red-legged frog and California tiger salamander and their habitat as a result of proposed Regional Park development, operation, and maintenance activities would not rise to the CEQA standard of having a substantial adverse effect. The impact would be *less than significant*.

Significance without Mitigation: *Less than significant*.

Western Pond Turtle

The western pond turtle, a California species of special concern, has been observed in small numbers at the Cistern Pond but has not been documented elsewhere on the project site. Western pond turtles may nest in upland habitats around the Cistern Pond and possibly around other ponds (both temporary and perennial) on the site. In addition, western pond turtles are expected to disperse to some extent between the project site and off-site aquatic habitats, likely traveling along Mount Diablo Creek to the west of the project site, but possibly also along the Contra Costa and Clayton Canals.

The proposed project does not include development of any recreational facilities near the Cistern Pond. Rather the Cistern Pond would be located within an approximately 35-acre SPF (Cistern Pond SPF) to which public access would be restricted. Similarly, no development would occur within other suitable aquatic (i.e., pond or seasonal wetland) habitat on the site. Thus, development of Regional Park facilities would not result in the loss or disturbance of aquatic habitat for the western pond turtle. The implementation of the proposed Plan's management prescriptions for the California red-legged frog and California tiger salamander (i.e., BIO 1 through BIO 25) would also be consistent with the maintenance of suitable aquatic habitat for the western pond turtle by ensuring that ponds within the project area continue to provide appropriate aquatic habitat. Further, implementation of construction-related AMMs for the California red-legged frog and California tiger salamander, per the requirements of the BO, would avoid and minimize potential indirect impacts on western pond turtles and their habitat (e.g., due to water quality effects resulting from unregulated discharge of contaminants or sediment during construction activities and increased nighttime lighting).

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Nevertheless, development and maintenance of proposed Regional Park facilities in upland areas may result in the disturbance or loss of nesting habitat. Western pond turtles may lay eggs 0.25-mile or more from aquatic habitats;⁵² thus, development or disturbance of upland habitats within 0.5-mile of the Cistern Pond, and possibly in other areas, may affect turtle nesting habitat. However, because of the widespread nature of suitable pond turtle nesting habitat on the project site, the limited acreage of undeveloped habitat that would be lost due to project implementation (i.e., 16.5 acres), the maintenance of the Cistern Pond as an SPF, and the passive nature of recreational activities on the site, impacts on potential nesting habitat for this species would not be substantial.

Implementation of the proposed project may result in the harm or death of individual turtles or their eggs due to crushing by vehicle or foot traffic, as a result of desiccation or burying (e.g., during grading), or as a result of disturbance or predation from domestic animals and humans. These potential impacts pertain not only to development of recreational and interpretive facilities but also to operation and maintenance of such facilities. However, 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,⁵³ and loss of individual turtles would constitute a significant impact. Further, western pond turtles occasionally nest communally. 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.

Significance without Mitigation: *Significant.*

Impact BIO-1.2: Implementation of the proposed Land Use Plan could result in harm to or loss of western pond turtles or their eggs. This would be a significant impact.

Mitigation Measure BIO-1.2: Preconstruction Surveys. The East Bay Regional Park District shall require a qualified biologist to conduct surveys for communal/traditional western pond turtle nesting areas prior to initiating any ground-disturbing activities within 0.25-mile of potential western pond turtle aquatic habitat. If a communal/traditional nesting area is detected, the East Bay Regional Park District shall install temporary exclusion fencing around any construction areas within 0.25-mile of the aquatic habitat; have a qualified biologist conduct a preconstruction survey for individual turtles within 0.25-mile of the communal/traditional nesting area, and relocate any turtles detected during the survey or during construction to suitable habitat outside of the active construction areas; and have a qualified biologist conduct a Worker Environmental Awareness Program that includes discussion of the western pond turtle.

Significance with Mitigation: *Less than significant.*

⁵² Jennings, M.R., and M.P. Hayes, 1994, Amphibian and reptile species of special concern in California. California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California.

⁵³ Jennings, M.R., and M.P. Hayes, 1994, Amphibian and reptile species of special concern in California. California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California.

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Alameda Whipsnake and California Horned Lizard

The Alameda whipsnake, federally and State listed as threatened, has not been recorded on the project site, but the small patches of sage scrub in upper Rattlesnake Canyon and grassland with rock outcrops in the areas southeast and just northwest of Bailey Road were determined to provide potential habitat. The coast horned lizard, a California species of special concern, is typically associated with loose, often sandy soils which are completely absent from the project site, and the species has been recorded only once on the project site. The precise location of this record is unknown, but the most likely area of occurrence is in the area southeast of Bailey Road. The Alameda whipsnake and coast horned lizard are assessed together because project-related impacts on these species are expected to be similar.

Regional Park development activities that would occur within suitable habitat for the Alameda whipsnake and coast horned lizard would be so limited in extent, especially in the area southeast of Bailey Road where scrub or rock outcrops provide the highest potential to support these species, that impacts on suitable habitat for these species would be very limited. In addition, approximately 400 acres of habitat southeast of Bailey Road within Rattlesnake Canyon would be included within an SPF (Rattlesnake Canyon SPF), within which public access would be restricted and no development would occur. Further, the implementation of the proposed Plan management prescriptions for the California red-legged frog and California tiger salamander (i.e., BIO 1 through BIO 25) would be consistent with the maintenance of suitable habitat for the Alameda whipsnake by maintaining suitable upland habitat conditions for all of these species. Thus, the project is not expected to result in a substantial impact on habitat for the Alameda whipsnake or coast horned lizard.

If either species is present on the project site, there is at least a potential for individuals to be injured or killed during Regional Park development, operation, and maintenance activities due to vehicle traffic, foot traffic, or disturbance by domestic animals. Based on the lack of confirmed records of the Alameda 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. Nevertheless, if these species are present, loss of individuals would be potentially significant.

The District would implement the relevant construction-related AMMs included in the BO (see Appendix C) to avoid and minimize impacts on individual Alameda whipsnakes. These measures include, but are not limited to, implementation of a Worker Environmental Awareness Program, preparation of an Alameda whipsnake relocation plan, preconstruction surveys for Alameda whipsnakes, and construction monitoring. Implementation of proposed Plan siting and design guidelines and creation of the Rattlesnake Canyon SPF would also avoid and minimize the potential for proposed project operations and maintenance activities to result in impacts on individual Alameda whipsnakes and coast horned lizards by restricting public access to areas of habitat most likely to support these species. Further, the District would install informational signage near larger rock outcroppings to educate visitors regarding potential Alameda whipsnake habitat.

Thus, with implementation of the proposed Plan's siting and design guidelines and management prescriptions, as well as the AMMs prescribed in the BO, impacts on the Alameda whipsnake, coast horned lizard, and their habitat as a result of project construction, operation, and maintenance activities

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would not rise to the CEQA standard of having a substantial adverse effect. The impact would be *less than significant*.

Significance without Mitigation: *Less than significant*.

Golden Eagle

The golden eagle, a fully protected species, is known to occur on the project site, and a pair has nested regularly in a eucalyptus grove located along the site's north-central boundary).^{54,55} Additionally, several nesting pairs of golden eagles occur on District lands to the south of the project site. The pair of eagles nesting on the project site, and possibly those nesting nearby, also forage in grasslands on the site.

Regional Park development would result in the loss of approximately 16.5 acres of habitat (i.e., California annual grassland) that are currently used by foraging golden eagles. The City's construction of amphibian breeding ponds in the Regional Park (as discussed in Condition 5, on page 27, of the BO) would result in additional impacts, mostly temporary, to grassland. Because of the abundance of such habitats in the region, and because the project would implement a grazing management approach that would benefit species, including golden eagles, which rely on California ground squirrels as prey, impacts on foraging habitat are not considered substantial. Further, the proposed project would not impact the known eagle nest tree. This tree would be included within an approximately 185-acre SPF (Hilltop Ponds SPF), within which public access would be restricted and no development or other construction activities would occur. All proposed trails would be located at least 0.3 mile from the eagles' nesting area, and other recreational features (such as overlooks and picnic areas) would be located 0.4 mile or more from the nesting areas. Although some of these passive recreation facilities would be within the viewshed of the nesting area, nesting eagles are not expected to be disturbed by passive recreation due to the distance between these facilities and the nesting area, coupled with the eagles' habituation to existing cattle ranching and remediation activities that currently occur in the same areas. However, if new construction activities occur within 0.5 mile of an active eagle nest during the breeding season, it is possible that the eagles could be disturbed. In addition, if the eagles move to a nest site closer to proposed recreational facilities (i.e., if eagles move prior to the construction of a proposed facility), then it is possible that construction and/or use of that facility could disturb nesting eagles. Therefore, there is some potential for the project to disturb the nesting eagles to the point of abandonment of the nest, and possibly eggs and chicks, or to result in reduced reproductive success due to construction or recreation-related disturbance. Due to the relatively low size of regional golden eagle populations, the loss or disturbance of an active nest would be considered *significant*.

Significance without Mitigation: *Significant*.

⁵⁴ Jones and Stokes Associates, Inc., 1982, A Natural Resource Survey: Naval Weapons Station, Concord, California, page 171.

⁵⁵ 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.

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Impact BIO-1.3: Regional Park development and recreation could result in the disturbance of an active golden eagle nest. This would be a significant impact.

Mitigation Measure BIO-1.3a: Pre-Activity Survey. Within 15 days prior to the initiation of ground-disturbing activities during the breeding season (February 1 to August 31), a qualified biologist shall conduct a preconstruction survey for nesting golden eagles within 0.5-mile of the limits of work areas, including access and staging areas.

Mitigation Measure BIO-1.3b: Nest Buffers. If nesting eagles are present, a buffer free from new construction disturbance shall be established within a 0.5-mile radius of the nest. No new project-related construction 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) shall be undertaken within the buffer. In some cases (e.g., if the activity 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 be set by a qualified biologist in consultation with the CDFW and USFWS. In such a case, the biologist shall monitor the behavior of the nesting birds during the first full day of construction activity immediately surrounding the buffer. The biologist 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 shall stop and the CDFW and USFWS shall be consulted to refine the buffer determination. If the birds continue their normal activities, the biologist shall inspect the nest site every 1 to 2 days (the frequency determined in consultation with the CDFW 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 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 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 buffer area, the biologist must confirm that the nest is no longer active.

Mitigation Measure BIO-1.3c: Recreational Facilities Siting and Design. If, prior to the establishment of trails or other recreational features on the project site, the eagles move to a new nest tree and breed successfully there, no new trails or other recreational features that can be seen by eagles on the nest will be established within 0.25-mile of the nest tree unless the new trail and all existing trails and other recreational features within this distance are closed during the breeding season when the nest is active. However, any 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.

Significance with Mitigation: *Less than significant.*

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Western Burrowing Owl

Short grassland with abundant ground squirrel burrows is present throughout much of the project site, providing apparently high-quality habitat for the burrowing owl, a California species of special concern. Still, burrowing owls have only been observed in small numbers on the project site, and they have primarily been observed during the nonbreeding season. Thus, if the species breeds on the site, it does so only in very low numbers.

The proposed project would impact up to 16.5 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. 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. Thus, the loss of 16.5 acres of grassland habitat would not result in a substantial impact on the burrowing owl's regional population. Further, the project would implement a grazing management approach (Plan management prescriptions BIO 8 through BIO 16) on the remaining grassland (approximately 2,228 acres) on the site that would emphasize maintenance of habitat values for burrowing mammals through the reduction of accumulated dense, annual grass biomass. Burrowing owls are dependent upon fossorial mammals for nesting and roosting burrows. Thus, management of the grasslands to support ground squirrel populations would also improve the quality of the habitat for the burrowing owl.

Potential impacts on burrowing owls due to Regional Park operations include increased disturbance by recreational users, including domestic animals (e.g., dogs). However, passive recreation with limited infrastructure for visitors, such as proposed by the project and detailed in the proposed Plan, can be consistent with management of burrowing owl populations. As described above, the District would implement a grazing management approach that would improve the quality of the habitat for the burrowing owl and would implement management prescriptions focused on monitoring the presence of, and employing adaptive management to maintain sensitive species, including the burrowing owl, in the Regional Park. In addition, disturbance of burrowing owls would be minimized through the restriction of recreational activities to Recreation/Staging Units and trails and roads in Natural Units. No off-trail access would be allowed. Further, there would be no areas of the Regional Park where off-leash domestic animals (e.g., dogs) would be allowed.

Regional Park development and maintenance activities in occupied burrowing owl habitat could 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 could be lost by such direct disturbance, or by abandonment of burrows by adults that are disturbed by construction-related activities. Due to the precipitous declines of San Francisco Bay Area burrowing owl populations in recent decades, loss of burrowing owls resulting from project construction or maintenance activities would be *significant*.

Significance without Mitigation: *Significant*.

Impact BIO-1.4: Regional Park development and maintenance activities in occupied burrowing owl habitat could result in loss of burrowing owls. This would be a significant impact.

