Chapter 3
Impact Analysis

This Draft Environmental Impact Report (EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000 et seq.), the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.), and applicable rules and regulations of regional and local entities. This Draft EIR evaluates the potential environmental impacts associated with the construction and operation of two components that would be implemented by San Bernardino Valley Municipal Water District: the Upper Santa Ana River Tributaries Restoration Project, including four tributary restoration sites referred to as Anza Creek, Old Ranch Creek, Lower Hole Creek, and Hidden Valley Creek, and creation of a Mitigation Reserve Program. The proposed project, located in the cities of Riverside and Jurupa Valley and in Riverside County, would re-establish, enhance, rehabilitate, and/or preserve jurisdictional aquatic resource habitat and/or improve conditions for the Santa Ana sucker. This would be accomplished by improving conditions in existing channels, excavating new channels, restoring associated floodplain surfaces and habitats, controlling nonnative invasive species, supporting the existing local community environmental education and recreational opportunities at each of the sites, and establishing a Mitigation Reserve Program that would provide opportunities for additional restoration activities on each of the sites. This Draft EIR is intended to serve as an informational document for the public agency decision-makers and the public regarding the Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program that compose the proposed project.

Scope of the Environmental Impact Analysis

In accordance with Section 15126 of the State CEQA Guidelines, Chapter 3 provides an analysis of the direct and indirect environmental effects of the proposed project. These impacts are evaluated with respect to existing conditions at the time the NOP, along with the Initial Study, was published on July 11, 2018 (see Appendix D). The determination of whether an impact is significant is based on the significance thresholds and methodology identified for each environmental issue. This Draft EIR evaluates the implementation actions of the proposed project that would require development of four restoration sites and a Mitigation Reserve Program along the Santa Ana River in Riverside County.

In accordance with Appendix G of the State CEQA Guidelines, this chapter assesses the proposed project’s potential effects on the following environmental resources:

- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Population and Housing
- Recreation
- Tribal Cultural Resources
- Utilities and Service Systems
Approach to Environmental Analysis

Sections 3.1 through 3.13 of this Draft EIR contain discussions of the environmental setting, regulatory framework, and potential impacts related to construction and operation of the proposed project components. This section will evaluate the potential environmental effects of the proposed project. The environmental analyses will estimate the impacts on each resource category before the implementation of mitigation measures. The analyses will then estimate the impacts on each resource category after the implementation of mitigation measures. Additional information regarding CEQA and the CEQA process is provided in Section 1.5, CEQA Environmental Review Process, specifically Section 1.5.2 for written comments provided during the Notice of Preparation and Initial Study. Refer to Section 1.5.4, Draft EIR, for significance criteria for the impact analysis, and Section 1.5.5, Level of CEQA Analysis in this Draft EIR, for the level of impact analysis expected in this EIR for the two major project components. As stated previously in Chapter 1, Introduction, this Draft EIR evaluates the impacts related to implementing the Tributaries Restoration Project and Mitigation Reserve Program Phase I at a project-specific level and evaluates the Expanded Mitigation Reserve Program Phase II component of the proposed project at a programmatic level given the additional restoration opportunities at each of the sites have not been fully developed at the construction level of detail. The analysis separates the two distinct project components and provides conclusion statements and mitigation, as applicable, for each project component.

The discussion of cumulative impacts and the potential for the proposed project to have significant cumulative effects when combined with other past, present, and reasonably foreseeable future projects in each resource area's cumulative geographic scope is provided in Chapter 4, Cumulative Impacts. Chapter 7, Alternatives Analysis, describes the alternatives to the proposed project that were considered and provides the analysis in comparison with the proposed project.
3.1 Agricultural and Forestry Resources

This section focuses on agricultural resources. This section identifies the regulatory requirements applicable to agricultural resources and describes the existing land use conditions in relation to farmland designations, and related uses. The section then evaluates the project’s potential impacts on local agricultural resources. There are no Williamson Act contracts and forest and timberland resources located within the project area; therefore, these resources are not discussed in this section. For further discussion of these impacts found to be less than significant and eliminated from further discussion on that basis, refer to Chapter 6, Effects Not Found Significant.

For purposes of this section, agricultural resources are any natural resources relevant to agriculture including, but not limited to, land, soil, and water and the conveyances of water, for the purposes of producing crops and raising livestock.

3.1.1 Regulatory Setting

Federal

Federal regulations are generally applicable to a project if it involves a federal agency license, permit, approval, or funding, and/or crosses federal lands.

Farmland Protection Policy Act

Congress established the Farmland Protection Policy Act (FPPA) in 1981 to minimize the extent to which federal actions contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. The FPPA ensures that federal programs are compatible with state and local governments, and private programs and policies to protect farmland. The Natural Resources Conservation Service (NRCS) of the U.S. Department of Agriculture is the primary agency responsible for implementing and administering the FPPA. The Farm and Ranch Lands Protection Program (FRPP) and a corresponding rating system (Land Evaluation and Site Assessment) are part of the FPPA. Land Evaluation and Site Assessment is used as a tool to determine agricultural suitability of land compared to demands created by non-agricultural uses of the land. The FRPP is a voluntary program that provides funding to state, local, and tribal government entities and nongovernmental organizations with existing farmland protection programs to purchase conservation easements. A minimum 30-year term is required for conservation easements, of which the NRCS provides up to 50 percent of the fair market value of the easements. Participating agencies and organizations agree to keep their land designated as agricultural use and retain all property rights for future agricultural use. The requirements of the FRPP would apply if the proposed project resulted in the conversion of farmland.

State

Farmland Mapping and Monitoring Program

The California Department of Conservation established the Farmland Mapping and Monitoring Program (FMMP) in 1982 to provide a consistent and impartial analysis of agricultural land use and land use conversion throughout California. The FMMP identifies farmlands in the state based on
current land use information and soil survey data on soil characteristics that best support crop
production as compiled by the U.S. Department of Agriculture and the NRCS.

The Department of Conservation maintains the FMMP and monitors the conversion of farmland to
and from agricultural use through its Important Farmland Inventory System. Farmlands are divided
into the following categories based on their suitability for agriculture:

- **Prime Farmland**: This land has the best combination of physical and chemical characteristics
  (e.g., soil quality, growing season, moisture supply) for the long-term production of crops in high
  yields. This land must have also been used for irrigated agricultural production at some time
during the 4 years prior to the mapping date.

- **Farmland of Statewide Importance**: This land does not meet the criteria for Prime Farmland,
  but has a good combination of physical and chemical characteristics, albeit with minor
  shortcomings, such as greater slopes or less ability to store moisture. This land must also have
  been under irrigated production during the prior mapping date. Per the Riverside County
  General Plan, this category can include forest land, in addition to crop land, pastureland,
rangeland, and other lands that are not urban or water.

- **Unique Farmland**: This is land other than the above categories that is currently used for the
  production of specific high-value food and fiber crops, such as citrus, avocados, and vegetables.
  This land may have lesser quality soils, but still has the combination of traits needed to produce
  high quality or high yields of specific crops. This category may include non-irrigated orchards or
  vineyards, as well as citrus, olives, avocados, or grapes, among others. The land must also have
  been cropped at some time during the prior mapping date.

- **Farmland of Local Importance**: This land does not generally qualify for any of the above
  categories, but has been deemed locally important by the Riverside County Board of
  Supervisors. This land may also have been suitable for “Prime” or “Statewide Importance”
designation, but for the lack of available irrigation water. The category can include lands in
production of major, but not unique, crops, as well as dairy lands and agricultural zones
(including contract lands and those in jojoba production).

- **Grazing Land**: This includes lands with existing vegetation that are suited to grazing livestock.

- **Other Land**: This refers to land not included in any other category. Commonly, this includes
  low-density rural developments (with five subcategories); brush and timberlands; wetlands and
  riparian areas; confined livestock, poultry, or aquaculture facilities; strip mines; etc. Also
  included are water bodies covering fewer than 40 acres and agricultural lands of fewer than
  40 acres when surrounded by urban uses.

**Regional and Local**

**County of Riverside**

**County of Riverside General Plan**

**Multipurpose Open Space Element**

The County of Riverside recognizes the high socioeconomic value that agriculture has within the
County. The two major conservation rationales noted in the General Plan are to maintain the
viability of the agricultural industry and to preserve the resource represented by farmland—its
productive soils and its secondary role as an open space amenity. The Riverside County General Plan Multipurpose Open Space Element (County of Riverside 2015a) contains policies relevant to agricultural resources.