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Mitigation Measure BIO-1.4a: Pre-Activity Survey. Pre-activity surveys for burrowing owls shall be performed by a qualified biologist no more than 15 days before initial ground disturbance activities within a development area. 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-activity survey by a qualified biologist must be conducted no more than 15 days prior to the commencement of grading, to confirm the absence of burrowing owls. This survey shall be conducted in all areas on and within 250 feet of the impact area and shall be conducted in accordance with the California Burrowing Owl Consortium guidelines.⁵⁶

Mitigation Measure BIO-1.4b: Buffers. For burrowing owls present during the nonbreeding season (generally September 1 to January 31), a 150-foot buffer zone 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 (based on the determination of a qualified biologist) shall be maintained. If an adequate buffer (as determined by a qualified biologist) cannot be maintained, the birds 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, 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 as confirmed by a qualified biologist. This protected buffer area shall remain in effect until August 31, or based upon monitoring evidence, until the young owls are foraging independently or a qualified biologist has determined that the nest is no longer active. In some cases (e.g., if an activity is not visible from the nest site), it is possible that a breeding-season buffer less than 250 feet would be adequate to avoid disturbance of nesting burrowing owls, but such a variance would be set by a qualified biologist in consultation with the CDFW. In such a case, the biologist shall monitor the behavior of the nesting birds during the first full day of construction activity immediately surrounding the buffer. The biologist 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 shall stop and the CDFW shall be consulted to refine the buffer determination. If the birds continue their normal activities, the biologist shall inspect the nest site every 1 to 2 days (the frequency determined in consultation with the CDFW) 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.

Mitigation Measure BIO-1.4c: Passive Relocation. 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 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 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 shall then be removed and the burrows backfilled immediately prior to the initiation of grading.

⁵⁶ California Burrowing Owl Consortium, 1993, Burrowing Owl Survey Protocol and Mitigation Guidelines, April.

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Significance with Mitigation: *Less than significant.*

White-Tailed Kite

The white-tailed kite, a California fully protected species, nests 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 two to three pairs nest in the project area.

Regional Park development would result in the loss of few, if any, potential nest trees for white-tailed kites, but would result in the loss of approximately 16.5 acres of suitable foraging habitat (i.e., California annual grassland). Because of the abundance of such habitats in the region, and because the project would implement a grazing management approach that would benefit species, including white-tailed kites, which prey on small burrowing mammals, project impacts on white-tailed kite foraging and nesting habitat are not considered substantial.

If Regional Park development activities occur during the nesting season (roughly February 1 to August 31), construction could reduce the productivity of nesting white-tailed kites in several ways. Nests with eggs or young could be destroyed directly due to removal of the tree on which the birds are nesting. Although adult kites 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. Even passive recreational activities in open space areas could result in disturbance of nesting pairs of this 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*.

Significance without Mitigation: *Significant.*

Impact BIO-1.5: Regional Park construction activities during nesting season could reduce the productivity of nesting white-tailed kites. This would be a significant impact.

Mitigation Measure BIO-1.5a: Avoidance. To the extent feasible, construction and tree removal activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts on nesting white-tailed kites will be avoided. The nesting season in Contra Costa County typically extends from February 1 through August 31.

Mitigation Measure BIO-1.5b: Pre-Activity Surveys. If it is not possible to schedule construction and vegetation removal activities between September 1 and January 31, then pre-activity surveys for nesting white-tailed kites shall be conducted by a qualified biologist to ensure that no nests will be disturbed during project implementation. The survey shall be conducted by a qualified biologist no more than seven days prior to the initiation of construction activities. During this survey, the biologist shall inspect all trees and other potential nesting habitats in the impact area plus a 300-foot buffer for nests. If removal of potential nesting substrate or project grading will occur during more than one

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nesting season, or in different parts of the site in phases over the course of a single season, then additional pre-activity surveys shall be performed within seven days prior to initiation of work in any particular area. If the pre-activity survey does not identify the presence of any active nests of white-tailed kites on or within 250 feet of the site, construction activities may proceed. If active nests are identified within 250 feet of the activity area, Mitigation Measure BIO-1.7c will be implemented.

Mitigation Measure BIO-1.5c: Nest Buffers. If white-tailed kite 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 shall establish an appropriate construction-free buffer around each nest in consultation with the CDFW. Generally, a buffer of 300 feet for white-tailed kites is adequate to avoid causing nest abandonment. The buffer shall remain in place until the qualified biologist has confirmed that the nest is no longer active.

Significance with Mitigation: *Less than significant.*

Loggerhead Shrike and San Francisco Common Yellowthroat

Two songbirds that are California species of special concern are known to breed or could potentially breed on the site, the loggerhead shrike and San Francisco common yellowthroat. Loggerhead shrikes have been observed regularly and fairly commonly in grasslands on the project site, and small numbers of San Francisco common yellowthroats nest in emergent and other wetland vegetation in freshwater marsh habitat, and possibly in seeps and springs.

Regional Park development would not result in the loss of wetlands, but would result in the loss of approximately 16.5 acres of suitable nesting and foraging habitat (i.e., California annual grassland) for the loggerhead shrike. Because of the abundance of such habitats in the region, project impacts on loggerhead shrike nesting and foraging habitat are not considered substantial.

If Regional Park development activities occur during the nesting season (roughly February 1 to August 31), construction could reduce the productivity of nesting shrikes and common yellowthroats in ways similar to those described for the white-tailed kite above. Both the loggerhead shrike and San Francisco common yellowthroat have suffered population declines and occur on the site in sufficient abundance that project-related construction could potentially impact multiple nests of these species. As a result, construction impacts on active nests of these species are *potentially significant*.

Significance without Mitigation: *Potentially significant.*

Impact BIO-1.6: Regional Park development activities during the nesting season could reduce the productivity of nesting shrikes and common yellowthroats. This would be a potentially significant impact.

Mitigation Measure BIO-1.6a: Avoidance. To the extent feasible, construction and tree removal activities should be scheduled to avoid the nesting season. If construction activities involving removal of trees, shrubs, or other vegetation; demolition of buildings; or grading are scheduled to take place outside the nesting season, all impacts on nesting birds protected under the MBTA and California Fish and Game Code will be avoided. The nesting season for most birds in Contra Costa County, including

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the loggerhead shrike and San Francisco common yellowthroat, extends from February 1 through August 31.

Mitigation Measure BIO-1.6b: Pre-Activity Survey. If it is not possible to schedule construction and vegetation removal activities between September 1 and January 31, then pre-activity surveys for nesting loggerhead shrikes and San Francisco common yellowthroats will be conducted by a qualified biologist to ensure that no nests will be disturbed during project implementation. Surveys will be conducted no more than seven days prior to the initiation of construction activities. During this survey, the biologist shall inspect all trees and other potential nesting habitats (e.g., shrubs and buildings) in the impact area plus a 100-foot buffer for nests. 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-activity surveys must be performed within seven days prior to initiation of work in any particular area. If the pre-activity survey does not identify the presence of any active nests of loggerhead shrikes or San Francisco common yellowthroats on or within 100 feet of the site, construction activities may proceed. If active nests of either species are identified within 100 feet of the activity area, Mitigation Measure BIO-1.5c will be implemented.

Mitigation Measure BIO-1.6c: Nest Buffers. If nests known to have eggs or young, or that cannot be confirmed to be inactive or lack eggs or young, are found, a qualified biologist shall establish an appropriate construction-free buffer around each nest in consultation with the CDFW. Generally, a buffer of 100 feet for loggerhead shrikes and San Francisco common yellowthroats is adequate to avoid causing nest abandonment. The buffer shall remain in place until the qualified biologist has confirmed that the nest is no longer active.

Significance with Mitigation: *Less than significant.*

Bat Roosts

The abundance, distribution, and species composition of bats within 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 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 buildings or magazines, or in cavities in the larger trees on the site.

If bats are day-roosting in trees or structures within the project site, the removal of these structures would 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

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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 on special-status species or on large colonies of common species would result in a *potentially significant* impact.

Significance without Mitigation: *Potentially significant.*

Impact BIO-1.7: Removal of trees or structures within the project site could result in the loss of day-roost habitat, the injury or mortality of individual bats, or the abandonment of active roosts. This would be a potentially significant impact.

Mitigation Measure BIO-1.7a: Pre-Activity Survey. A pre-activity survey for roosting bats shall be conducted by a qualified bat biologist prior to any removal of trees, buildings, magazines, 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 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 shall be used to determine occupancy. This survey 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-activity survey for roosting bats, following the methods described above, shall be conducted by a qualified bat biologist 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.

Mitigation Measure BIO-1.7b: Roost Buffers. If a maternity roost of any bat species is present, the qualified bat biologist (in consultation with the CDFW) shall determine the extent of a buffer free from new construction-related disturbance that will be maintained around the active roost. A typical buffer is 100 feet, though this buffer may be reduced in consultation with the CDFW. This buffer shall be maintained from April 1 until the young are flying, typically after August 31, as determined by a qualified bat biologist.

Mitigation Measure BIO-1.7c: Eviction. If a bat day roost is found in a structure or in a tree that is to be completely removed or replaced, individual bats shall be safely evicted under the direction of a qualified bat biologist. Eviction of bats shall occur at night, so that bats will have less potential for predation compared to daytime roost abandonment. Eviction shall occur between September and March 31, outside the maternity season, but 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 building or magazine, bats 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

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darkness, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. If feasible, one-way doors 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 tree(s) with roosts that need to be removed shall first be disturbed by removal of some of the tree's limbs not containing the bats. Such disturbance shall occur at dusk to allow bats to escape during the darker hours. The tree would then be removed the following day. All of these activities shall be performed under the supervision of the bat biologist.

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 CDFW, 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 shall not be evicted.

Mitigation Measure BIO-1.7d: Alternative Bat Roost. If a day roost of pallid bats or Townsend's big-eared bats, both California species of special concern, will be impacted, an alternative bat roost structure shall be provided because 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 shall be determined by a qualified 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 shall be erected at least one month prior to removal of the original roost structure. This structure shall be checked during the breeding season for up to three years following completion of the project, or until it is found by a qualified bat biologist to be occupied by bats, to provide information for future projects regarding the effectiveness of such structures in minimizing impacts to bats.

Significance with Mitigation: *Less than significant.*

American Badger

The American badger, a California species of special concern, has 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. Regional Park development would impact up to 16.5 acres of potential badger habitat. Because of the abundance of such habitat in the region, and because the project would implement a grazing management approach that would benefit species, including badgers, which rely on small burrowing mammals as prey, impacts on habitat for the American badger are not considered substantial.

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*.

Impact BIO-1.8: Construction activities could result in injury or mortality of badgers, and increased human activity on the site may increase vehicular mortality or disturbance of badger dens. This would be a potentially significant impact.

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Mitigation Measure BIO-1.8a: Pre-Activity Survey. Pre-activity surveys for badger dens shall be performed within 15 days prior to commencement of grading or other ground-disturbing activities. 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 shall be established around the den; the dimensions of this buffer shall be determined by the biologist in consultation with the CDFW. The buffer shall be maintained until young vacate the den, as determined by a qualified biologist.

Mitigation Measure BIO-1.8b: Relocation. If the occupied burrow is simply being used as a refugium by a single badger, or after young have been weaned from a maternity den, one of the following measures shall be implemented to avoid potential impacts on individual badgers:

- 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.

Significance with Mitigation: *Less than significant.*

BIO-2	The project would not 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 California Department of Fish and Game or US Fish and Wildlife Service.
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Riparian Habitat or Other Sensitive Natural Communities

Riparian woodland is very limited in extent (approximately 1 acre) and not well developed on the project site, occurring only adjacent to upper and lower Indian Springs. No Regional Park facilities are proposed within the riparian woodland on the project site. Further, per the proposed Plan, the Regional Park would be developed in accordance with siting and design guidelines developed to protect undeveloped habitats. These guidelines include maintaining buffers around sensitive habitats and the siting and design of park features to minimize potential impacts on sensitive habitat, including riparian woodlands. Thus, the project would not result in a significant adverse effect on riparian habitat and the impact would be *less than significant*.

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Both freshwater marsh and seasonal wetlands, which are considered sensitive habitats, are also present on the project site; impacts on these features are addressed under Impact BIO-3, below.

Significance without Mitigation: *Less than significant.*

Non-Native and Invasive Plant Species

Several non-native, invasive plant species occur in the California annual grassland and oak woodland savannah habitats located throughout the project site. Invasive species can spread quickly and can be difficult to eradicate. Many non-native, invasive plant species produce seeds that germinate readily following disturbance. Further, disturbed areas are highly susceptible to colonization by non-native, invasive species that occur locally, or whose propagules are transported by personnel, vehicles, and other equipment. Activities such as trampling, equipment staging, and vegetation removal are all factors that would contribute to disturbance. Areas of disturbance could serve as the source for promoting the spread of non-native species, which could degrade the ecological values of sensitive communities (e.g., riparian woodland and wetlands) and adversely affect native plants and wildlife that occur there. Invasive species can have an adverse effect on native species and habitats in several ways, including by altering nutrient cycles, fire frequency and/or intensity, and hydrologic cycles; by creating changes in sediment deposition and erosion; by dominating habitats and displacing native species; by hybridizing with native species; and by promoting non-native animal species.⁵⁷ However, the proposed Plan includes the following management prescriptions related to nonnative invasive plant species:

- BIO 17 – Assess the extent and abundance of invasive plants
- BIO 18 – Prioritize populations of invasive plants for treatment
- BIO 19 – Treat high-priority infestations of invasive plants
- BIO 20 – Integrate Best Management Practices into habitat maintenance and management activities

With implementation of the management prescriptions described above, project impacts due to spread of nonnative and invasive plant species would be *less than significant*.

Significance without Mitigation: *Less than significant.*

BIO-3	The project could have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
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A delineation of wetlands and other waters on the project site that are under the jurisdiction of the USACE was completed as part of the Area Plan CEQA review process⁵⁸ and verified by the USACE in

⁵⁷ Bossard, C.C., J.M. Randall, and M.C. Hoshovsky, eds., 2000, *Invasive Plants of California's Wildlands*. University of California Press, Berkeley, California.

⁵⁸ H.T. Harvey & Associates, 2011, *Concord Community Reuse Plan Concord, California Preliminary Delineation of Wetlands and Other Waters*.

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2011.⁵⁹ The site contains no other wetland features (e.g., isolated wetlands) that are not considered waters of the U.S. but should be regulated by the RWQCB as waters of the State. Freshwater marsh, seasonal wetlands, drainages, canals, and ponds that may be subject to the regulatory jurisdiction of the USACE and/or RWQCB are present on the project site. Wetlands are relatively scarce regionally, and even small wetland areas make important contributions to water quality, groundwater recharge, watershed function, and wildlife habitat in the region.

Per the proposed Plan, the Regional Park would be developed in accordance with siting and design guidelines developed to protect undeveloped habitats. These guidelines include maintaining buffers around sensitive habitats and the siting and design of park features to minimize potential impacts on sensitive habitat, including wetlands and other waters, wherever feasible. The majority of the Regional Park's roads and trails would be located along the existing road and rail network and new trail alignments would be designed to avoid impacts on jurisdictional waters to the extent feasible. Nevertheless, construction or modification of drainage crossings (e.g., hardened stream crossings, improvements to existing culverts) may be required. Placement of fill in waters of the U.S. or State would result in a potentially significant impact under CEQA if the impact were sufficiently extensive and/or the feature being impacted provided sufficiently high ecological functions and values. Project development also has the potential to cause indirect impacts on wetlands due to changes in water quality.

Per management prescription Resource 1 of the Plan, the District would implement Best Management Practices (BMPs) for erosion and sediment control during Regional Park development, operations, and maintenance activities. In addition, construction projects in California causing land disturbances that are equal to 1 acre or greater must comply with State requirements to control the discharge of stormwater pollutants under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ). Prior to the start of construction/demolition, a Notice of Intent must be filed with the State Water Board describing the project. A SWPPP must be developed and maintained during the project and it must include the use of BMPs to protect water quality until the site is stabilized. Standard permit conditions under the Construction General Permit require that the applicant utilize various measures including: on-site sediment control BMPs, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors.

In many Bay Area counties, including Contra Costa County, projects must also comply with the RWQCB, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit (MRP) (Water Board Order No. R2-2015-0049). This MRP requires that all projects implement BMPs and incorporate Low Impact Development practices into the design to prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water coming from a site after construction has been completed. Thus, impacts on water quality would be reduced to a level of less-than-significant.

Further, the project would result in the placement of a maximum of 0.05 acre (or 2,178 square feet) of fill in jurisdictional waters as a result of construction or modification of drainage crossings. This fill placement

⁵⁹ U.S. Army Corps of Engineers, 2011, Jurisdictional Delineation for the Concord Community Reuse Plan Site.

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will result in the conversion of jurisdictional waters to upland habitats and the loss of the functions and values that those waters provide. The majority of drainages on the project site are associated with the mid to upper slopes of the Los Medanos Hills and drain minimal surface flows from the adjacent foothill grasslands onto the project site during the winter rainfall period. Most support only a minimal amount of herbaceous vegetation, including grasses and forbs comprised largely of non-native species. Thus, they do not provide high-quality aquatic or wetland habitat for wildlife. Further, intermittent and ephemeral drainages are common in the region. Nevertheless, owing to the general ecological importance of wetlands and streams and regional losses of these features from development and other activities, any loss of jurisdictional waters would be considered a *significant* impact.

Some or all of these features are regulated by the USACE, RWQCB, and/or the CDFW. Project activities resulting in fill of jurisdictional features would require permits from the applicable regulatory agencies.

Significance without Mitigation: *Significant.*

Impact BIO-3: Regional Park development would result in the loss of up to 0.05-acre of jurisdictional wetlands and/or other waters. This would be a significant impact.

Mitigation Measure BIO-3a: Permitting. Prior to placing any fill in jurisdictional wetlands and/or other waters of the U.S. or state, the District will provide the necessary permit application/notification materials to the USACE for a Clean Water Act Section 404 permit, to the RWQCB for Clean Water Act Section 401 water quality certification, and to the CDFW for a Fish and Game Code Section 1602 Streambed Alteration Agreement, as applicable (e.g., impacts to jurisdictional wetlands that are not in a channel may not necessitate CDFW notification). The District will comply with all conditions of these permits/agreements when performing the work; for example, if any compensatory mitigation is required by one or more permit/agreement, then the District will provide such mitigation in accordance with permit/agreement requirements.

Mitigation Measure BIO-3b: Impact Minimization. Impacts to jurisdictional wetlands and/or other waters of the U.S. or state will be minimized to the smallest area necessary to perform the activity, and all temporary impact areas will be restored to pre-activity conditions after construction has been completed.

Significance with Mitigation: *Less than significant.*

BIO-4	The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
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Wildlife movement on the project 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. Generally, reptiles and amphibians settle within home ranges, sometimes moving between breeding areas and alternative

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refugia (e.g., aestivation sites), but also dispersing to new areas. Mammals of different species move within their home ranges, but also disperse between patches of habitat. 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.

Approximately 95 percent of the proposed Regional Park would be composed of Natural Units that would be managed to preserve and enhance natural habitats while supporting lower intensity recreational uses and facilities (primarily trails). Natural Units are intended to provide continuous and cohesive open space to support large and robust ecosystems and support wildlife movement. Within the proposed 2,543-acre project site, only 86 acres (3.4 percent) has been planned for recreational facilities and trails (including 35 acres within Recreation/Staging Units). In addition, Regional Park elements, including roads and trails, picnic areas, education and event spaces, and campsites, would be concentrated in previously disturbed areas to minimize fragmentation of habitats. Per the Plan, new trails would be constructed only where needed to avoid steep or highly eroded areas of existing roads, to avoid sensitive habitat, or to connect areas of the Regional Park that are not currently connected by the existing road network. Remnant infrastructure, including roads, rails, buildings, and magazines, that is not retained for park uses (including interpretive programming) would be removed if feasible and as funding becomes available. Priorities for initial habitat improvements consist of removal of 10.3 miles of rail line and restoration of 5.7 miles of unutilized unpaved roads.

The proposed Plan also includes measures to enhance habitat in upland areas throughout the site via managed grazing, which would benefit native species such as the California red-legged frog, by facilitating their movement through uplands. Further, in addition to preserving existing oak and native trees wherever feasible, new trees would be planted in association with Regional Park development. Target areas for native tree plantings include along natural drainages, which would enhance the quality of the drainages on site as movement corridors for wildlife by providing additional vegetative cover.

CH2M HILL⁶⁰ discussed wildlife movement in the vicinity of the proposed Regional Park 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 of 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. 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.

Movement of reptiles and amphibians between most of the project site and areas to the north is currently impeded by the presence of State Route 4. Median barriers, BART tracks, and heavy traffic would make a surface crossing highly unlikely. Although undercrossings of State Route 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 they 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

⁶⁰ CH2M HILL, 2008f. Technical Memorandum: Wildlife Movement, Concord Community Reuse Plan, March.

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little dispersal by reptiles and amphibians occurs through these crossings. Rather, any movement of reptiles and amphibians that currently occurs across State Route 4 likely occurs along Mount Diablo Creek just to the west of the project site. Because proposed Regional Park facilities development would not occur within 300 feet of Mount Diablo Creek, the project is not expected to interfere substantially with the movement of reptiles and amphibians along Mount Diablo Creek.

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. However, the tall fencing that surrounds much of the project site presents an impediment to movement of larger animals. Such fencing is present where the site borders Bailey Road, Willow Pass Road, and State Route 4. Fencing is also present in several areas within the interior of the site. Larger animals such as coyotes, gray foxes, and bobcats (*Lynx rufus*) can pass through these fences only where there are gaps under or within the fences. 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.

As a heavily-traveled roadway, Bailey Road poses a more substantial barrier to the free movement of amphibians, reptiles, and mammals. Roadways can cause wildlife mortality due to collisions when animals attempt to cross the roadway, and Bailey Road bisects the site, with only the bridge under crossing of Mount Diablo Creek to the west of the project site allowing free movement of wildlife across the roadway in the project vicinity. As described above, fencing on both sides of Bailey Road within the project site also creates an obstacle to larger mammals moving in the north-south directions. Under the proposed project, use of perimeter fencing would be limited to areas where necessary to address security and safety concerns and would remain in place along both sides of Bailey Road. Perimeter fencing would not be used in the hillside area or where the park is adjacent to other undeveloped open space. The implementation of the proposed project would not result in a change in wildlife movement across Bailey Road, while the potential removal of perimeter fencing in other locations would facilitate wildlife movement.

Thus, due to the limited development of park facilities in previously undisturbed areas, the removal of existing remnant infrastructure, and the management of the vast majority of the Regional Park to preserve and enhance natural habitats, impacts on wildlife movement are considered less than significant. Even after the Concord Reuse Project is implemented, impacts of the project on wildlife movement would be less than significant because wildlife would be able to move along Mount Diablo Creek at least as well as they currently do, and possibly better because of the Concord Reuse Project's proposed creek restoration, including removal of culverts and construction of only free-span bridges.

A number of species of birds nest in the varied habitats of the project site. Regional Park development would result in the loss of few, if any, potential nest trees, but would result in a small reduction in the availability of ground nesting and foraging habitat due to the development of approximately 16.5 acres of California annual grassland. Due to the widespread nature of this regionally common habitats, the loss of nesting habitat for common bird species would not be a substantial impact.

Construction disturbance during the avian breeding season (February 1 through August 31, for most species) could result in the incidental loss of eggs or nestlings, either directly through the destruction or

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disturbance of active nests or indirectly by causing the abandonment of nests. However, species of birds currently using the project site are expected to continue to nest and forage on the site after project construction is completed as approximately 95 percent of the Regional Park would be composed of Natural Units planned and managed to preserve and enhance natural habitat. Further, birds on the site are habituated to low levels of disturbance related to the existing CNWS.

Therefore, project impacts on common nesting and foraging birds that use the site, due to minimal habitat impacts and minor disturbances of nesting birds, would not rise to the CEQA standard of having a substantial adverse effect, and these impacts on these species' movement, native resident or migratory corridors, and use of nursery sites would be *less than significant*.

All native bird species are protected from direct take by federal and State statutes (see Section 4.3.1.1). Mitigation Measures BIO-1.6a through BIO-1.6c would be implemented for all nesting birds to ensure compliance with the MBTA and California Fish and Game Code.

Significance without Mitigation: *Less than significant.*

BIO-5 The project could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

A number of trees on the project site meet the criteria for a protected tree under the City of Concord's Tree Preservation and Protection Ordinance. Per the proposed Plan, the Regional Park would be developed in accordance with siting and design guidelines developed to protect undeveloped habitat. These guidelines include maintaining buffers around sensitive habitats, and the siting and design of park features to minimize potential impacts on sensitive habitat, including existing oak and native trees wherever feasible. Further, per management prescription Resource 5 of the Plan, the District would monitor and maintain trees, including existing oak trees and planted native trees, for species health and to minimize potential hazards. Nevertheless, complete avoidance of all heritage trees may not be feasible and trees that meet the criteria for a protected tree could be removed, trimmed, or otherwise affected by Regional Park development and maintenance-related activities. Removal of heritage trees would be considered a *significant* impact owing to the City's Tree Preservation and Protection Ordinance.

Significance without Mitigation: *Significant.*

Impact BIO-5: Regional Park development could result in the loss of heritage trees protected by the City of Concord's Tree Preservation and Protection Ordinance. This would be a significant impact.

Mitigation Measure BIO-5: Tree Removal Permit. Prior to removing or trimming any heritage tree protected by the City of Concord's Tree Preservation and Protection Ordinance, the District will obtain any necessary permit from the City of Concord to impact that tree. The District will then comply with any conditions of the permit, including any tree replacement that might be required.

Significance with Mitigation: *Less than significant.*

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BIO-6 **The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.**

The project site is not within any local, regional or state habitat conservation plan areas, nor is the project site within the permit area of the ECCC HCP/NCCP. Therefore, the project would not conflict with the conservation strategy in any 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 or regulate adjacent projects. Further, the Biological Opinion adopted by the USFWS in May 2017, including the conservation measures and project elements described therein, are compatible with and will serve to support the conservation goals and objections of the ECCC HCP/NCCP. Therefore, the impact is *less than significant*.