**OS 7.2:** In cooperation with individual farmers, farming organizations, and farmland conservation organizations, the County of Riverside shall employ a variety of agricultural land conservation programs to improve the viability of farms and ranches and thereby ensure the long-term conservation of viable agricultural operations within Riverside County. The County of Riverside shall seek out available funding for farmland conservation. Examples of programs which may be employed include: land trusts; conservation easements (under certain circumstances, these may also provide federal and state tax benefits to farmers); dedication incentives; Land Conservation Contracts; Farmland Security Act contracts; the Agricultural Land Stewardship Program Fund; agricultural education programs; transfer and purchase of development rights; providing adequate incentives (e.g. clustering and density bonuses) to encourage conservation of productive agricultural land in Riverside County’s Incentive Program; and providing various resource incentives to landowners (e.g. establish a reliable and/or less costly supply of irrigation water). (AI 78)

The County of Riverside shall establish a Farmland Protection and Stewardship Committee and the Board of Supervisors shall appoint its members. The Committee shall include members of the farming community as well as other individuals and organizations committed to farmland protections and stewardship. The Committee shall develop a strategy to preserve agricultural land within Riverside County and shall identify and prioritize agricultural lands for conservation. This strategy shall not only address the preservation of agricultural land but shall also promote sustainable agriculture within Riverside County. In developing its strategy, the Committee shall consider an array of proven techniques and, where necessary, adapt these techniques to address the unique conditions faced by the farming community within Riverside County. Riverside County staff shall assist the Committee in accomplishing its task. Riverside County Departments, that may be called upon to assist the Committee, include, but are not limited to the following: the Agricultural Commissioner, Planning Department, Assessor's Office and County Counsel. In developing its strategy, the Committee shall consult government and private organizations with expertise in farmland protection. These organizations may include, but are not limited to, the following: USDA Natural Resources Conservation Service; State Department of Conservation and its Division of Land Resource Protection; University of California Sustainable Agriculture Research and Education Program; the University of California Cooperative Extension; The Nature Conservancy; American Farmland Trust; The Conservation Fund; the Trust for Public Land; and the Land Trust Alliance.

The Committee shall, from time to time, recommend to the Board of Supervisors the adoption of policies and/or regulation that it finds will further the goals of the farmland protection and stewardship. The Committee shall also advise the Board of Supervisors regarding proposed policies that curb urban sprawl and the accompanying conversion of agricultural land to urban development, and that support and sustain continued agriculture. Planning policies that may benefit farmland conservation and fall within the purview of the Committee for review include measures to promote efficient development in and around existing communities including clustering, incentive programs, transfer of development rights, and other planning tools.

**OS 7.3:** Encourage conservation of productive agricultural lands and preservation of prime agricultural lands.

**OS 7.4:** Encourage landowners to participate in programs that reduce soil erosion, improve soil quality, and address issues that relate to pest management. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, UC Cooperative Extension, and other agencies and organizations.

**OS 7.5:** Encourage the combination of agriculture with other compatible open space uses in order to provide an economic advantage to agriculture. Allow by right, in areas designated Agriculture, activities related to the production of food and fiber, and support uses incidental and secondary to the on-site agricultural operation.
Land Use Element

The County considers widespread and diverse agriculture lands to be one of the most important land uses in terms of historic character and economic strength. The Riverside County General Plan Land Use Element (County of Riverside 2017a) contains policies relevant to agricultural resources.

**LU 20.1:** Encourage retaining agriculturally designated lands where agricultural activity can be sustained at an operational scale, where it accommodates lifestyle choice, and in locations where impacts to and from potentially incompatible uses, such as residential uses, are minimized, through incentives such as tax credits.

**LU 20.2:** Protect agricultural uses, including those with industrial characteristics (dairies, poultry, hog farms, etc.) by discouraging inappropriate land division in the immediate proximity and allowing only uses and intensities that are compatible with agricultural uses.

**Policy LU 20.4:** Encourage conservation of productive agricultural lands. Preserve prime agricultural lands for high-value crop production.

**Policy LU 20.5:** Continue to participate in the California Land Conservation Act (the Williamson Act) of 1965.

**Policy LU 20.6:** Require consideration of state agricultural land classification specifications when a 2.5-year Agriculture Foundation amendment to the General Plan is reviewed that would result in a shift from an agricultural to a non-agricultural use.

**Policy LU 20.7:** Adhere to Riverside County’s Right-to-Farm Ordinance.

**Policy LU 20.8:** Encourage educational and incentive programs in coordination with the Riverside County Agricultural Commissioner’s Office, the University of California Cooperative Extension Service, and the Riverside County Farm Bureau, that convey the importance of conserving watercourses and their associated habitat, as well as protective buffers for domestic and farm livestock grazing.

Jurupa Area Plan

The County of Riverside General Plan Jurupa Area Plan (County of Riverside 2015b) recognizes the Santa Ana River as an integral part of Riverside County’s multipurpose open space system while accommodating the demand for urban development. The County also seeks to recognize existing and future agricultural activities as important and vital components of the land use fabric of the area. Residential uses and certain types of agriculture are inherently incompatible and often lead to complaints by local residents of offending odors, noise, flies, and the like. Likewise, farmers and their land can be the targets of vandals, thieves, and trespassers. It is the intent of the Jurupa Area Plan to recognize agriculture as an important economic activity in the region and to accommodate those agricultural and dairy owners who wish to continue their operations in the future, through the following policies:

**JURAP 7.16** Require the replacement of ponds lost during the development of dairy lands.

**JURAP 10.1** Adhere to the Riverside County Right-To-Farm Ordinance and any subsequent ordinance assuring the ability of farmers to continue with long-established agricultural activities throughout the Jurupa Plan area.

County of Riverside Ordinances

**Ordinance No. 509 (Establishing Agricultural Preserves)**

Agricultural preserves are lands identified for, and devoted to, agricultural and compatible uses, and are established through resolutions adopted by the Riverside County Board of Supervisors. The
The purpose of this ordinance is to ensure that incompatible uses are not allowed within established agricultural preserves. It sets forth the powers of the County of Riverside in establishing and administering agricultural preserves pursuant to the California Land Conservation Act of 1965 (California Government Code Section 51200, et seq.). The ordinance also establishes “Uniform Rules” for the agricultural and compatible uses allowed in an agricultural preserve. Land uses not covered in the ordinance are prohibited within agricultural preserves.

**Ordinance No. 625 (Right to Farm)**

The purpose of this ordinance is to “conserve, protect and encourage the development, improvement and continued viability of agricultural land and industries for the long-term production of food and other agricultural products, and for the economic well-being of the county’s residents.” It seeks to “balance the rights of farmers to produce food and other agricultural products with the rights of nonfarmers who own, occupy or use land within or adjacent to agricultural areas.” Consequently, the ordinance includes regulations to reduce the loss of agricultural resources in Riverside County by limiting the circumstances under which agricultural operations may be deemed a “nuisance.” It states that an agricultural activity that has been operating for more than 3 years on a site (and assuming it was not a nuisance at the time it began) cannot be later classed as a public or private nuisance due to “any changed condition in or about the locality.” This prevents, for example, existing dairies from being targeted by odor complaints from residents of housing units constructed in the surrounding area 3 or more years after the dairy use began. Furthermore, it requires buyers of properties within 300 feet of any land zoned primarily for agricultural purposes to be given notice of the preexisting agricultural use and its right to continue.

**Resolution No. 84-526 (Riverside County Rules and Regulations Governing Agricultural Preserves)**

These rules and regulations were adopted pursuant to California Government Code Section 51231 to govern agricultural preserve procedures within Riverside County and to aid in implementation of the Williamson Act. The rules and regulations address procedures for the initiation, establishment, enlargement, disestablishment, and diminishment of agricultural preserves. To protect existing agricultural lands and agricultural preserves within Riverside County, Division VI of the rules require a Comprehensive Agricultural Preserve Technical Advisory Committee (CAPTAC) to review and report on land use proposals and applications related to agricultural preserves and advise the Riverside County Board of Supervisors on the administration of agricultural preserves, as well as Williamson Act contract-related matters. In particular, the CAPTAC is charged with reviewing any proposals for the diminishment or disestablishment of an agricultural preserve and providing its recommendations to the Board of Supervisors. Regarding diminishments and disestablishments, the CAPTAC reviews the following findings:

- Whether a notice of nonrenewal has been served pursuant to the Williamson Act, Section 401 of these rules.
- Whether the cancellation is likely to result in the removal of adjacent lands from agricultural use.
- Whether the proposed alternative use of land is consistent with the provisions of the Riverside County General Plan.
- Whether the cancellation will result in discontiguous patterns of urban development.
• Whether there is proximate non-contracted land that is both available and suitable for the use for which the contracted land is being proposed.

• Whether the development of the contracted land would provide more contiguous patterns of urban development than that of proximate non-contracted land.

City of Riverside

City of Riverside General Plan

Open Space and Conservation Element

Preserving and encouraging agriculture as an essential industry and a desirable open space use within the City will be carried out through the following objectives and policies (City of Riverside 2012):

**OS-3.1:** Promote and encourage agriculture as an essential industry and a desirable open space use. The Arlington Heights Greenbelt and La Sierra Lands (i.e., Rancho La Sierra) are important agricultural lands because of their high soil quality, favorable climate and low water costs.

**OS-3.2:** Identify land for retention and encouragement of agricultural use based on consideration of historic use, soil suitability, agricultural significance, prevailing parcel sizes and geographical associations.