Significance without Mitigation: *Less than significant.*

4.3.4 CUMULATIVE IMPACTS

BIO-7 **The project would not contribute to significant biological resource impacts.**

The region of influence for the biological resources cumulative assessment includes the area shown on Figure 2-2 of the proposed Plan, which encompasses the proposed Concord Reuse Project and Faria/Southwest Hills project sites as well as development sites in Concord, Pittsburg, and Contra Costa County. In addition, areas farther east and south in Contra Costa County that provide habitat types similar to those in the project area are also included within the region of influence for this analysis. This area comprises the location in which potential impacts from the proposed project, in combination with the impacts of the other projects, could combine to result in cumulative impacts on biological resources.

In 2006, the Concord City Council launched a multi-year process to prepare a Reuse Plan for the inland area of the former Concord Naval Weapons Station (CNWS), including the proposed Regional Park site. The City Council, acting as the Local Reuse Authority (LRA), prepared the Concord Community Reuse Plan and the associated EIR, which was finalized in 2010. Subsequently, the City prepared the Concord Reuse Project Area Plan, which translates the community vision of the Reuse Plan into policies and standards to guide development on the inland portion of the former CNWS. The Concord Reuse Project Area Plan was adopted by the City in 2012 and incorporated into the City's General Plan. The portion of the CNWS to be used for the purpose of economic development—including housing, employment, education, and retail uses—will be transferred to the City while a significant portion will be transferred to the District for the proposed Regional Park.

The City released a Notice of Preparation in November 2018, for the Concord Reuse Project Specific Plan and associated EIR; which will detail development plans associated with the economic development conveyance portion of the former Naval Weapons Station. The City is leading a sitewide permitting approach that started with working with the USFWS on the BO and will continue with the USACE, RWQCB, and CDFW. The City's planning for the entire inland area of the former CNWS determined where the

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highest-quality biological resources were and planned for those to be conservation areas (i.e., the proposed Regional Park).

New development, whether associated with the proposed project or 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. It is also possible that construction by the City in the Concord Reuse Project's Economic Development Conveyance area, which will be phased over a period of several decades, may occur simultaneously with some of the District's Regional Park construction activities, thereby subjecting special-status species to the effects of construction over a larger area. However, by setting aside the most sensitive lands for conservation, focusing development on lower-quality lands, comprehensively assessing impacts in the 2010 Concord Community Reuse Project Final EIR and this EIR, implementing mitigation measures from both EIRs as applicable, engaging with the USFWS and implementing the BO's conditions, and working with regulatory agencies as needed, the District and the City together will reduce cumulative impacts on biological resources as a result of implementation of the Concord Area Plan and the Concord Hills Regional Park Land Use Plan, even if construction activities occur simultaneously.

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. The ECCC HCP/NCCP mitigates impacts on sensitive biological resources, including many of the same species and sensitive habitats that would be impacted on the project site, over a much broader area of eastern Contra Costa County. Together, implementation of the mitigation measures described in this EIR and the HCP/NCCP and its EIR/EIS are expected to prevent impacts on special-status species and sensitive habitats from becoming cumulatively significant.

Impact BIO-4 describes the effects of the proposed project on wildlife movement, which are considered to be less than significant for reasons described in that impact discussion. Furthermore, any impacts on wildlife movement on the site do not contribute to regional impacts on 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 would 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 under the proposed project would maintain existing landscape linkages between the site and natural areas to the southeast. The preservation of this wildlife linkage would be positive compared with the development proposed by adjacent projects, and it would reduce the impacts from those other projects. Thus, the project would not contribute to cumulative impacts on wildlife movement and the impact would be *less than significant*.

Significance without Mitigation: *Less than significant.*

BIOLOGICAL RESOURCES

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4.4 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES

This chapter describes the regulatory framework, existing conditions, and potential effects of proposed Plan implementation related to cultural resources, including historic-era resources of the built environment, historic-era and prehistoric archaeological resources, tribal cultural resources (TCRs), and human remains. This chapter also discusses paleontological resources. The information presented in this chapter has been adapted from the following two comprehensive studies completed for the Concord Naval Weapons Station (CNWS) Base Realignment and Closure (BRAC):

- In 2013, JRP Historical Consulting prepared an inventory and evaluation of the built environment (including buildings, structures, bridges, railroads, water-conveyance systems, etc.).^{1,2}
- In 2014, ASM Affiliates documented and evaluated archaeological resources (both historic-era and prehistoric).^{3,4}

4.4.1 ENVIRONMENTAL SETTING

4.4.1.1 REGULATORY FRAMEWORK

Federal Laws and Regulations

Effects of federal undertakings on historic and archaeological resources are considered through the National Historic Preservation Act (NHPA) of 1966, as amended (54 United States Code [U.S.C.] 306108), and its implementing regulations. Before an undertaking (e.g., federal funding or issuance of a federal permit) is implemented, Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties (i.e., properties listed in or eligible for listing in the National Register of Historic Places [National Register]) and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register. Under the NHPA, a property is considered significant if it meets the National Register listing criteria a through d, at 36 Code of Federal Regulations 60.4, as follows:

¹ JRP Historical Consulting, 1998, Inventory and Evaluation of National Register Eligibility of Cold War Era and Selected Other Buildings and Structures, Naval Weapons Support Facility, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for the U.S. Army Corps of Engineers.

² JRP Historical Consulting, 2013, Historic Building Inventory and Evaluation Update Report Inland Area, Concord Naval Weapons Station, Contra Costa County, California. Prepared for NAVFAC SOUTHWEST.

³ ASM Affiliates, 2008, Final Report for Concord Inland BRAC Disposal Archeological Survey, Naval Weapons Stations, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for Navy Base Realignment and Closure Program Management Office West.

⁴ ASM Affiliates, 2014, National Register of Historic Places Evaluation of 21 Archaeological Sites in Support of the Environmental Impact Statement for Disposal and Reuse of the Former Naval Weapons Station, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for Navy Base Realignment and Closure Program Management Office West.

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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:

- a) Are associated with events that have made a significant contribution to the broad patterns of our history, or
- b) Are associated with the lives of persons significant in our past, or
- c) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or
- d) Have yielded, or may be likely to yield, information important in prehistory or history.

For a resource to be eligible for the National Register, it must also retain enough integrity to be recognizable as a historical resource and to convey its significance. Resources that are less than 50 years old are generally not considered eligible for the National Register.

Federal review of the effects of undertakings on significant cultural resources is carried out under Section 106 of the NHPA and is often referred to as the Section 106 review. This process is the responsibility of the federal lead agency. The Section 106 review typically involves a four-step procedure, which is described in detail in the implementing regulations of the NHPA:

- Define the Area of Potential Effects in which an undertaking could directly or indirectly affect historic properties.
- Identify historic properties in consultation with the State Historic Preservation Officer (SHPO) and interested parties.
- Assess the significance of effects of the undertaking on historic properties.
- Consult with the SHPO, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify the Advisory Council on Historic Preservation and proceed with the Project according to the conditions of the agreement.

In compliance with Section 106, the United States Department of the Navy (Navy), the City of Concord, the East Bay Regional Park District (District), and the SHPO entered into a Memorandum of Agreement (MOA) in regard to historic properties in the United States Naval Weapons Station, Concord (CNWS). The MOA was executed on April 10, 2017 for a period of 10 years.

As discussed further below, the Navy identified two prehistoric archaeological sites in the CNWS (CA-CCO-680 and P-07-000861). Site CA-CCO-680 is on City of Concord property. Site P-07-000861 is on District property. The Navy consulted with SHPO, ACHP, and federally recognized Native American tribes on a Native American Graves Protection and Repatriation Act (NAGPRA) Plan of Action, executed in July 2012 and the Navy reburied human remains and NAGRPA cultural items at site CA-CCO-680. The federally-recognized tribes included the California Valley Miwok Tribe, the Lone Band of Miwok Indians, Shingle Springs Band of Miwok Indians, and Wilton Rancheria.

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In the MOA, the District agreed that site P-07-000861 on District property is eligible for listing in the National Register under criteria a and d, and may have cultural and religious significance to Native Americans. In addition, the District agreed to withhold public disclosure of the location and character of site P-07-000861 and protect the site with a 50-foot-wide buffer in a habitat conservation area restricted from public access.

State Laws and Regulations

The State of California implements the National Historic Preservation Act of 1966, as amended, through its statewide comprehensive cultural resource surveys and preservation programs. The California Office of Historic Preservation, as an office of the California Department of Parks and Recreation (DPR), implements the policies of the National Historic Preservation Act on a statewide level. The Office of Historic Preservation also maintains the California Historical Resources Inventory. The State Historic Preservation Officer is an appointed official who implements historic preservation programs within the State's jurisdictions.

California Environmental Quality Act

The California Environmental Quality Act (CEQA), as codified in Public Resources Code (PRC) Sections 21000 *et seq.*, is the principal statute governing the environmental review of projects in the state. CEQA requires lead agencies to determine if a proposed project would have a significant effect on historical resources, including archaeological 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 (PRC Section 21084.1). 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" (CEQA Guidelines Section 15064.5(b)(1)).

The term "historical resource" includes, but is not limited to: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (California Register); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record (CEQA Guidelines Section 15064.5(a).)

CEQA applies to effects on archaeological sites as well. A lead agency must first determine whether the archaeological site is an historical resource pursuant to CEQA Guidelines Section 15604.5(a). If so, PRC Section 21084.1 applies. If an archaeological site does not qualify as a historical resource, but meets the definition of a unique archaeological resource, the site shall be treated in accordance with the provisions of PRC Section 21083.2. A unique archaeological resource is "an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person” (PRC Section 21083.2 [g]).

If an archaeological resource is neither a unique archaeological resource nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment with respect to that particular, cultural resource (CEQA Guidelines Section 15064.5[c][4]).

California Register of Historical Resources

The California Register is “an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change” (PRC Section 5024.1[a]). A resource may be listed as an historical resource in the California Register if it meets any of the criteria for the National Register criteria (PRC Section 5024.1(b)):

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history (PRC Section 5024.1[c]).

Historical resources may not retain sufficient integrity to meet the criteria for listing in the National Register but may still be eligible for listing in the California Register if it maintains the potential to yield significant scientific or historical information or specific data.

Assembly Bill 52: Tribal Cultural Resources

In September of 2014, the California Legislature passed Assembly Bill (AB) 52, which added provisions to the PRC, that included the definition of a new resource type, tribal cultural resources, for consideration under CEQA. AB 52 outlines the process for evaluating proposed project impacts on tribal cultural resources and following consultation requirements with California Native American tribes. In particular, AB 52 requires lead agencies to analyze project impacts on tribal cultural resources separately from archaeological resources (PRC Sections 21074, 21083.09). AB 52 also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes when a tribe has specifically requested consultation with an agency (PRC Sections 21080.3.1, 21080.3.2, 21082.3).

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Specifically, PRC Section 21084.3 states:

- a) Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.
- b) If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in Section 21080.3.2, the following are examples of mitigation measures that, if feasible, may be considered to avoid or minimize the significant adverse impacts:
 - 1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
 - 2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - (A) Protecting the cultural character and integrity of the resource.
 - (B) Protecting the traditional use of the resource.
 - (C) Protecting the confidentiality of the resource.
 - 3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
 - 4) Protecting the resource.

AB 52 applies to those projects for which a lead agency has issued a Notice of Preparation of an environmental impact report or notice of intent to adopt a negative declaration on or after July 1, 2015.

California Health and Safety Code Sections 7052 and 7050.5

Section 7052 of the Health and Safety Code regulates the disturbance of Native American cemeteries as a felony. This provision protects human remains and prohibits the disturbance or removal of human remains from any location other than a dedicated cemetery. The provision further identifies steps to follow in the event of accidental discovery or recognition any human remains, directs the county coroner to determine whether the remains are those of a Native American, and, if so, the coroner is required to contact the Native American Heritage Commission (NAHC).

California Native American Historical, Cultural and Sacred Sites Act

The California Native American Historical, Cultural and Sacred Sites Act applies to both State-owned and privately-owned lands. The Act requires that construction or excavation activity cease when human remains are discovered, and that the County coroner be notified. If the remains are of a Native American, the NAHC is notified; the Commission is authorized to identify the most likely descendant of the deceased. The Act details the process which descendants follow for treating the remains and any associated grave goods. California Native American Historic Resource Protection Act.

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The California Native American Historic Resource Protection Act imposes civil penalties, including imprisonment and fines, for persons who unlawfully and maliciously excavate upon, remove, destroy injures or defaces a native American historic, cultural or sacred site that is listed or may be listed in the California Register.

California Public Resources Code Section 5097

PRC Section 5097.99 states that no person shall obtain or possess any Native American artifacts or human remains that are taken from a Native American grave or cairns. This provision prohibits the removal of any paleontological site or feature from public lands without the permission of the jurisdictional agency.

California Penal Code Section 622.5

California Penal Code Section 622.5 details the penalties for damage or removal of paleontological resources.