**OS-3.4:** Encourage property owners to preserve citrus groves and implement public programs to provide incentives and other assistance to promote and protect citrus farming on prime agricultural lands.

**OS-3.9:** Coordinate programs to preserve agricultural lands with other public, private and non-profit organizations where feasible.

**OS-4.2:** Establish buffers and/or open space between agricultural and urban uses so that the potential impacts from urban development will be mitigated.

City of Riverside Municipal Code

According to Title 7, Noise Control, Section 7.10.020 of the City of Riverside Municipal Code, "agricultural property" means a parcel of real property that is developed for agricultural and incidental residential purposes and is located within any permitted zone. Common agricultural practices on agriculturally zoned or agriculturally designated lands are allowed in specific zones within the Riverside Municipal Code. The Residential Agricultural Zone (RA-5) in Title 19, Zoning, Chapter 19.100, Residential Zones, is established to provide areas where general agricultural uses can occur independently or in conjunction with a single-family residence, that preserves the agricultural character of the area. Other residential zoning designations allow for agricultural uses as secondary uses to the primary residential use within that zone.

City of Jurupa Valley

City of Jurupa Valley Draft General Plan

As described in the City of Jurupa Valley Draft General Plan (2017), the following policies outline the City's approach to agricultural uses:

**LUE 1.3:** Prime Farmland. Encourage conservation of designated Prime Farmland and productive agricultural lands.
LUE 1.4: Right-To-Farm. Adhere to the Riverside County Right-To-Farm Ordinance and any subsequent ordinance assuring the ability of farmers to continue with legally established agricultural activities.

LUE 1.5: Agricultural. Where it is determined by the City to be compatible, the City will allow new agricultural uses.

LUE 8.3: Protect Existing Legal Uses. Retain and enhance the integrity of legal, existing residential, commercial, agricultural, and open space areas by protecting them from encroachment of land uses that would result in significant, adverse impacts from noise, vibration, noxious fumes, glare, shading, and traffic.

LUE 10.8: City Buffer Areas. Use open space, hills, greenways, agricultural lands, parks, and riparian areas to help define the City’s character and views and to serve as land use buffers from adjacent cities.

COS 4.1: Support Agricultural Uses. Employ a variety of agricultural land conservation programs to improve the viability of farms and ranches and thereby ensure the long-term conservation of viable agricultural uses in cooperation with individual farmers, farming organizations, farmland conservation organizations, and the County.

COS 4.2: Agricultural Land Conversion. Discourage the conversion of productive agricultural lands to urban uses unless the property owner can demonstrate overarching Community-wide benefits or need for conversion.

COS 4.3: Compatible Uses. Encourage the combination of agriculture with other compatible uses to help with the production of food, fiber, and support uses incidental to the on-site agricultural operation. Provide an economic advantage to agriculture uses by allowing activities such as farm stores, retail sales of produce or wares, and related accessory uses.

City of Jurupa Valley Municipal Code

Chapter 5.55. Right-To-Farm Regulations, Sec. 5.55.050. - Policy.

A. No agricultural activity, operation or facility, or appurtenances thereof, conducted or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards, as established and followed by similar agricultural operations in the same locality, shall be or become a nuisance, private or public, due to any changed condition in or about, the locality, after the same has been in operation for more than three (3) years if it was not a nuisance at the time it began.

B. This section shall not invalidate any provision contained in the Health and Safety Code, Fish and Game Code, Food and Agricultural Code, or Division 7 (commencing with Section 13000) of the Water Code (Wat. Code Section 13000 et seq.), if the agricultural activity, operation, or facility, or appurtenances thereof, constitutes a nuisance, public or private, as specifically defined or described in any such provision.

C. This section is not to be construed so as to modify or abridge the state law set out in the California Civil Code relative to nuisances, but rather it is only to be utilized in the interpretation and enforcement of the provisions of city ordinances and regulations.

3.1.2 Environmental Setting

Regional Setting

Agriculture has historically been an important part of Riverside’s economy. According to the 2017 Agricultural Production Report issued by the Riverside County Agricultural Commissioner’s Office,
in 2017 the County's total gross agricultural valuation was roughly $1 billion ($997,347,000). This was a decrease of $52.7 million (5 percent) from the 2016 total (County of Riverside 2017b).

**Project Area Setting**

As described in Chapter 2, *Project Description*, the proposed project would occur within four sites: Hidden Valley Creek, Lower Hole Creek, Old Ranch Creek, and Anza Creek. Based on the FMMP Important Farmland maps, the project sites do not contain prime, unique, or statewide important farmlands. None of the project sites are designated as forest land or Timber Production Zones and do not contain any forestry resources. As shown on **Figure 3.1-1**, there is Farmland of Local Importance designated within the project site boundaries. However, none of these areas within the project sites are currently used for agricultural purposes. **Table 3.1-1** identifies the breakdown of designated Farmland of Local Importance within each project site and project component. There is a total of 26.42 acres of Farmland of Local Importance within three of the project sites, Old Ranch Creek, Lower Hole Creek, and Hidden Valley Creek. Of that total, 19.12 acres occur within the Expanded Mitigation Reserve Program Phase II sites and 7.3 acres occur within the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites. Of the Expanded Mitigation Reserve Program Phase II sites, there are approximately 13.92 acres in Hidden Valley Creek, 1.7 acres in Lower Hole Creek, and 3.5 acres in Old Ranch Creek. Within the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites, there are approximately 6.6 acres in Hidden Valley Creek, 0.35 acre in Lower Hole Creek, and 0.37 acre in Old Ranch Creek.

**Table 3.1-1. Agricultural Lands (Farmland of Local Importance) within the Proposed Project Sites**

<table>
<thead>
<tr>
<th>Project Site</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tributaries Restoration Project and Mitigation Reserve Program Phase I</strong></td>
<td></td>
</tr>
<tr>
<td>Old Ranch</td>
<td>0.37</td>
</tr>
<tr>
<td>Anza Creek</td>
<td>0.0</td>
</tr>
<tr>
<td>Lower Hole Creek</td>
<td>0.35</td>
</tr>
<tr>
<td>Hidden Valley Creek</td>
<td>6.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7.3</strong></td>
</tr>
<tr>
<td><strong>Expanded Mitigation Reserve Program Phase II</strong></td>
<td></td>
</tr>
<tr>
<td>Old Ranch</td>
<td>3.5</td>
</tr>
<tr>
<td>Anza Creek</td>
<td>0.0</td>
</tr>
<tr>
<td>Lower Hole Creek</td>
<td>1.7</td>
</tr>
<tr>
<td>Hidden Valley Creek</td>
<td>13.92</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19.12</strong></td>
</tr>
</tbody>
</table>
Figure 3.1-1. Farmlands

Legend
- Tributaries Restoration Project and Mitigation Reserve Project Phase I
- Expanded Mitigation Reserve Project Phase II

- Local Importance
- Prime Farmland
- Statewide Importance
- Unique Farmland

Source: ICF
ESRI Basemap

Figure 3.1-1. Farmlands
Old Ranch Creek and Anza Creek currently support a variety of native floodplain habitats, nonnative grassland, and nonnative riparian habitat. Old Ranch Creek is zoned as PF (Public Facilities) with a land use designation of P (Public Park) by the City of Riverside, and is zoned as W-1 (Watercourse, Watershed, and Conservation Areas) with a land use designation of OS-R (Open Space Recreation) by the City of Jurupa Valley. Anza Creek is zoned as PF (Public Facilities) with a land use designation of P (Public Park) by the City of Riverside; is zoned as W-1 (Watercourse, Watershed, and Conservation Areas) with a land use designation of OS-W (Water) and OS-R (Open Space Recreation) by the City of Jurupa Valley; and is zoned as W-1 (Water) with a land use designation of W (Water) by the County of Riverside.

Lower Hole Creek currently supports dense riparian vegetation along most of the project site and is heavily affected by human use, particularly the area’s homeless population, as evidenced by the numerous encampments and extensive trash at the site. There are many informal access trails running down the banks and across the stream. Lower Hole Creek has the following City of Riverside zoning designations: PF (Public Facilities), BMP (Business and Manufacturing Park Zone), and RE (Residential Estate Zone); and these land use designations: (OS) Open Space, C (Commercial), and MDR (Multi Density Residential).

Hidden Valley Creek currently supports a series of native riparian and floodplain vegetation communities. In addition, a large portion of the site supports nonnative California annual grassland. Hidden Valley Creek has the following City of Riverside zoning designation: PF (Public Facilities) with a land use designation of OS (Open Space/Natural Resources); the following City of Jurupa Valley zoning designation: W-1 (Watercourse, Watershed, and Conservation Areas) with a land use designation of OS-W (Water); and the following County of Riverside zoning designation: W-1 (Water) with a land use designation of W (Water) and CH (Conservation Habitat).