District Regulations

East Bay Regional Park District Master Plan (2013)

The East Bay Regional Park District (District) Master Plan, adopted July 16, 2013, provides policy direction for resource stewardship and development of parks within the jurisdiction of the District. The Master Plan also includes a vision, a mission statement, as well as policies and goals addressing cultural resource management.

The Cultural Resource Management (CRM) section of the Master Plan includes the following policies related to cultural resources, and applicable to the proposed project:

- CRM 1: The District will manage, conserve, and when practical restore parkland cultural and historic resources and sites; to preserve the heritage of the people who occupied this land before the District was established; and continue to encourage the cultural traditions associated with the land today.
- CRM-2: The District may acquire cultural and historic resource sites when they are within land that meet parkland acquisition criteria and will maintain and active archive of its institutional history and the history of its parklands and trails.
- CRM 3: The District will maintain a current map and written inventory of all cultural features and sites found on park land, and will preserve and protect these cultural features and sites “in situ” in accordance with Board policy. The District will evaluate significant cultural and historic sites to determine if they should be nominated for State Historic Landmark status or for the National Register of Historic Places.
- CRM 4: The District will determine the level of public access to cultural and historic resources using procedures and practices adopted by the Board of Directors. The District will employ generally accepted best management practices to minimize the impact of public use and access on these resources, and to appropriately interpret the significance of these resources on a regional scale.

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- CRM 5: The District will notify Native Americans and other culturally associated peoples in a timely manner of plans which may affect sites and landscapes significant to their culture and will include them in discussions regarding the preservation and land use planning of culturally significant sites and landscapes.
- CRM 6: The District will accommodate requests by Native Americans, ranching or farming communities and other groups to help maintain and use cultural sites and to play an active role in their preservation and interpretation.

Additional policies in the Master Plan include:

- IRS 1: The District will provide a variety of interpretive programs that focus attention on the region's natural and cultural resources. Programs will be designed with sensitivity to the needs and interests of people of all ages and backgrounds. Programs will enhance environmental experiences and foster values that are consistent with conserving natural and cultural resources for current and future generations to enjoy. The District will pursue and encourage volunteer support to assist in meeting these objectives.
- KEP 4: The District will participate in efforts to protect scenic or cultural resources, develop larger, multi-agency open space preserves, provide recreational opportunities, protect agricultural use, avoid hazards and plan for appropriate urban growth boundaries. The District will work with other jurisdictions to develop open space preservation plans and policies that recognize the District's public interests in open space preservation and that are consistent with Board policy.
- PRPT22: Areas with unique or fragile features will be designated as Special Protection Features to preserve and enhance them through specialized management. Special Protection Features may be closed seasonally or permanently to public access, if public access will endanger them.

East Bay Regional Park District Ordinance 38

District Ordinance 38 addresses the protection of cultural resources on District lands. These protections include:

- Section 805. Geological Features. No person shall damage, injure, collect or remove earth, rocks, sand, gravel, fossils, minerals, features of caves, or any article or artifact of geological interest or value located on District parklands.
- Section 806. Archaeological Features. No person shall damage, injure, collect or remove any object of paleontological, archaeological or historical interest or value located on District parklands. In addition, any person who willfully alters damages, or defaces any object of archaeological or historical interest or value or enters a fenced and posted archaeological or historical site shall be arrested or issued a citation pursuant to Penal Code Section 622-1/2.
- Section 807. Special Permission. Special permission (Section 103) may be granted to remove, treat, disturb, or otherwise affect plants or animals or geological, historical, archaeological, or paleontological materials for research, interpretive, educational, or park operational purposes.

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East Bay Regional Park District General Conditions (2016)

Article 22 of the District's internal General Conditions for contractors applicable to the cultural resources in the proposed Concord Hills LUP include:

- Article 23. Protection of Historic Resources and Human Remains:
 - (a) If cultural resources or human remains should be encountered during construction, all ground disturbing activities within fifty (50) feet of the find shall be halted and the District Inspector notified immediately. Work shall not be permitted to commence until the District provides written direction to proceed. Only the balance of that work day shall be compensated by the District if the Contractor cannot perform work elsewhere on the project. Examples of cultural resources include:
 1. Prehistoric archaeological deposits such as obsidian or chert flakes or tools; ground-stone mortars, slabs, or pestles; cultural deposits of shell or bone; locally darkened midden (trash) soils; and human interments.
 2. Historic-period archaeological materials such as foundations or other structural remains; refuse deposits; backfilled wells or privies; nails; glass and pottery.
 - (b) Do not collect, deface, excavate, or destroy any objects of antiquity. Examples of such objects include stone-flaked or ground tools, bones, shells, beads, bottles, nails, barbed wire, ceramic pieces, buttons, weathered boards, and tin cans. Leave these objects undisturbed. If discovered, leave in place, note their location, and immediately notify the District Inspector.

Local Regulations and Land Use Plans

City of Concord General Plan

The City of Concord General Plan includes the following relevant goal, principle, and policies regarding cultural resources.

- Goal POS-4: Preserve Historic and Archeological Resources.
- 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.

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Concord Reuse Project Area Plan

The Concord Reuse Project Area Plan, which is incorporated by reference in the City of Concord General Plan, includes the following relevant policies regarding cultural resources.

- Policy C-9.1: Prior to carrying out earth disturbing activities that would impact any identified historic site, implement measures for the preservation in place, or adequate data recovery, curation, and documentation of historic properties/historical resources.
- Policy C-9.2: Prior to approving restoration or development of any park, open space, or recreation areas, implement cultural resources protection measures to control public access to areas where any identified cultural resources are located.
- Policy C-9.3: Implement inadvertent discovery measures for the protection of undocumented cultural resources that may be revealed during construction activities.

These measures will include:

- Training of all construction personnel.
- On-site monitoring by a qualified archaeologist for all earth disturbing activities within the boundaries of documented resources areas and archaeologically sensitive areas.
- Procedures for the discovery of cultural resources during construction if an archaeological monitor is not present.

City of Concord Development Code

Chapter 18 of the City of Concord Municipal Code addresses cultural resources, in particular, standards to protect recognize, preserve, and enhance areas, places, sites, buildings, and structures of historic, community, or aesthetic interest or value. No person is permitted to alter the exterior of, construct improvements to, demolish, or relocate any structure or alter the appearance of any property designated as a city historic landmark except in compliance with the requirements of the City Code. The City Code also outlines the procedures for nominations of areas, places, sites, buildings, structures, and similar objects for designation as landmarks or districts.

4.4.1.2 EXISTING CONDITIONS

Definitions

Historic-era architectural resources include buildings, structures, objects, sites, and historic districts. Military-related architectural resources include earthen batteries, concrete foundations, rock alignments, water-conveyance features, and other artifact concentrations. Historic architectural resources that are listed in or are eligible for listing in the National Register are considered “historic properties.” Historic architectural resources that are listed in or are eligible for listing in the California Register are considered “historical resources.”

Archaeological resources consist of prehistoric or historic-era archaeological resources. Prehistoric archaeological materials include: obsidian and chert flaked-stone tools (e.g., projectile points, knives,

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scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, milling slabs). Historic-era archaeological materials (not associated with military installations or activities) include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. Similar to historic-era architectural resources, archaeological resources that are listed in or are eligible for listing in the National Register are considered “historic properties.” Archaeological resources that are listed in or are eligible for listing in the California Register are considered “historical resources.” In addition, archaeological resources can be considered “unique archaeological resources” under CEQA.

Tribal Cultural Resources is defined in CEQA⁵ as either of the following:(1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to California Native American Tribe that are either on or eligible for the California Register or a local historic register, or (2) a resource determined by the lead agency, at its discretion, and supported by substantial evidence, to be significant pursuant to CEQA Guidelines Section 5024.1(c).. As discussed above, AB 52 requires lead agencies to analyze project impacts on TCR, separately from archaeological resources, in recognition that archaeological resources have cultural values beyond their ability to yield data important to prehistory, or history.

Setting

Natural Setting

The project site is in the Mount Diablo Creek drainage system along a south-north sloping valley. Hills on the east of the valley rise over 600 feet above sea level, reaching a maximum elevation of approximately 1,000 feet in the south. The area is within the Bay Area-Delta bioregion, which consists of a variety of natural communities that range from the open waters of the Suisun Bay and Delta to salt and brackish marshes to chaparral and oak woodlands. The temperate climate is Mediterranean in nature, with relatively mild, wet winters and warm, dry summers. Habitat types include annual (non-native) grasslands, coastal scrub, Eucalyptus woodland, riparian corridors, emergent wetlands, and ruderal communities. A wide variety of migratory and year-round resident birds use the bay and associated creeks and marshes as habitat for nesting and feeding. Salmonid and other fish were historically present in local creeks, and Mount Diablo Creek is still identified as an important fish habitat.

The San Francisco Bay Area has undergone dramatic landscape changes since humans began to inhabit the region more than 13,000 years ago. Sea levels began rising about 15,000 years ago, at which time the coastline was located west of the Farallon Islands, and reached the present level of the bay about 5,000 years ago. This dramatic change in stream base-level has resulted in increased deposition of sediment along the lower reaches of streams and bays.⁶ Gold Rush-era sedimentation has exacerbated this

⁵ California Public Resources Code, Section 21074.

⁶ Helley, Edward J., Lajoie, K.R., Spangle, W.E., and Blair, M.L., 1979, Flatland Deposits of the San Francisco Bay Region, California - their geology and engineering properties, and their importance to comprehensive planning, Geological Survey Professional Paper 943.

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deposition over alluvial fans and within the bay and delta. Active alluvial fan⁷ deposits are generally less than 5,000 years old and overlie older land surfaces (including stabilized and abandoned Pleistocene-age alluvial fans).

In many places, the interface between older land surfaces and active alluvial fans is marked by a well-developed buried soil profile, or a paleosol.⁸ Paleosols preserve the composition and character of the earth's surface prior to subsequent sediment deposition; thus, paleosols have the potential to preserve archaeological resources if the area was occupied or settled by humans.⁹ Because human populations have grown since the arrival of the area's first inhabitants, younger paleosols (late Holocene) are more likely to yield archaeological resources than older paleosols (early Holocene or Pleistocene).

Holocene-age alluvial sediment has a high potential to contain paleosols and buried archaeological resources, especially near to the meandering alignment of Mt. Diablo creek. Numerous archaeological sites have been found in this context in the greater Bay Area; no buried sites have been previously documented in the project site, the vicinity of Mount Diablo Creek, or the city of Concord.

Prehistoric Context

Categorizing the prehistoric period into cultural stages allows researchers to describe a range of archaeological resources with similar cultural patterns and components during a given time frame, creating a regional chronology. This section provides a brief discussion of the prehistoric chronology for the project site.

The natural marshland communities along the edges of bays and channels were the principal source for subsistence and other activities during the prehistory of the San Francisco Bay region. Many of the original surveys of archaeological sites in the Bay region were conducted between 1906 and 1908 by U.C. Berkeley archaeologist N.C. Nelson. Such surveys yielded the initial documentation of nearly 425 "earth mounds and shell heaps" along the littoral zone of the bay.¹⁰ From these beginnings, the most notable sites in the region were excavated scientifically, such as the Emeryville shellmound (CA-ALA-309), the Ellis Landing Site (CA-CCO-295) in Richmond, and the Fernandez Site (CA-CCO-259) in Rodeo Valley.¹¹ These dense midden sites, such as CA-ALA-309, have been dated to be 2,310 ± 220 years old, but other evidence suggests that human occupation in the region is of greater antiquity, perhaps as early as 7000 B.C. (Davis & Treganza, 1959, cited in Moratto, 1984).¹²

⁷ Alluvial fans are fan-shaped deposits of water-transported material (alluvium). They typically form at the base of topographic features where there is a marked break in slope, and contain both active and abandoned stream channels, terraces, natural levees and other fluvial morphologies.

⁸ A paleosol is a buried soil that forms when sediment is deposited over a surface with a developed soil profile without it being eroded away first.

⁹ Meyer, Jack, and Jeffrey Rosenthal, 2007, *Geoarchaeological Overview of the Nine Bay Area Counties* in Caltrans District 4. Prepared for Caltrans District 4.

¹⁰ Nelson, N.C., 1909, *Shellmounds of the San Francisco Bay Region*, University of California Publications, American Archaeology and Ethnology.

¹¹ Moratto, M.J., 1984, *California Archaeology*, Smithsonian Press: San Diego.

¹² Moratto, M.J., 1984, *California Archaeology*, Smithsonian Press: San Diego.