### 3.1.3 Environmental Impacts

#### Methods for Analysis

This analysis utilizes land use and agricultural designation maps produced by planning and resource agencies, including the California Department of Conservation and local governments, to determine the effect the proposed project would have on agricultural land, and analyzes the significance of such impacts based on the potential for the proposed project to covert such lands to non-agricultural uses, or to cause nuisances that would indirectly affect the ability to continue to use them for agricultural use.

#### Thresholds of Significance

In accordance with Appendix G of the California Environmental Quality Act Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to nonagricultural use.

- Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract.
Impact AG-1: Conversion of Important Farmland to nonagricultural use (Less than significant)

As discussed above, based on the FMMP Important Farmland maps, the project sites do not contain Prime, Unique, or Farmlands of Statewide Importance, which are the categories of farmlands identified in the thresholds of significance in Appendix G of the State CEQA Guidelines. Nonetheless, because Farmlands of Local Importance are designated within certain portions of the project sites, this analysis evaluates the project's potential impacts on these farmlands for informational purposes.

Tributaries Restoration Project and Mitigation Reserve Program Phase I

The project sites currently consist of degraded natural habitat that would be enhanced to increase the amount and quality of habitat for the Santa Ana sucker and other native species and enhance jurisdictional aquatic resources, similar to historical conditions on the sites. The Tributaries Restoration Project and Mitigation Reserve Program Phase I component would restore existing channels, enhance existing riparian and floodplain habitats, and control nonnative invasive species. As a result, the restoration of degraded habitat and the removal of invasive species, as detailed in the project description, would not result in the conversion of Farmland of Local Importance and would not involve significant changes in the existing land use but would rather improve ecological conditions. As such, the proposed project would enhance the project sites for beneficial uses and would not result in conversion of any existing agricultural land to nonagricultural use.

The Hidden Valley Creek, Old Ranch Creek, and Lower Hole Creek areas of the Tributaries Restoration Project and Mitigation Reserve Program Phase I component are within and adjacent to...
areas of Farmland of Local Importance per FMMP data for Riverside County, as shown in Figure 3.1-1. As shown in Table 3.1-1, a total of approximately 7.3 acres of Farmland of Local Importance are within three of the project sites, including 6.6 acres in Hidden Valley Creek or 21.7 percent of the site, 0.35 acre in Lower Hole Creek or 4.3 percent of the site, and 0.37 acre in Old Ranch Creek or 1.9 percent of the site. However, as previously stated, none of these areas are currently zoned by local agencies as agricultural land uses, nor are the sites currently used for agricultural purposes. The existing land uses associated with the sites would remain unchanged and are generally zoned for PF (Public Facilities) and P (Public Park) by the City of Riverside; W-1 (Watercourse, Watershed, and Conservation Areas) and OS-R (Open Space Recreation) by the City of Jurupa Valley; and W (Water) by the County of Riverside. As such, these lands are not intended to be used locally for agricultural purposes. As identified in the existing setting, the adjacent land uses are also developed with residential and transportation land uses and are not used for agricultural purposes.

Old Ranch Creek proposed project improvements would not be within the 0.37 acre of designated lands. No impacts on lands designated Farmland of Local Importance would occur within Old Ranch Creek. At Hidden Valley Creek, the proposed project would result in an active channel with perennial flow. The perennial channel would flow through areas of Hidden Valley Creek that are currently designated as Farmland of Local Importance by the FMMP. Within Lower Hole Creek, lands designated as Farmland of Local Importance are near the confluence with the Santa Ana River and the proposed project would result in an active channel flowing through these designated lands. Old Ranch Creek and Hidden Valley Creek are adjacent to the Santa Ana River floodplain, do not currently contain any existing agricultural uses, and, as previously identified, are not locally zoned for agricultural uses. The proposed project would not significantly alter existing land uses or convert any agricultural land to non-agricultural use. Therefore, the project sites would remain compatible with agricultural activities in the future as long as the use is compatible with the support of Santa Ana sucker habitat and the surrounding developed land uses, including the land use designations for the sites. Because the proposed project would not result in the conversion of existing agricultural lands to non-agricultural uses, impacts on agricultural land uses are considered less than significant.

**Significance Determination:** Less than significant. No mitigation necessary.

**Expanded Mitigation Reserve Program Phase II**

The potential implementation of the Expanded Mitigation Reserve Program Phase II would have similar impacts as those noted above for the Tributaries Restoration Project and Mitigation Reserve Program Phase I. The Hidden Valley Creek, Old Ranch Creek, and Lower Hole Creek areas of the proposed project are within and adjacent to areas of Farmland of Local Importance per FMMP data for Riverside County. A total of approximately 19.12 acres of Farmland of Local Importance are within three of the project sites, including 13.92 acres in Hidden Valley Creek or 13.3 percent of the site, 1.7 acres in Lower Hole Creek or 14.9 percent of the site, and 3.5 acres in Old Ranch Creek or 1.9 percent of the site. Although this project would result in active channels flowing through areas designated as Farmlands of Local Importance, these channels are compatible with the use of these farmlands. Therefore, this project component would not result in the conversion of existing Farmland of Local Importance and would not involve significant changes in the existing land use. Notably, this project would improve ecological conditions as a part of the Expanded Mitigation Reserve Program Phase II. As such, the proposed project would enhance the project sites for beneficial uses. Therefore, project impacts would be less than significant.

**Significance Determination:** Less than significant. No mitigation necessary.
3.2 Air Quality

This section examines the degree to which construction and maintenance of the proposed project may result in changes to regional and local air quality. This section also describes the applicable regulatory framework, existing ambient air quality conditions in the project area, and characteristics and effects of air pollutants.

The study area is in western Riverside County, which is within the South Coast Air Basin (Basin). The impact analysis focuses on the primary criteria pollutants that would be generated by construction and maintenance activities, which are carbon monoxide (CO), particulate matter 10 microns or less in diameter (PM10) and 2.5 microns or less in diameter (PM2.5), sulfur dioxide (SO2), and the ozone precursors reactive organic gases (ROG) and nitrogen oxides (NOX). Please refer to Appendix E for all emissions calculations and Section 3.6, Greenhouse Gas Emissions, for a discussion of greenhouse gas emissions and climate change.

3.2.1 Regulatory Setting

Federal

The federal Clean Air Act (CAA) and its subsequent amendments form the basis for the nation's air pollution control effort. The U.S. Environmental Protection Agency (EPA) is responsible for implementing most aspects of the CAA. A key element of the CAA is the National Ambient Air Quality Standards (NAAQS) for criteria pollutants. The CAA delegates enforcement of the NAAQS to the states. In California, the California Air Resources Board (CARB) is responsible for enforcing air pollution regulations and ensuring the NAAQS and California Ambient Air Quality Standards (CAAQS) are met. CARB, in turn, delegates regulatory authority for stationary sources and other air quality management responsibilities to local air agencies. The South Coast Air Quality Management District (SCAQMD) is the local air agency within the study area. The following sections provide more detailed information on federal, state, and local air quality regulations that apply to the project.

Clean Air Act

The CAA was first enacted in 1963 and has been amended numerous times in subsequent years (1965, 1967, 1970, 1977, and 1990). The CAA establishes federal air quality standards, known as NAAQS, for six criteria pollutants and specifies future dates for achieving compliance. The CAA also mandates that the states submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. Table 3.2-1 shows the NAAQS currently in effect for each criteria pollutant, as well as the CAAQS (discussed further below).
### Table 3.2-1. Federal and State Ambient Air Quality Standards

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Average Time</th>
<th>California Standards</th>
<th>National Standards¹</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>Ozone</td>
<td>1-hour</td>
<td>0.09 ppm</td>
<td>None²</td>
<td>None²</td>
</tr>
<tr>
<td></td>
<td>8-hour</td>
<td>0.070 ppm</td>
<td>0.070 ppm</td>
<td>0.070 ppm</td>
</tr>
<tr>
<td>Particulate Matter (PM10)</td>
<td>24-hour</td>
<td>50 µg/m³</td>
<td>150 µg/m³</td>
<td>150 µg/m³</td>
</tr>
<tr>
<td></td>
<td>Annual mean</td>
<td>20 µg/m³</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM2.5)</td>
<td>24-hour</td>
<td>None</td>
<td>35 µg/m³</td>
<td>35 µg/m³</td>
</tr>
<tr>
<td></td>
<td>Annual mean</td>
<td>12 µg/m³</td>
<td>12.0 µg/m³</td>
<td>15 µg/m³</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>8-hour</td>
<td>9.0 ppm</td>
<td>9 ppm</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>1-hour</td>
<td>20 ppm</td>
<td>35 ppm</td>
<td>None</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>Annual mean</td>
<td>0.030 ppm</td>
<td>0.053 ppm</td>
<td>0.053 ppm</td>
</tr>
<tr>
<td></td>
<td>1-hour</td>
<td>0.18 ppm</td>
<td>0.100 ppm</td>
<td>None</td>
</tr>
<tr>
<td>Sulfur Dioxide³</td>
<td>Annual mean</td>
<td>None</td>
<td>0.030 ppm</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>24-hour</td>
<td>0.04 ppm</td>
<td>0.014 ppm</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>3-hour</td>
<td>None</td>
<td>None</td>
<td>0.5 ppm</td>
</tr>
<tr>
<td></td>
<td>1-hour</td>
<td>0.25 ppm</td>
<td>0.075 ppm</td>
<td>None</td>
</tr>
<tr>
<td>Lead</td>
<td>30-day Average</td>
<td>1.5 µg/m³</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Calendar quarter</td>
<td>None</td>
<td>1.5 µg/m³</td>
<td>1.5 µg/m³</td>
</tr>
<tr>
<td></td>
<td>3-month average</td>
<td>None</td>
<td>0.15 µg/m³</td>
<td>0.15 µg/m³</td>
</tr>
<tr>
<td>Sulfates</td>
<td>24-hour</td>
<td>25 µg/m³</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Visibility-reducing Particles</td>
<td>8-hour</td>
<td>None³</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>1-hour</td>
<td>0.03 ppm</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Vinyl Chloride</td>
<td>24-hour</td>
<td>0.01 ppm</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Source: CARB 2016

¹ National standards are divided into primary and secondary standards. Primary standards are intended to protect public health, whereas secondary standards are intended to protect public welfare and the environment.