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Milliken *et al.*¹³ has provided a framework for the interpretation of the San Francisco Bay Area and divided human history into four periods: the *Paleoindian Period* (11,500 to 8000 B.C.), the *Early Period* (8000 to 500 B.C.), the *Middle Period* (500 B.C. to A.D. 1050), and the *Late Period* (A.D. 1050 to 1550). Economic patterns, stylistic aspects, and regional phases further subdivide cultural patterns into shorter phases. This scheme uses economic and technological types, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

The *Paleoindian Period* (11,500 to 8000 B.C.) was characterized by big-game hunters occupying large geographic areas. Evidence of human habitation during the *Paleoindian Period* has not yet been discovered in the San Francisco Bay Area. During the *Early Holocene (Lower Archaic, 8000 to 3500 B.C.)*, geographic mobility continued from the *Paleoindian Period* and is characterized by the milling slab and handstone as well as large wide-stemmed and leaf-shaped projectile points. The first cut shell beads and the mortar and pestle are first documented in burials during the *Early Period (Middle Archaic, 3500 to 500 B.C.)*, indicating the beginning of a shift to sedentism. During the *Middle Period*, which includes the *Lower Middle Period (Initial Upper Archaic, 500 B.C. to A.D. 430)*, and *Upper Middle Period (Late Upper Archaic, A.D. 430 to 1050)*, geographic mobility may have continued, although groups began to establish longer term base camps in localities from which a more diverse range of resources could be exploited. The first rich black middens are recorded from this period. The addition of milling tools, obsidian, and chert concave-base projectile points, as well as the occurrence of sites in a wider range of environments, suggest that the economic base was more diverse. By the *Upper Middle Period*, mobility was being replaced by the development of numerous small villages. Around A.D. 430, a dramatic cultural disruption occurred as evidenced by the sudden collapse of the *Olivella* saucer bead trade network. During the *Initial Late Period (Lower Emergent, A.D. 1050 to 1550)*, social complexity developed toward lifeways of large, central villages with resident political leaders and specialized activity sites. Artifacts associated with the period include the bow and arrow, small corner-notched projectile points, and a diversity of beads and ornaments.

Ethnographic Background

Based on a compilation of ethnographic, historic, and archaeological data, Milliken¹⁴ describes a group known as the Bay Miwok, who once occupied the general vicinity of the project site. Bay Miwok territory extended from East Contra Costa County eastward to the Sacramento—San Joaquin Delta. Miwok refers to the entire language family that was spoken by the Bay Miwok, as well as Coast, Lake, Valley, and Sierra Miwok. Along with the Ohlone peoples of the San Francisco Bay Area, the Miwok are members of the Utian language family. While traditional anthropological literature portrayed the Miwok peoples as having a static culture, today it is better understood that many variations of culture and ideology existed within and between villages. While these static descriptions of separations between native cultures of California make it an easier task for ethnographers to describe past behaviors, this masks Native adaptability and

¹³ Milliken, R., R. Fitzgerald, M.G. Hylkema, R. Groza, T. Origer, D.G. Bieling, A. Leventhal, R.S. Wiberg, A. Gottsfeld, D. Gillette, V. Bellifemine, E. Strother, R. Cartier, and D.A. Fredrickson, 2007, Punctuated Culture Change in the San Francisco Bay Area. Chapter 8 in *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar. Altamira Press, Lanham, Maryland.

¹⁴ Milliken, Randall T., 1995, *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area, 1769-1810*. Ballena Press, Menlo Park.

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self-identity. California's Native Americans never saw themselves as members of larger cultural groups, as described by anthropologists. Instead, they saw themselves as members of specific villages, perhaps related to others by marriage or kinship ties, but viewing the village as the primary identifier of their origins.

The *Chupcan*, a subgroup of the Bay Miwok, consisted of 300 to 400 people who inhabited the lower Diablo Valley, including the project site and the areas of the present cities of Concord, Clayton, and Walnut Creek.¹⁵ Each large village had a tribal leader but there does not appear to have been a defined larger organization.^{16,17} The settlement pattern included permanent villages in valleys, along rivers or other waterways, organized as districts of smaller settlements or 'tribelets' around "one larger and continuously inhabited town, the center of a community with some sense of political unity."¹⁸ Economically, the *Chupcan* engaged in hunting and gathering. Their territory encompassed both coastal and open valley environments that contained a wide variety of resources, including grass seeds, acorns, bulbs and tubers, bear, deer, elk, antelope, a variety of bird species, and rabbit and other small mammals. Marshlands were utilized for resource procurement, including the collection of fish, shellfish, plants, and sea mammals. The *Chupcan* built two types of dwellings including semi-subterranean pit houses used in the winter months and pole-framed houses thatched with tule or other brushy plants.¹⁹

By the mid-1800s Spanish missionization, diseases, raids by Mexican slave traders, and dense immigrant settlement had disrupted Miwok culture, dramatically reducing the population, and displacing the native people from their villages and land-based resources. Descendants of Bay Miwok groups and adjacent Patwin and Ohlone groups, who resided at the Missions San Francisco and San José during the Spanish period, are the closest genetic relatives.²⁰

Historical Overview

The information presented in this section has been adapted from the summarized historic context developed by JRP Historical Consulting^{21,22} during the inventory and evaluation of the historic built environment for the Inland Area of the Concord Naval Weapons Station, which includes the project site.

¹⁵ Milliken, Randall T., 1995, *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area, 1769-1810*. Ballena Press, Menlo Park.

¹⁶ Kroeber, Alfred L., 1925, *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Smithsonian Institution, Washington, D.C., Reprinted 1976 by Dover, New York.

¹⁷ Levy, Richard, 1978, *Costanoan In California*, edited by Robert F. Heizer, pages 485 to 495. *Handbook of North American Indians*, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

¹⁸ Kroeber, Alfred L., 1925, *Handbook of the Indians of California*, page 218. Bureau of American Ethnology Bulletin 78. Smithsonian Institution, Washington, D.C., Reprinted 1976 by Dover, New York.

¹⁹ Levy, Richard, 1978, *Costanoan In California*, edited by Robert F. Heizer, pages 485 to 495. *Handbook of North American Indians*, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

²⁰ Milliken, R., L.H. Shoup, and B.R. Ortiz, 2009, *Ohlone/Costanoan Indians of the San Francisco Peninsula and their Neighbors, Yesterday and Today*. Prepared for National Park Service, Golden Gate National Recreation Area.

²¹ JRP Historical Consulting, 1998, *Inventory and Evaluation of National Register Eligibility of Cold War Era and Selected Other Buildings and Structures, Naval Weapons Support Facility, Seal Beach, Detachment Concord, Contra Costa County, California*. Prepared for the U.S. Army Corps of Engineers.

²² JRP Historical Consulting, 2013, *Historic Building Inventory and Evaluation Update Report Inland Area, Concord Naval Weapons Station, Contra Costa County, California*. Prepared for NAVFAC SOUTHWEST.

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Spanish, Mexican, and Early American Periods

The earliest documented uses of the land that comprises the project site revolved around the agricultural operations of Spanish, Mexican, and early American settlers. The Mexican land grants of Rancho Los Medanos and Rancho Monte Del Diablo, both granted in the 1830s, occupied the variable swath of mountains, plains, and coastline extending between the contemporary areas of Pittsburg and Antioch to Pacheco. Orchards, cattle ranching, and sheep grazing dominated the landscape until the middle of the nineteenth century, when the discovery of coal on the slopes of Mount Diablo brought an influx of mining activity, increased population, and greater connectivity through a burgeoning network of railroads.

With the decline of coal extraction in the 1880s, mining boomtowns dwindled and agriculture regained preeminence. The waterfront proved ideal for shipping, as the bay remained deep enough even at low tide to permit the passage and docking of steam vessels. Further, the Southern Pacific and Santa Fe Railroad lines passing through the area along Suisun Bay allowed for increasingly productive agricultural transfer and storage. Wharves and warehouses were built along the shoreline of the Carquinez Strait, storing abundant agricultural production, most notably wheat. A further shift in land use occurred in the 1890s with the development of the short-lived Copper King Smelting Company Plant. Sited at Seal Bluff Landing, the Plant increasingly drew men and material to the coastal area. While the company declared bankruptcy in 1903, the area boasted many amenities including a post office, a general store, and a saloon. Upon the heels of the company's failure, a new venture came to dominate the area when C.A. Smith developed a substantial lumber processing complex at Seal Bluff Landing. Employing over 2,000 workers, the company established the town-site of Bay Point, later called Port Chicago. Despite a 1913 fire which destroyed virtually the entire stock of lumber, the company remained a dominant figure in the area until the Great Depression when a diminished demand for lumber forced the plant's closing.

In the early twentieth century, two additional railroad lines were constructed in the area: the Bay Point & Clayton and the Sacramento Northern Railroad (then called the Oakland, Antioch and Eastern Railway). With ample rail and shipping capabilities, the area was well suited to respond to the military demands of the First World War. In 1917 the Navy entered into a contract with the Electro Metals Company and the Pacific Ship Building Company to build freighters for the war effort. Situated at Bay Point, the wartime production facilities assured continued expansion in the area. The town of Clyde was a product of this boom and established to provide much needed support for businesses and residences. Even with the abandonment of the production facilities at the close of the War, the surrounding towns remained populated throughout the 1920s and 1930s.

Central Valley Project

The U.S. Bureau of Reclamation (USBR) constructed the Contra Costa Canal in the project site just prior to World War II. The Contra Costa Canal (with its subsidiary, the Clayton Canal) is a component of the Central Valley Project, a massive and innovative water project implemented to address the need for fresh water distribution for industrial, agricultural and residential use throughout California.

Construction of the Central Valley Project began in 1935 as a federal reclamation project, ensuring that the USBR would be the constructing agency and that the system would remain in federal ownership for the foreseeable future. The plan was composed of five units operating as an integrated system: the Shasta

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Dam, the Delta- Mendota Canal, the Friant Dam, the Friant-Kern Canal and the Contra Costa Canal. The Shasta Dam and the Delta-Mendota Canal operated together to store and deliver Sacramento River water as far south as Fresno County. The Friant Dam and the Friant Kern Canal also operated together to store San Joaquin River water to the southern extremes of the Central Valley. The Contra Costa Canal, the least integrated and smallest of the initial units, was designed to deliver water to farms, industries and homes in the Sacramento-San Joaquin Delta and northern Contra Costa County. The major initial units were finished in the early 1950s. In subsequent decades, the USBR has greatly expanded the system, adding or absorbing reservoirs, canals, pipelines, pumping plants, and other units.

During the construction of the Contra Costa Canal, smaller branches were built from the main canal to service more specific areas. The Clayton Canal was built between 1947 and 1948 and begins within the former United States Naval Weapons Station, Concord (CNWS), approximately 0.38 miles south of where Willow Pass Road runs under State Route 4. The Clayton Canal, while no longer in use, is approximately 4.8 miles long.

Both canals have a series of bridges and culverts, which facilitate crossing the roadways and railroad crossings over those canals. JRP Historical Consulting recorded and evaluated 13 bridges in the project site.^{23,24} Four bridges, constructed mainly out of timber, were built to carry farm vehicles only. The remaining nine bridges, erected by the USBR or the Navy, were constructed with concrete and steel, and were meant to carry heavy duty military vehicles and rail road cars.

World War II Era: 1942 to 1945

With the bombing of Pearl Harbor, American military officials and political leaders oversaw an unprecedented expansion of America's military facilities as they sought to transform outdated and inadequate military installations into a functioning modern wartime machine. The Navy established Naval Magazine Port Chicago (NMPC) in February 1942, naming it after the adjacent town. The facility was the first new naval depot designed to specialize in ammunition transshipment for use in overseas combat, and planned as a permanent addition to the Navy's shore establishment, rather than simply a temporary wartime facility. NMPC received ammunition manufactured and tested at the remote inland naval ammunition depot located in Hawthorne, Nevada. Initially, the facility was responsible for some assembly and quality control, but served mostly as an ordnance storage, maintenance and loading point for the growing Pacific Fleet.

NMPC was established as a subordinate command to the sole existing ammunition transshipment point for the 12th Naval District, the depot at Mare Island. Upon opening, the station boundaries encompassed 640 acres of tideland on the south side of Suisun Bay, approximately midway between Martinez and Pittsburg. By November 1942 the original facilities were in place, including an ammunition pier, a barge

²³ JRP Historical Consulting, 1998, Inventory and Evaluation of National Register Eligibility of Cold War Era and Selected Other Buildings and Structures, Naval Weapons Support Facility, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for the U.S. Army Corps of Engineers.

²⁴ JRP Historical Consulting, 2013, Historic Building Inventory and Evaluation Update Report Inland Area, Concord Naval Weapons Station, Contra Costa County, California. Prepared for NAVFAC SOUTHWEST.

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pier, barricaded railroad sidings, storage buildings, housing for officers and enlisted men, guard buildings, a commissary, and an administrative building.

Throughout the years of 1944 and 1945 the facility expanded inland, where numerous barricaded sidings, magazines, storehouses, and auxiliary buildings were constructed to accommodate military personnel. During this period, the Navy also added to the size of the tidal area by condemning roughly 600 acres for the construction of a recreational building, bachelor officers' quarters and additional barracks and mess facilities.

Shortly after completion of this second phase of growth, the station suffered the largest domestic war-related loss of life during World War II, when a massive explosion occurred on the piers. On July 17, 1944, while sailors were loading ammunition onto waiting vessels, two explosions completely destroyed Pier #1, sinking two docked ships, and killing 320 military personnel, primarily African American stevedores and longshoremen. An additional 390 civilians and military personnel were injured. In the weeks following the explosion, many of the surviving ammunition loaders refused to load waiting ships, leading to the infamous "Port Chicago Mutiny" that resulted in the court martial, conviction and imprisonment of 50 enlisted men.