² The federal 1-hour standard of 12 parts per hundred million was in effect from 1979 through June 15, 2005. The revoked standard is referenced because it was employed for such a long period and is a benchmark for State Implementation Plans.

³ The annual and 24-hour NAAQS for SO₂ only apply for 1 year after designation of the new 1-hour standard to those areas that were previously in nonattainment for 24-hour and annual NAAQS.

⁴ CAAQS for visibility-reducing particles is defined by an extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more due to particles when relative humidity is less than 70%.

ppm = parts per million; µg/m³ = micrograms per cubic meter; NAAQS = National Ambient Air Quality Standard; SO₂ = sulfur dioxide; CAAQS = California Ambient Air Quality Standard

### Non-road Diesel Rule

EPA has established a series of increasingly strict emission standards for new off-road diesel equipment, on-road diesel trucks, and locomotives. New equipment used for restoration activities, including heavy-duty trucks and off-road construction equipment, would be required to comply with the emission standards.
State

California Clean Air Act

In 1988, the state legislature adopted the California Clean Air Act (CCAA), which established a statewide air pollution control program. The CCAA requires all air districts in the state to endeavor to meet the CAAQS by the earliest practical date. Unlike the CAA, the CCAA does not set precise attainment deadlines. Instead, the CCAA establishes increasingly stringent requirements for areas that will require more time to achieve the standards. CAAQS are generally more stringent than NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. The CAAQS and NAAQS are shown in Table 3.2-1.

CARB and local air districts bear responsibility for meeting the CAAQS, which are to be achieved through district-level air quality management plans incorporated into the SIP. In California, EPA has delegated authority to prepare SIPS to CARB, which, in turn, has delegated that authority to individual air districts. CARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPS.

The CCAA substantially adds to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The CCAA also emphasizes the control of “indirect and area-wide sources” of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures.

Statewide Truck and Bus Regulation

Originally adopted in 2005, the on-road truck and bus regulation requires heavy trucks to be retrofitted with particulate matter filters. The regulation applies to privately and federally owned diesel-fueled trucks with a gross vehicle weight rating greater than 14,000 pounds. Compliance with the regulation can be reached through one of two paths: (1) vehicle retrofits according to engine year or (2) phase-in schedule. Compliance paths ensure that by January 2023, nearly all trucks and buses will have 2010 model year engines or newer.

State Tailpipe Emission Standards

Like EPA at the federal level, CARB has established a series of increasingly strict emission standards for new off-road diesel equipment, on-road diesel trucks, and harbor craft operating in California. New equipment used for restoration activities would be required to comply with the standards.

Carl Moyer Program

The Carl Moyer Memorial Air Quality Standards Attainment Program is a voluntary program that offers grants to owners of heavy-duty vehicles and equipment. The program is a partnership between CARB and the local air districts throughout the state to reduce air pollution emissions from heavy-duty engines. Locally, the air districts administer this program.
Toxic Air Contaminant Regulations

California regulates toxic air contaminants (TACs) primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) and the Air Toxics “Hot Spots” Information and Assessment Act of 1987 (“Hot Spots” Act). In the early 1980s, CARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Act created California’s program to reduce exposure to air toxics. The “Hot Spots” Act supplements the Tanner Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

CARB has identified diesel particulate matter (DPM) as a TAC and has approved a comprehensive Diesel Risk Reduction Plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan is to reduce DPM emissions and the associated health risk by 75 percent by 2010 and by 85 percent by 2020. The plan identifies 14 measures that CARB will implement over the next several years. The project would be required to comply with any applicable diesel control measures from the Diesel Risk Reduction Plan.

SCAQMD (2015a) also acknowledges that a project emitting NO\(_X\) or ROG below its threshold of 10 tons per year “is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models” and that it would not be feasible to directly correlate project emissions of volatile organic compound (VOC) or NO\(_X\) with specific health impacts from ozone.

Regional and Local

At the regional level, responsibilities of air quality districts include overseeing stationary-source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality–related sections of environmental documents required by CEQA. The air quality districts are also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws and for ensuring that NAAQS and CAAQS are met.

South Coast Air Quality Management District

Within the study area and the Basin, SCAQMD is tasked with preparing regional programs and policies designed to improve air quality, which are assessed and published in the form of the Air Quality Management Plan (AQMP). The AQMP is updated every 4 years to evaluate the effectiveness of the adopted programs and policies and to forecast attainment dates for nonattainment pollutants to support the California SIP based on measured regional air quality and anticipated implementation of new technologies and emissions reductions. The most recent publication is the 2016 AQMP, which is intended to serve as a regional blueprint for achieving the federal air quality standards and healthful air. The 2016 AQMP is based on the forecasts contained within the Southern California Association of Governments’ (SCAG) 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

In addition to the AQMP, SCAQMD develops and adopts various rules to reduce emissions throughout the Basin. The project may be subject to the following district rules. This list of rules may not be all encompassing, as additional SCAQMD rules may apply as specific project components are further developed.
San Bernardino Valley Municipal Water District
Impact Analysis
Air Quality

Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program
Draft Environmental Impact Report

3.2-5
April 2019
ICF 96.18

- Rule 401 (Visible Emissions) prohibits an air discharge that results in a plume that is as dark or darker than what is designated as No. 1 Ringelmann Chart by the United States Bureau of Mines for an aggregate of 3 minutes in any 1 hour.

- Rule 402 (Nuisance) states that a person should not emit air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health or safety of any such persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property.

- Rule 403 (Fugitive Dust) controls fugitive dust through various requirements including, but not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, re-establishing ground cover as quickly as possible, utilizing a wheel-washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site, limiting vehicle speeds on unpaved roads to 15 miles per hour, and maintaining effective cover over exposed areas. Rule 403 also prohibits the release of fugitive dust emissions from any active operation, open storage piles, or disturbed surface area beyond the property line of the emission source and prohibits particulate matter deposits on public roadways.

- Rule 474 (Fuel Burning Equipment – Oxides of Nitrogen) limits NOX emissions from non-mobile fuel burning equipment.

- Rule 1108 (Cutback Asphalt) limits VOC emissions from cutback asphalt.

County of Riverside

County of Riverside General Plan

The County of Riverside General Plan’s Air Quality Element, Healthy Communities Element, and Land Use Element contain policies related to air quality that are relevant to the proposed project. The Air Quality Element identifies goals, policies, and programs that are meant to balance Riverside County’s actions regarding land use, circulation, and other issues with their potential effects on air quality. In summary, relevant policies are concerned with supporting SCAQMD rules and AQMP guidelines, buffering sensitive receptor from pollution sources, and controlling and reducing particulate matter emissions. Relevant policies are as follows:

AQ 1.1. Promote and participate with regional and local agencies, both public and private, to protect and improve air quality.

AQ 1.3. Participate in the development and update of those regional air quality management plans required under federal and state law, and meet all standards established for clean air in these plans.

AQ 1.4. Coordinate with the SCAQMD and MDAQMD [Mojave Desert Air Quality Management District] to ensure that all elements of air quality plans regarding reduction of air pollutant emissions are being enforced.

AQ 1.11. Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs that effectively reduce airborne pollutants.

AQ 2.2. Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible.

AQ 2.3. Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution.
AQ 4.7. To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, [South Coast Air Basin], the Environmental Protection Agency and the California Air Resources Board.

AQ 4.9. Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.

AQ 4.10. Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended.

AQ 15.1. Identify and monitor sources, enforce existing regulations, and promote stronger controls to reduce particulate matter.

AQ 16.1. Cooperate with local, regional, state and federal jurisdictions to better control particulate matter.

AQ 17.1 Reduce particulate matter from agriculture, construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights-of-way, and off-road vehicles to the extent possible.

AQ 17.4. Adopt incentives, regulations and/or procedures to manage paved and unpaved roads and parking lots so they produce the minimum practicable level of particulates.

HC 14.1. When feasible, avoid siting homes and other sensitive receptors near known or anticipated sources of air pollution.

HC 14.2. When feasible, avoid locating new sources of air pollution near homes and other sensitive receptors.

LU 1.5. The County of Riverside shall participate in regional efforts to address issues of mobility, transportation, traffic congestion, economic development, air and water quality, watershed and habitat management with cities, local and regional agencies, stakeholders, Indian nations, and surrounding jurisdictions.

LU 11.2. Ensure adequate separation between pollution producing activities and sensitive emission receptors, such as hospitals, residences, child care centers and schools.

LU 11.5. Ensure that all new developments reduce Greenhouse Gas emissions as prescribed in the Air Quality Element and Climate Action Plan.

Jurupa Area Plan

According to the County of Riverside General Plan Jurupa Area Plan (2015), the air quality in Riverside County has actually improved slightly despite the phenomenal growth that has occurred in the region. Most of that growth has been in adjacent counties and Riverside County continues to import their pollutants. With technical advances to reduce smog from cars and trucks and an expanded supply of jobs reducing the need for people to commute as far as in the past, air quality is improving locally.

County of Riverside County Code

The County of Riverside County Code does not contain any ordinances related to air quality that are relevant to the proposed project.
City of Riverside

City of Riverside General Plan

The City of Riverside General Plan’s Air Quality Element contains policies related to air quality that are relevant to the proposed project. The Air Quality Element identifies the role the City of Riverside can play to help the Basin attain federal and state air quality standards, as well as protect city residents and business from impacts of air pollution. In summary, relevant policies are concerned with supporting SCAQMD rules and the AQMP guidelines, buffering sensitive receptors from pollution sources, and controlling and reducing particulate matter emissions. Relevant policies are as follows:

AQ 1.2. Consider potential environmental justice issues in reviewing impacts (including cumulative impacts for each project proposed).

AQ 1.3. Separate, buffer and protect sensitive receptors from significant sources of pollution to the greatest extent possible.

AQ 1.4. Facilitate communication between residents and businesses on nuisance issues related to air quality.

AQ 1.21. Cooperate and participate in regional air quality management plans, programs and enforcement measures.

AQ 2.24. Support full compliance with the SCAQMD's Clean Fleet Rules.

AQ 4.1. Identify and monitor sources, enforce existing regulations and promote stronger controls to reduce particulate matter (e.g., require clean fuels for street sweepers and trash trucks, exceed the AQMD requirements for fleet rules).

AQ 4.2. Reduce particulate matter from agriculture (e.g., require use of clean non-diesel equipment and particulate traps), construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights-of-way and off-road vehicles to the extent possible, as provided in SCAQMD Rule 403.

AQ 4.3. Support the reduction of all particulates potential sources.

AQ 4.5. Require the suspension of all grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour.

AQ 4.6. Cooperate with local, regional, State and Federal jurisdictions to better control particulate matter.

AQ 6.5. Involve environmental groups, the business community, special interests and the general public in the formulation and implementation of programs that effectively reduce airborne pollutants.

AQ 7.1. Promote and participate with regional and local agencies, both public and private, to protect and improve air quality.

AQ 7.3. Participate in the development and update of those regional air quality management plans required under Federal and State law and meet all standards established for clean air in these plans.

AQ 7.4. Coordinate with the SCAQMD to ensure that the City’s air quality plans regarding reduction of air pollutant emissions are being enforced.

AQ 7.9. Adhere with Federal, State and regional air quality laws, specifically with Government Code Section 65850.2, which requires that each owner or authorized agent of a project indicate, on the development or building permit for the project, whether he/she will need to comply with the requirements for a permit for construction or modification from the SCAQMD.
AQ 7.10. Incorporate, to the extent applicable and permitted by law, current and proposed AQMP measures.

AQ 8.14. Establish programs that comply with the South Coast Air Quality Management District (AQMD) and the City's General Plan 2025 to increase the quality of air in Riverside.

City of Riverside Municipal Code

The City of Riverside Municipal Code describes requirements for grading operation projects (Code 17.28.030). The code is relevant to air quality given its provisions related to dust control. The project permittee shall comply with SCAQMD rules to control fugitive dust. The municipal code describes performance standards related to odor, requiring that any process that creates or emits any odors, dust, smoke, gases, or other odorous matter must comply with applicable standards set by SCAQMD (Code 19.590.080). The municipal code also describes nuisance odors, stating that is unlawful and a nuisance for any person owning, leasing, occupying, or having charge or possession of any property and any vehicles thereon in the city to maintain the property in such a manner that the existence of loud or unusual noises, or foul or noxious odors that offend the peace and quiet of persons of ordinary sensibilities and interfere with the comfortable enjoyment of life or property and affect the entire neighborhood or any considerable number of persons (6.15.020).

City of Jurupa Valley

City of Jurupa Valley Draft General Plan

The City of Jurupa Valley Draft General Plan’s Air Quality Element, Mobility Element, Land Use Element, Conservation and Open Space Element, Housing Element, and Environmental Justice Element contain policies related to air quality that are relevant to the proposed project. In summary, applicable policies are concerned with supporting CARB thresholds, SCAQMD rules, and the AQMP guidelines, buffering sensitive receptors from pollution sources, and controlling and reducing particulate matter. Relevant policies are as follows:

AQ 1.1. Regional Participation. Promote and participate with regional, subregional, and state agencies, both public and private, in all areas to protect and improve air quality, including enforcement of all regulations.

AQ 1.2. Air Quality Measures. Establish and implement air quality, land use, and mobility measures that improve not only the City’s environment but also that of the entire region.

AQ 2.1. Site Plan Designs. Require City land use planning efforts and site plan designs to protect people and land uses sensitive to air pollution, using barriers and/or distance from emissions sources, and protect sensitive receptors from polluting sources, wherever possible.

AQ 2.2. Pollution Control Measures. Strongly encourage the use of pollution control measures such as landscaping, vegetation and other materials that trap particulate matter or control pollution.

AQ 4.2. Particulate Matter. Reduce particulate matter from agriculture, construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights of way, and off-road vehicles to the maximum extent possible.

City of Jurupa Valley Municipal Code

The City of Jurupa Valley Municipal Code describes requirements for grading operation projects involving the hauling of more than 500 cubic yards of earth materials on public roads (Code 13.20.010). The code is relevant to air quality given its provisions related to dust control, requiring
that all clearances and permits, if any, are obtained directly from SCAQMD and other applicable governmental agencies.

### 3.2.2 Environmental Setting

Ambient air quality is affected by climatological conditions, topography, and the types and amounts of pollutants emitted. This section summarizes how air pollution moves through the air within the Basin in the presence of other chemicals and particles. This section also summarizes local climate conditions, existing air quality conditions, and sensitive receptors that may be affected by project-generated emissions.

### Regional Climate and Meteorology

The Basin is in an area of high air pollution potential due to the magnitude of emissions sources and the combination of topography, low mean atmospheric mixing height, and abundant sunshine. Although the Basin has a semi-arid climate, air near the surface is generally moist because of the presence of a shallow marine layer. With very low average wind speeds, a limited capacity to disperse air contaminants horizontally exists. The mountains and hills surrounding the Basin contribute to the variation of rainfall, temperature, and winds throughout the region.

The general region lies in the semi-permanent high-pressure zone of the eastern Pacific Ocean, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The Basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountains around the rest of its perimeter.

During the spring and early summer, pollution is typically blown out of the Basin through mountain passes or lifted by warm, vertical currents adjacent to mountain slopes. The vertical dispersion of air pollutants in the Basin is limited by temperature inversions in the atmosphere close to the Earth’s surface. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants become more concentrated in urbanized areas with pollution sources of greater magnitude.

The Basin experiences frequent temperature inversions. Atmospheric temperature typically decreases with height. However, under inversion conditions, temperature increases as altitude increases, thereby preventing air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere. This interaction creates a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward.

### Local Climate Conditions

The mountains and hills within and surrounding the Basin contribute to the variation of rainfall, temperature, and winds throughout the region. These variables characterize short-term weather conditions and observing long-term averages and trends in these characteristics provides a synopsis
of typical climatological conditions in the Basin. These meteorological conditions affect how air pollution from emissions sources within the Basin moves through the air within the Basin in the presence of other chemicals and particles. The Western Regional Climate Center—in collaboration with the National Oceanic and Atmospheric Administration—processes and publicizes regional climate summary data for the western United States. There are several meteorological stations located throughout the county that collect and record climatological data including temperature, precipitation, and wind speed and direction.

The meteorological data station that is most representative of local climate conditions within the study area is the Riverside City Fire Station 3, located at 6395 Riverside Avenue. The annual average temperature at the station is 63 degrees Fahrenheit (°F), with an average winter temperature of 49°F and an average summer temperature of 80°F. Total annual precipitation averages about 10 inches, occurring mostly during the winter (Western Regional Climate Center 2018a). The Riverside Municipal Airport southeast of the project site collects information on wind speeds and patterns. The data indicate a prominence of westerly winds that average 5 miles per hour (Western Regional Climate Center 2018b, 2018c).