Despite the controversy, the Navy worked quickly to bring the facility back into service and by the closing months of 1944 six deep-water berths along a new ammunition pier, Pier #2, were ready to receive ships. Another pier, Pier #3, soon followed. By 1945, NMPC also included active facilities inland, including 75 high-explosive magazines located in the hills, a group of 93 gun-ammunition magazines on the flat land, and 30 barricaded sidings built along sidings fanning out amidst the hills. The new piers, new construction and expanded storage areas soon enabled the base to take over the functions of the old Mare Island ammunition depot.

At the close of World War II, the Bureau of Ordnance reported that NMPC "had become the principal ammunition loading port and storage point for ammunition and high explosives on the Pacific Coast." The Bureau also noted that the station was unusual in the diversity of ordnance it handled. While other stations loaded greater quantities of ammunition, few were capable of handling as many distinct types of ammunition. The primacy of NMPC's role in supplying the Pacific Fleet throughout World War II assured the station a continued strategic place in the years following the war. Despite some diminishments of scale, for example the installation of only 55 sidings for rail cars rather than the originally slated 550, the facility remained a powerful and fully functioning station as the United States entered a new political and militaristic era: the Cold War.

Cold War Era: 1946 to 1989

During the early years of the Cold War (1946 to 1963), the NMPC served as a weapons storage facility providing support to the naval fleet. By 1946, NMPC had become the principal loading and storage point for ammunition and high explosives on the West Coast. Further, it existed as the Navy's sole high explosives loading facility on the west coast that was located in a relatively remote area. Depots at Mare Island, Puget Sound, and San Diego were all situated in close proximity to densely populated areas and thus faced greater political and social pressures, as well as expansion challenges.

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During the Korean War of 1950 to 1953, NMPC handled 75 percent of all ammunition sent to U.S. forces in the Korean Peninsula. The NMPC installation became the Naval Ammunition Depot Concord (NAD, Concord), replacing NAD, Mare Island, which was in turn reclassified as the Mare Island Annex. NAD, Concord's ascendancy to independent command was accompanied by technological advancements in weapons. In July 1963, NAD, Concord was again re-designated, this time with its most recent identification of CNWS). The CNWS participated in several Department of Defense programs, such as the Polaris Fleet Ballistic Missile Program, Air-launched Missile Programs, and the Special Weapons Program. The installation also boasted an Advanced Weapons Division and a Guided Missile Facility.

During the Vietnam War years (1964 to 1972), CNWS continued to provide support for military efforts, including the transshipment of ordnance, and other supplies, to U.S. troops in all branches of the military serving in Southeast Asia. Deliveries often included mail, water, and personnel transfers. In support of the war, the station processed as much as 100,000 tons of munitions each month. Citing concern for the civilian population in the event of an explosion similar to that during World War II, the Navy succeeded in condemning the town of Port Chicago as part of its program to provide a buffer zone around the depot. The following year, with the inhabitants relocated, the Navy razed nearly all of the buildings and structures in the town.

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, and maintaining and assembling missiles. The CNWS included three ammunition piers, about 200 ammunition magazines and more than 150 buildings by this time, and infrastructure included 75 miles of paved roads and over 100 miles of railroad track.

Due to the end of the Cold War in 1989 and the subsequent cessation of the military's demands for personnel and material, the station saw a reduction in workforce and volume of ordnance shipped and stored. The station's value to the Navy was still acknowledged and the CNWS survived multiple rounds of base closure (BRAC) determinations that shuttered many military facilities across the United States. In November 2005, however, the CNWS was recommended for partial closure and realignment. The final BRAC determination resulted in closure at the end of 2008.

ESA completed a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System on March 5, 2015 (File No. 14-1164). The District also provided completed cultural resources studies not on file at the NWIC. The purpose of the background research was to (1) determine whether site conditions have changes since the completion of the most recent cultural resources studies; and (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites.

The known potential cultural resources within the project site include ten archaeological sites, two isolated finds, approximately 35 buildings and structures, and numerous ammunition magazines. As detailed below, of these resources, one built structure (the Contra Costa/Clayton Canal) is listed in the National and California Registers as a contributing element to the Central Valley Project, and one archaeological site has been recommended eligible for listing.

The remaining historic-era archaeological sites, prehistoric isolated finds, and built environment resources (including magazines, main and auxiliary buildings, bridges, railroads, water storage facilities, tunnels, and

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a small mine) are not included in or do not meet the eligibility criteria for listing in the National or California Registers.

Architectural and Structural Resources

Previous Studies

Several previous studies have been completed regarding cultural resources of the built environment in the project site. The most recent and comprehensive of these studies was *Final Historic Building Inventory and Evaluation Update Report, Concord Naval Weapons Station Contra Costa County, California* completed in April 2013 for the CNWS BRAC.²⁵ That report provided a summary of two studies completed in the 1990s.

JRP Historical Consulting²⁶ also completed an earlier inventory and evaluation of Cold War era, and several World War II era buildings and structures in *Inventory and Evaluation of National Register Eligibility of Cold War Era and Selected Other Buildings and Structures, Naval Weapons Support Facility*. That report included a historical context for Cold War development and evaluated 375 buildings and structures. JRP Historical Consulting found none eligible for listing in the National Register.

William Self Associates²⁷ evaluated World War II era buildings and structures in *Cultural Resources Overview, Naval Weapons Station Concord, Contra Costa County, California*. This study included an inventory and evaluation of 506 World War II-era buildings and structures located at the CNWS. Only the Port Chicago National Memorial located in the CNWS tidal area was recommended eligible for listing in the National Register.

Known Resources and Significance Evaluation

As a result of the above inventories, a total of 422 cultural resources of the built environment were evaluated within the greater inland area of the CNWS. Approximately 35 buildings and structures as well as numerous ammunition magazines are within the project site. Primarily naval buildings and structures, the categories were divided by construction during World War II or the Cold War and included earth-covered ammunition magazines, ordnance handling facilities, unused warehouses, administrative buildings, barracks, other military-related buildings, and the system of rail lines. JRP Historical Consulting (2013) recommended that none of the buildings or structures meet the criteria for listing in the National or California Registers. The evaluators noted that “while it is apparent that the...CNWS played a substantive role in major military campaigns of the second half of the twentieth century, this role does not

²⁵ JRP Historical Consulting, 2013, Historic Building Inventory and Evaluation Update Report Inland Area, Concord Naval Weapons Station, Contra Costa County, California. Prepared for NAVFAC SOUTHWEST.

²⁶ JRP Historical Consulting, 1998, Inventory and Evaluation of National Register Eligibility of Cold War Era and Selected Other Buildings and Structures, Naval Weapons Support Facility, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for the U.S. Army Corps of Engineers.

²⁷ William Self Associates, 1993, Cultural Resources Overview, Naval Weapons Station Concord, Contra Costa County, California. Prepared for Department of the Navy.

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meet the high threshold of importance necessary to convey direct historical significance” and that the “accompanying lack of integrity further hinders any demonstration of significance.”²⁸

The Contra Costa Canal (and extension Clayton Canal) has been previously recommended as eligible for listing in the National and California Registers as contributors to the Central Valley Project.²⁹ The State Historic Preservation Officer concurred with this recommendation in March 2005 (FHWA050131A; OHP, 2012). The Canal was described as an “original and integral unit of the Central Valley Project” and was determined of historic significance at the state level as a part of the Central Valley Project and at the local level for its importance in the economic and industrial development of eastern Contra Costa County.

Within the project site, there is one bridge and two culverts over the Contra Costa Canal. Built by either the Bureau of Reclamation or the Navy, JRP Historical Consulting³⁰ evaluated these structures, and recommended them as not eligible for listing in the National or California Registers, either individually or as contributing elements to the Central Valley Project.

Archaeological Resources

Previous Studies

Numerous archaeological resources studies were conducted within the project site between 1989 and 2014. The most recent intensive-level surface survey was completed in 2007³¹ in support of the CNWS BRAC. During that study a total of 5,197 acres were surveyed, including 4,158 acres intensively surveyed in walking transects spaced at no more than 25-meter intervals and 1,039 acres surveyed with a more mixed strategy within the steeply sloped upland region, focusing on ridges, mid-slope terraces, and watercourses. The goal of the survey was to revisit all previously recorded archaeological sites and document previously unrecorded historic-era and prehistoric archaeological sites and artifacts.

ASM Affiliates subsequently completed archaeological testing, as documented in the National Register of Historic Places *Evaluation of 21 Archaeological Sites in Support of the Environmental Impact Statement for Disposal and Reuse of the Former Naval Weapons Station*.³² In the project site, the evaluation efforts included subsurface archaeological testing at one prehistoric archaeological site and a combined rural landscape study and subsurface testing at four historic-era archaeological sites.

²⁸ JRP Historical Consulting, 2013, Historic Building Inventory and Evaluation Update Report Inland Area, Concord Naval Weapons Station, Contra Costa County, California, page 63. Prepared for NAVFAC SOUTHWEST.

²⁹ JRP Historical Consulting, 2002, Department of Parks and Recreation Form 523 – Contra Costa Canal.

³⁰ JRP Historical Consulting, 2009, Department of Parks and Recreation Form 523 – CCC/Clayton Canal Bridges and Culverts.

³¹ ASM Affiliates, 2008, Final Report for Concord Inland BRAC Disposal Archeological Survey, Naval Weapons Stations, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for Navy Base Realignment and Closure Program Management Office West.

³² ASM Affiliates, 2014, National Register of Historic Places Evaluation of 21 Archaeological Sites in Support of the Environmental Impact Statement for Disposal and Reuse of the Former Naval Weapons Station, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for Navy Base Realignment and Closure Program Management Office West.

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Known Resources and Significance Evaluation

Nine historic-era archaeological sites, one prehistoric archaeological site, and two prehistoric isolated finds were identified on the project site during the 2007 surface survey of the CNWS. Of these resources, five historic-era sites and both prehistoric isolated finds were immediately recommended not eligible for listing in the National or California Registers and no further consideration of these resources was completed.³³

Five resources in the project site were subject to additional testing and evaluation.³⁴ These resources included a prehistoric site (P-07-000861), the remains of a historic-era residence with outbuildings (CA-CCO-777H), a series of historic-era concrete foundations and artifacts possibly associated with dairy farming (CA-CCO-787H), a historic-era foundation and artifact scatter (CA-CCO-791H), and a historic-era stone cistern with an associated artifact scatter and windmill (P-07-000860).

Testing at prehistoric site P-07-000861 demonstrates a high data potential with respect to ethnographic and prehistoric research.³⁵ ASM Affiliates recommended P-07-000861 eligible for National Register listing under Criterion A (associated with events significant to the broad patterns of our history) and Criterion D (has yielded and is likely to yield information important to prehistory). A MOA between the Navy, the City of Concord, the District, and the SHPO concluded that P-07-000861 is eligible for listing in the National Register and is therefore a historic property for the purposes of the National Historic Preservation Act. P-07-000861 is also considered eligible for listing in the California Register and therefore is a historical resource for the purposes of CEQA.

ASM Affiliates also evaluated the four historic-era resources in the project site (CA-CCO-777H, CA-CCO-787H, CA-CCO-791H, and P-07-000860) for National Register eligibility as part of a rural historic landscape study and archaeological testing program. The evaluation included 14 additional resources (totaling 18 historic-era resources in all) located within the greater inland area of the CNWS. Previously, researchers had recommended that the combination of historic features at P-07-000860 (a historic-era cistern with an associated artifact scatter and windmill) might be potentially significant.³⁶ Collectively, P-07-000860 as well as the other 17 evaluated sites were determined to not contain “sufficient information capable of collectively conveying a sense of the processes or components of a rural historic landscape that would be

³³ ASM Affiliates, 2008, Final Report for Concord Inland BRAC Disposal Archeological Survey, Naval Weapons Stations, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for Navy Base Realignment and Closure Program Management Office West.

³⁴ ASM Affiliates, 2014, National Register of Historic Places Evaluation of 21 Archaeological Sites in Support of the Environmental Impact Statement for Disposal and Reuse of the Former Naval Weapons Station, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for Navy Base Realignment and Closure Program Management Office West.

³⁵ ASM Affiliates, 2014, National Register of Historic Places Evaluation of 21 Archaeological Sites in Support of the Environmental Impact Statement for Disposal and Reuse of the Former Naval Weapons Station, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for Navy Base Realignment and Closure Program Management Office West.

³⁶ ASM Affiliates, 2008, Final Report for Concord Inland BRAC Disposal Archeological Survey, Naval Weapons Stations, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for Navy Base Realignment and Closure Program Management Office West, page 9-15.

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associated with late nineteenth through mid-twentieth-century agriculture.”³⁷ Additionally, the lack of integrity at most of the sites and the absence of features that would support a rural historic landscape did not represent the characteristics of a rural historic landscape. Therefore, the collective evaluation of the 18 historic-era archaeological sites as a potential rural historic landscape did not contain sufficient information for National Register eligibility. No further consideration of these resources is necessary as the resources are not considered historic properties for the purposes of the National Historic Preservation Act or historical resources for the purposes of CEQA.