Pollutants of Concern

Criteria Pollutants

As discussed above, the federal and state governments have established NAAQS and CAAQS, respectively, for six criteria pollutants. Ozone is considered a regional pollutant because its precursors affect air quality on a regional scale. Pollutants such as CO, NO₂, SO₂, and lead are considered local pollutants that tend to accumulate in the air locally. Particulate matter is both a local and a regional pollutant. The primary criteria pollutants generated by the project would be ozone precursors (NOₓ and ROG), NO₂, CO, and particulate matter.¹

All criteria pollutants can have human health and environmental effects at certain concentrations. The ambient air quality standards for these pollutants (Table 3.2-1) are set to public health and the environment within an adequate margin of safety (CAA Section 109). Epidemiological, controlled human exposure, and toxicology studies evaluate potential health and environmental effects of criteria pollutants, and form the scientific basis for new and revised ambient air quality standards. Principal characteristics and possible health and environmental effects from exposure to the primary criteria pollutants generated by the project are discussed below.

Ozone, or smog, is a photochemical oxidant that is formed when ROG and NOₓ (both byproducts of the internal combustion engine) react with sunlight. ROG are compounds made up primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. NOₓ serve as integral participants in the process of photochemical smog production. The two major forms of NOₓ are nitric oxide (NO) and NO₂. NO is a colorless, odorless gas formed from

¹ SO₂ would be generated in small quantities. SCAQMD attains all SO₂ thresholds. While SCAQMD has adopted a regional SO₂ threshold to support continued attainment of the SO₂ ambient air quality standards (discussed further below), the air district acknowledges that land use development projects do not result in substantial quantities of localized SO₂. Accordingly, localized and project-level SO₂ impacts are not evaluated. Similarly, the project would not generate lead.
atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO\textsubscript{2} is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO\textsubscript{X} acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

Ozone poses a higher risk to those who already suffer from respiratory diseases (e.g., asthma), children, older adults, and people who are active outdoors. Exposure to ozone at certain concentrations can make breathing more difficult, cause shortness of breath and coughing, inflame and damage the airways, aggregate lung diseases, increase the frequency of asthma attacks, and cause chronic obstructive pulmonary disease. Studies show associations between short-term ozone exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to ozone may increase the risk of respiratory-related deaths (EPA 2019a). The concentration of ozone at which health effects are observed depends on an individual’s sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of ozone and a 50 percent reduction in forced airway volume in the most responsive individual. Although the results vary, evidence suggests that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum ozone concentration reaches 80 parts per billion (EPA 2019b).

In addition to human health effects, ozone has been tied to crop damage, typically in the form of stunted growth, leaf discoloration, cell damage, and premature death. Ozone can also act as a corrosive and oxidant, resulting in property damage such as the degradation of rubber products and other materials.

**Nitrogen dioxide** is one of a group of highly reactive gases known as NO\textsubscript{X} (discussed above). Per SCAQMD (2008), the vast majority (95 percent) of NO\textsubscript{X} emissions is in the form of NO. No adverse health effects are associated with NO. However, breathing air with a high concentration of NO\textsubscript{2} can irritate airways in the human respiratory system, leading to increased asthma symptoms, hospital admissions, and visits to the emergency room (EPA 2019c). NO is converted to NO\textsubscript{2} through reactions with ozone as well as through photochemical reactions with hydrocarbons in the lower atmosphere. These reactions are a function of downwind distance, and SCAQMD assumes 100 percent conversion of NO to NO\textsubscript{2} at 500 meters from the emission source. Therefore, while NO\textsubscript{X} is a regional pollutant because it contributes to ozone formation, emissions of NO\textsubscript{X}, specifically due to the localized conversion of NO\textsubscript{X} to NO\textsubscript{2}, can have localized effects.

**Carbon Monoxide** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation. Exposure to CO at high concentrations can also cause fatigue, headaches, confusion, dizziness, and chest pain. There are no ecological or environmental effects of ambient CO (CARB 2019a).

**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—inhalable coarse particles, or PM10, and inhalable fine particles, or PM2.5. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading.
Particulate pollution can be transported over long distances and may adversely affect the human population, especially for people who are naturally sensitive or susceptible to breathing problems. Numerous studies have linked particulate matter exposure to premature death in people with preexisting heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms. Depending on its composition, both PM10 and PM2.5 can also affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (EPA 2019d).

**Toxic Air Contaminants**

Although NAAQS and CAAQS have been established for criteria pollutants, no ambient standards exist for TACs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, CARB has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risks they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment.

Air toxics are generated by many sources, including: stationary sources, such as dry cleaners, gas stations, auto body shops, and combustion sources; mobile sources, such as diesel trucks, ships, and trains; and area sources, such as farms, landfills, and construction sites. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) non-carcinogenic, and long-term (chronic) non-carcinogenic. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders. The principal TAC associated with the proposed project is DPM.

**Existing Air Quality Conditions**

The existing air quality conditions in the project vicinity can be characterized by monitoring data collected in the region. Table 3.2-2 summarizes data for criteria air pollutant levels from the Riverside-Rubidoux monitoring station, which is the closest station to the project and approximately 2 miles northeast of the Anza Creek and Old Ranch Creek restoration site, for the last 3 years for which complete data are available (2015–2017). Air quality concentrations are expressed in terms of parts per million (ppm) or micrograms per cubic meter (µg/m³). As shown in Table 3.2-2, no violations of CO or NO₂ NAAQS and CAAQS were reported. However, the monitoring station has detected numerous violations of the particulate matter and ozone NAAQS and CAAQS. As discussed above, the CAAQS and NAAQS define clean air and represent the maximum amount of pollution that can be present in outdoor air without any harmful effects on people and the environment. Existing violations of the ozone and particulate matter ambient air quality standards indicate that certain individuals exposed to these pollutants may experience certain health effects, including increased incidence of cardiovascular and respiratory ailments.

**Table 3.2-2. Ambient Air Quality Monitoring Data from the Riverside-Rubidoux Station (2015–2017)**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone (O₃)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum 1-hour concentration (ppm)</td>
<td>0.132</td>
<td>0.142</td>
<td>0.145</td>
</tr>
<tr>
<td>Maximum 8-hour concentration (ppm)</td>
<td>0.105</td>
<td>0.104</td>
<td>0.118</td>
</tr>
<tr>
<td>Pollutant</td>
<td>2015</td>
<td>2016</td>
<td>2017</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td><strong>Number of days standard exceeded</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAAQS 1-hour (&gt;0.09 ppm)</td>
<td>31</td>
<td>33</td>
<td>47</td>
</tr>
<tr>
<td>CAAQS 8-hour (&gt;0.070 ppm)</td>
<td>59</td>
<td>71</td>
<td>82</td>
</tr>
<tr>
<td>NAAQS 8-hour (&gt;0.070 ppm)</td>
<td>55</td>
<td>69</td>
<td>81</td>
</tr>
<tr>
<td><strong>Carbon Monoxide (CO)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum 8-hour concentration (ppm)</td>
<td>1.7</td>
<td>1.3</td>
<td>1.8</td>
</tr>
<tr>
<td>Maximum 1-hour concentration (ppm)</td>
<td>2.5</td>
<td>1.7</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Number of days standard exceeded</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAAQS 8-hour (&gt;9 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CAAQS 8-hour (&gt;9.0 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NAAQS 1-hour (&gt;35 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CAAQS 1-hour (&gt;20 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Nitrogen Dioxide (NO&lt;sub&gt;2&lt;/sub&gt;)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State maximum 1-hour concentration (ppm)</td>
<td>54</td>
<td>73</td>
<td>63</td>
</tr>
<tr>
<td>State second-highest 1-hour concentration (ppm)</td>
<td>57</td>
<td>59</td>
<td>62</td>
</tr>
<tr>
<td>Annual average concentration (ppm)</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td><strong>Number of days standard exceeded</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAAQS 1-hour (0.18 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Particulate Matter (PM10)&lt;sup&gt;3&lt;/sup&gt;</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National&lt;sup&gt;2&lt;/sup&gt; maximum 24-hour concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>69.0</td>
<td>84.0</td>
<td>92.0</td>
</tr>
<tr>
<td>National&lt;sup&gt;2&lt;/sup&gt; second-highest 24-hour concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>65.0</td>
<td>80.0</td>
<td>81.7</td>
</tr>
<tr>
<td>State&lt;sup&gt;3&lt;/sup&gt; maximum 24-hour concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>107.4</td>
<td>170.5</td>
<td>137.6</td>
</tr>
<tr>
<td>State&lt;sup&gt;3&lt;/sup&gt; second-highest 24-hour concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>91.3</td>
<td>82.6</td>
<td>120.3</td>
</tr>
<tr>
<td>National annual average concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>32.2</td>
<td>38.1</td>
<td>39.0</td>
</tr>
<tr>
<td>State annual average concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)&lt;sup&gt;4&lt;/sup&gt;</td>
<td>40.0</td>
<td>-</td>
<td>41.3</td>
</tr>
<tr>
<td><strong>Number of days standard exceeded</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAAQS 24-hour (&gt;150 µg/m&lt;sup&gt;3&lt;/sup&gt;)&lt;sup&gt;5&lt;/sup&gt;</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CAAQS 24-hour (&gt;50 µg/m&lt;sup&gt;3&lt;/sup&gt;)&lt;sup&gt;5&lt;/sup&gt;</td>
<td>92</td>
<td>-</td>
<td>103</td>
</tr>
<tr>
<td><strong>Particulate Matter (PM2.5)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National&lt;sup&gt;2&lt;/sup&gt; maximum 24-hour concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>54.7</td>
<td>51.5</td>
<td>50.3</td>
</tr>
<tr>
<td>National&lt;sup&gt;2&lt;/sup&gt; second-highest 24-hour concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>46.1</td>
<td>39.1</td>
<td>43.8</td>
</tr>
<tr>
<td>State&lt;sup&gt;3&lt;/sup&gt; maximum 24-hour concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>61.1</td>
<td>60.8</td>
<td>50.3</td>
</tr>
<tr>
<td>State&lt;sup&gt;3&lt;/sup&gt; second-highest 24-hour concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>48.0</td>
<td>40.5</td>
<td>45.5</td>
</tr>
<tr>
<td>National annual average concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>11.8</td>
<td>12.5</td>
<td>12.2</td>
</tr>
<tr>
<td>State annual average concentration (µg/m&lt;sup&gt;3&lt;/sup&gt;)&lt;sup&gt;4&lt;/sup&gt;</td>
<td>15.3</td>
<td>12.6</td>
<td>14.5</td>
</tr>
<tr>
<td><strong>Number of days standard exceeded</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAAQS 24-hour (&gt;35 µg/m&lt;sup&gt;3&lt;/sup&gt;)&lt;sup&gt;5&lt;/sup&gt;</td>
<td>10</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>
Pollutant