4.4.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant impact to cultural resources if it would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.
3. Disturb any human remains, including those interred outside of formal cemeteries.
4. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074.

4.4.3 IMPACT DISCUSSION

CULT-1	The project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.
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The following focuses on architectural and structural resources. Archaeological resources, including those that are potentially historical resources according to CEQA Guidelines Section 15064.5, are addressed under Impact CULT-2, below.

Potential impacts on architectural resources are assessed by identifying any activities associated with implementation of the proposed Plan, such as new construction, demolition, or substantial alteration that could affect resources that have been identified as historical resources for the purposes of CEQA. Individual properties and districts identified as historical resources under CEQA include those that are significant because of their association with important events, people, or architectural styles or master architects, or for their informational value (National Register and California Register Criteria A/1, B/2, C/3, and D/4) and that retain sufficient historic integrity to convey their significance. Criterion D/4, however, is typically applied to the evaluation of archaeological resources and not to architectural resources, as

³⁷ ASM Affiliates, 2014, National Register of Historic Places Evaluation of 21 Archaeological Sites in Support of the Environmental Impact Statement for Disposal and Reuse of the Former Naval Weapons Station, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for Navy Base Realignment and Closure Program Management Office West.

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described below. Once a resource has been identified as significant, it must be determined whether the impacts of the project would “cause a substantial adverse change in the significance” of the resource (CEQA Guidelines Section 15064.5[b]). A substantial adverse change in the significance of a historical resource means “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of [the] historical resource would be materially impaired” (CEQA Guidelines Section 15064.5[b][1]). A historical resource is materially impaired through the demolition or alteration of the resource’s physical characteristics that convey its historical significance and that justify its inclusion in (or eligibility for inclusion in) the California Register or a qualified local register (CEQA Guidelines Section 15064.5[b][2]).

JRP Historical Consulting³⁸ recommended that none of the buildings or structures in the project site are eligible for listing in the National or California Registers because “while it is apparent that the... CNWS played a substantive role in major military campaigns of the second half of the twentieth century, this role does not meet the high threshold of importance necessary to convey direct historical significance” and that the “accompanying lack of integrity further hinders any demonstration of significance.”³⁹ No further consideration of these resources is necessary for the proposed project.

The Contra Costa Canal (and extension Clayton Canal) has been previously recommended eligible for listing in the National and California Registers as a contributor to the Central Valley Project.⁴⁰ Since these resources are owned separately, previously by the Bureau of Reclamation and, as of March 2019, in the process of being transferred to the Contra Costa Water District⁴¹, they would not be impacted by the proposed project. No further consideration of these structures is necessary for the proposed project.

As there are no historical resources in the project site, the impact would be *less than significant* and no mitigation is required.

Significance without Mitigation: *Less than significant.*

CULT-2	The project could cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.
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This section discusses archaeological resources that are potentially historical resources according to CEQA Guidelines Section 15064.5, as well as unique archaeological resources defined in Section 21083.2(g).

The significance of most prehistoric and historic-period archaeological sites is usually assessed under National Register and California Register Criterion D/4. This criterion stresses the importance of the information potential contained within the site, rather than its significance as a surviving example of a

³⁸ JRP Historical Consulting, 2009, Department of Parks and Recreation Form 523 – CCC/Clayton Canal Bridges and Culverts.

³⁹ JRP Historical Consulting, 2013, Historic Building Inventory and Evaluation Update Report Inland Area, Concord Naval Weapons Station, Contra Costa County, California, page 63. Prepared for NAVFAC SOUTHWEST.

⁴⁰ JRP Historical Consulting, 2002, Department of Parks and Recreation Form 523 – Contra Costa Canal.

⁴¹ John D. Dingell, Jr. Conservation, Management, and Recreation Act. S. 47, 116th Cong. (2019).

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type or its association with an important person or event. Archaeological resources may qualify as historical resources under the definition provided in CEQA Guidelines Section 15064.5[a], or they may also be assessed under CEQA as unique archaeological resources, defined as archaeological artifacts, objects, or sites that contain information needed to answer important scientific research questions (PRC Section 21083.2). A substantial adverse change in the significance of an archaeological resource is assessed similarly to other historical resources, i.e., whether the project would result in destruction or adverse material alteration of those physical resource characteristics that convey its significance under the appropriate criteria (CEQA Guidelines Section 15064.5[b][2]).

The proposed Regional Park would include bicycle and pedestrian trails and promotes recreational activities. These activities could result in direct and indirect impacts to a prehistoric archaeological resource (P-07-000861), which has been recommended as eligible for listing in the National and California Registers.⁴² Impacts could include vandalism, destruction, theft, and other actions that could adversely affect the site.

In accordance with Mitigation Measure Cultural Resources 2 of the Concord Reuse Plan EIR, the proposed Plan has been developed in accordance with the restrictions set forth in the Concord Reuse Plan EIR's mitigation to control public access including designing bicycle and pedestrian trails, signs, and other recreation facilities to avoid direct impacts to P-07-000861, thereby preserving and avoiding the site. Trails and signs would be designed and vegetation employed to minimize indirect effects. The executed MOA provisions for a 50-foot-wide buffer around the site in a habitat conservation area that will be restricted from public access.

While no other recorded significant archaeological resources have been identified in the project site through the background research and intensive surface survey, the discovery of unknown resources cannot be entirely discounted because archaeological resources may be buried or otherwise obscured with no surface manifestation. Comprehensive subsurface investigation of the project site is not feasible or practicable and could have other environmental impacts (e.g. biological, geological). Therefore, while unlikely, the inadvertent disturbance to unknown archaeological resources would be a *potentially significant* impact.

Significance without Mitigation: *Potentially significant.*

Impact CULT-2: Implementation of the proposed Plan could result in the inadvertent disturbance to unknown archaeological resources. This would be a potentially significant impact.

Mitigation Measure CULT-2: Preconstruction Training, Archaeological Monitoring, and Inadvertent Discovery of Archaeological Resources. Prior to construction, a qualified archaeologist with expertise in California archaeology will develop an archaeological resources training program for all construction and field workers involved in ground-disturbing activities that details the recognition and importance of archaeological resources, and establishes accidental discovery procedures should

⁴² ASM Affiliates, 2014, National Register of Historic Places Evaluation of 21 Archaeological Sites in Support of the Environmental Impact Statement for Disposal and Reuse of the Former Naval Weapons Station, Seal Beach, Detachment Concord, Contra Costa County, California. Prepared for Navy Base Realignment and Closure Program Management Office West.

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archaeological resources be encountered during construction. Project personnel would be provided the detailed information of who to contact at the District if resources are encountered.

In accordance with the executed MOA, archaeological monitoring is necessary when ground-disturbing activities occur within or adjacent to the boundaries of any National Register-eligible historic properties, including prehistoric site P-07-000861. Monitoring is not necessary in other portions of the project site. Monitoring should be conducted by a qualified archaeological monitor that meets the standards of the Register of Professional Archaeologists.

If an archaeological resource is encountered, all activity within 100 feet of the find should immediately halt until it can be evaluated by a qualified archaeologist (and a Native American representative if the artifacts are prehistoric). Prehistoric archaeological materials include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. If the archaeologist (and Native American representative) determines that the resources may be significant, they shall notify the East Bay Regional Park District (District). The archaeologist shall consult with Native American representatives in determining appropriate treatment for prehistoric or Native American cultural resources.

In considering any suggested mitigation proposed by the archaeologist and Native American representative, the District shall determine whether avoidance is feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is not feasible, other appropriate measures (e.g., capping, data recovery, and/or interpretation as agreed upon between the District, the archaeological consultant, and Native American representatives) shall be instituted. In accordance with PRC 15126.4(b)(3)(C) when data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Work may proceed in other parts of the project site while mitigation for archaeological resources is being carried out.

Significance with Mitigation: *Less than significant.*

CULT-3	The project could disturb human remains, including those interred outside of formal cemeteries.
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Human remains, including those buried outside of formal cemeteries, are protected under state law, including PRC Section 5097.98 and Health and Safety Code Section 7050.5. These laws are identified above in the State Laws and Regulations section. This analysis considers impacts including intentional disturbance, mutilation, or removal of interred human remains.

Prehistoric archaeological resources may contain human burials. While there are no known locations of prehistoric human burials or remains in the project site, the possibility of encountering human remains cannot be entirely discounted.

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Potential project-related disturbance of human remains would be a *potentially significant* impact.

Significance without Mitigation: *Potentially significant.*

Impact CULT-3: Implementation of the proposed Plan could result in the accidental discovery of human remains. This would be a potentially significant impact.

Mitigation Measure CULT-3: Inadvertent Discovery of Human Remains. If human skeletal remains are uncovered during project construction, work shall immediately halt within 100 feet of the find. The District shall contact the Contra Costa County coroner to evaluate the remains and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines and Health and Safety Code Section 7050.5(c). If the County coroner determines that the remains are Native American, the District shall contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission would then identify the person(s) thought to be the most likely descendent of the deceased Native American, who would help determine what course of action should be taken in treating the remains (PRC Section 5097.98).

Significance with Mitigation: *Less than significant.*

CULT-4	The project could cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074.
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Impacts on TCRs are assessed in consultation with affiliated Native American tribes that have requested consultation in accordance with PRC Section 21080.3. This analysis considers whether the project would cause damaging effects to any TCR, including archaeological resources and human remains.

To help determine whether a project may have an effect on TCRs, PRC Section 21080.3.1(b)(1) requires that Native American tribes request to be on an agency's permanent tribal notification list. The San Manuel Band of Mission Indians sent a letter to East Bay Regional Park District requesting consultation on projects within their ethnographic territory, which is in Southern California outside of San Bernardino. The District responded that the project is in Contra Costa County and not within their ethnographic territory. The East Bay Regional Park District has not received any formal requests to be on a notification list from tribes in the geographic vicinity of the project site.

During the cultural resources studies completed for the CNWS BRAC, the Navy identified no rural historic landscapes, Traditional Cultural Properties, or Traditional Cultural Landscapes that meet the criteria for listing in the National Register in the CNWS or the project site. The Navy did identify two historic properties (both prehistoric archaeological sites) in the CNWS; one of these resources (P-07-000861), discussed above under Impact CULT-2, is located within the project site and, for the purposes of this EIR, is considered a TCR. As outlined in the executed MOA, the District will protect and preserve P-07-000861 within a habitat conservation area and there will be no impacts to the resource. There are no additional TCRs in the project site.

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During construction activities, it is possible that archaeological resources or human remains could be documented and determined to be TCRs, which would be a *potentially significant* impact.

Significance without Mitigation: *Potentially significant.*

Impact CULT-4: Construction activities during implementation of the proposed Plan could result in the discovery of archaeological resources or human remains and the determination that such discoveries are tribal cultural resources. This would be a potentially significant impact.

Mitigation Measure CULT-4: Implement Mitigation Measures CULT-2 and CULT-3.

Significance with Mitigation: *Less than significant.*

4.4.4 CUMULATIVE IMPACTS

CULT-5 The project would not contribute to significant cultural resource impacts.

The geographic scope of analysis for cumulative impacts on historical resources, archaeological resources, paleontological resources, TCRs, and human remains encompasses areas where development would occur in the vicinity of the project site. Projects in the geographic scope include the Concord Reuse Project, the Faria/Southwest Hills project, and the Keller Canyon Landfill Expansion project, as well as projects in the adjacent areas of Concord, Pittsburg, and Contra Costa County. In addition, construction for the Concord Reuse Project could occur at the same time as certain features of the proposed project in the same vicinity. This area was selected because of the similar themes of its Native American use, as well as prehistoric and historic-period use and associated cultural resources.

A cumulatively significant impact would result if incremental effects of the project, after implementation of mitigation, combined with the impacts of one or more cumulative projects, after implementation of their mitigation, were to cause a substantial adverse effect on the same cultural or paleontological resource.

There are no known historic architectural resources that qualify as historical resources in the project site; therefore, the project would not contribute to a significant cumulative effect on architectural historical resources.

There is one archaeological resource in the project site that is considered a historical resource. As discussed above, the project would avoid this resource. The project would have the potential to affect unknown archaeological resources, paleontological resources, tribal cultural resources, and human remains. However, there would not be the potential for the project and cumulative projects to affect the same undiscovered cultural or paleontological resources.

Federal, State, and local laws can generally protect cultural resources. Development in the geographic scope would be required to comply with the same provisions of CEQA and implement measures similar to those identified above (i.e., Mitigation Measure CULT-2 and Mitigation Measure CULT-3). These measures would require preconstruction training, monitoring in the vicinity of sensitive areas, and protocols for

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responding in the event of inadvertent discovery of archaeological resources, paleontological resources, or human remains.

Through compliance with applicable regulations and implementation of associated avoidance and minimization measures, the project would not have a considerable contribution to adverse effects on cultural resources of the region. This cumulative impact would be *less than significant*.

Significance without Mitigation: *Less than significant*.

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