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur Dioxide (SO₂)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No data available</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: CARB 2018; EPA 2018a
1 An exceedance is not necessarily a violation.
2 National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.
3 State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California approved samplers.
4 State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
5 Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.

ppm = parts per million
NAAQS = National Ambient Air Quality Standards
CAAQS = California Ambient Air Quality Standards
µg/m³ = micrograms per cubic meter
mg/m³ = milligrams per cubic meter
> = greater than
* = insufficient data

Attainment Status

Local monitoring data (Table 3.2-2) are used to designate areas as nonattainment, maintenance, attainment, or unclassified for the NAAQS and CAAQS. The four designations are further defined as shown below.

- Nonattainment—assigned to areas where monitored pollutant concentrations consistently violate the standard in question.
- Maintenance—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.
- Attainment—assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.
- Unclassified—assigned to areas where data are insufficient to determine whether a pollutant is violating the standard in question.

Table 3.2-3 summarizes the attainment status of the project area in Riverside County with respect to the NAAQS and CAAQS.
Table 3.2-3. Federal and State Attainment Status of the Project Area in Riverside County

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>NAAQS</th>
<th>CAAQS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>Extreme nonattainment</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>CO</td>
<td>Maintenance</td>
<td>Attainment</td>
</tr>
<tr>
<td>PM10</td>
<td>Attainment</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>PM2.5</td>
<td>Serious nonattainment</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>SO2</td>
<td>Attainment</td>
<td>Attainment</td>
</tr>
<tr>
<td>NO2</td>
<td>Maintenance</td>
<td>Attainment</td>
</tr>
<tr>
<td>Lead</td>
<td>Attainment</td>
<td>Attainment</td>
</tr>
<tr>
<td>Sulfates</td>
<td>No standard</td>
<td>Attainment</td>
</tr>
<tr>
<td>Visibility-Reducing Particles</td>
<td>No standard</td>
<td>Unclassified</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>No standard</td>
<td>Unclassified</td>
</tr>
<tr>
<td>Vinyl Chloride</td>
<td>No standard</td>
<td>Unclassified</td>
</tr>
</tbody>
</table>

Sources: EPA 2018b; CARB 2017
NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; CO = carbon monoxide; PM10 = particulate matter 10 microns or less in diameter; PM2.5 = particulate matter 2.5 microns or less in diameter; SO2 = sulfur dioxide; NO2 = nitrogen dioxide

Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. CARB has identified the following population groups who are most likely to be affected by air pollution: children less than 14 years of age, adults over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. Land uses where these population groups are likely to spend a substantial amount of time are considered sensitive receptors. According to SCAQMD, sensitive land uses include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

Residences are the primary sensitive land use within the vicinity of the restoration sites. Additional sensitive land uses include recreational facilities and religious facilities. There are also several transient encampments throughout the project area vicinity. Table 3.2-4 presents a summary of the sensitive land uses in the vicinity of the restoration sites and Figure 3.2-1 displays each sensitive land use's location.
<table>
<thead>
<tr>
<th>Receptor</th>
<th>Description</th>
<th>Nearest Restoration Site(s)</th>
<th>Distance between Nearest Receptor and Site (feet)</th>
<th>Direction from Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-family homes</td>
<td>Residence</td>
<td>Hidden Valley Creek</td>
<td>Adjacent</td>
<td>Southeast</td>
</tr>
<tr>
<td>Pedley Christian Center</td>
<td>Religious facility</td>
<td>Hidden Valley Creek</td>
<td>640</td>
<td>North</td>
</tr>
<tr>
<td>Church of God of Prophecy</td>
<td>Religious facility</td>
<td>Hidden Valley Creek</td>
<td>900</td>
<td>North</td>
</tr>
<tr>
<td>Single-family homes</td>
<td>Residence</td>
<td>Lower Hole Creek</td>
<td>Adjacent</td>
<td>West</td>
</tr>
<tr>
<td>Van Buren Golf Center</td>
<td>Recreational facility</td>
<td>Lower Hole Creek</td>
<td>800</td>
<td>Southeast</td>
</tr>
<tr>
<td>Single-family homes</td>
<td>Residence</td>
<td>Anza Creek and Old Ranch Creek</td>
<td>Adjacent</td>
<td>South</td>
</tr>
<tr>
<td>Jurupa Hills Country Club</td>
<td>Recreational facility</td>
<td>Anza Creek</td>
<td>250</td>
<td>North</td>
</tr>
<tr>
<td>New Joy Baptist Church</td>
<td>Religious facility</td>
<td>Anza Creek</td>
<td>400</td>
<td>South</td>
</tr>
<tr>
<td>Santa Ana River Trail</td>
<td>Recreational facility</td>
<td>All</td>
<td>Adjacent</td>
<td>--</td>
</tr>
</tbody>
</table>
Figure 3.2-1. Sensitive Land Uses in the Project Vicinity
### 3.2.3 Environmental Impacts

#### Methods for Analysis

Implementation of the project would generate criteria pollutants during construction and future maintenance activities. Construction activities would occur in 2019 and 2020. Subsequent to 2020, there would be three phases of periodic maintenance: short term, long term, and in perpetuity. Emissions generated during construction and all three maintenance phases were quantified using a combination of emission factors and methodologies from the California Emissions Estimator Model (CalEEMod), version 2016.3.2, and CARB’s Emission Factors 2017 (EMFAC2017) model. This section provides a summary of the methodology. Appendix E provides a full list of assumptions.

#### Construction Activities

Construction activities would generate emissions of ROG, NO\textsubscript{X}, CO, SO\textsubscript{2}, PM10, and PM2.5 that could result in short-term air quality impacts. Emissions would originate from off-road equipment exhaust, employee and haul truck vehicle exhaust (on-road vehicles), paving, and site grading and earth movement. It is anticipated that 4 months of active construction would be required to complete each of the restoration sites, and up to two sites could be constructed at the same time, for a total project construction timeline of approximately 8 months. It is anticipated that construction of all four sites would not be consecutive and Lower Hole Creek and Anza Creek could be constructed at the same time and Hidden Valley Creek and Old Ranch Creek could be constructed at a later time. Accordingly, emissions would be temporary (i.e., limited to the 8-month construction period) and would cease when construction activities are complete.

Combustion exhaust, fugitive dust (PM10 and PM2.5), and fugitive off-gassing (ROG) were estimated using a combination of emission factors and methodologies from the California Emissions Estimator Model (CalEEMod), version 2016.3.2; CARB’s Emission Factors 2017 (EMFAC2017) model; and EPA’s AP-42 Compilation of Air Pollutant Emission Factors (AP-42) based on project-specific construction data (e.g., schedule, equipment, truck volumes), as described further below.

- **Off-Road Equipment**—Emission factors for off-road construction equipment (e.g., loaders, graders, bulldozers) were obtained from the CalEEMod (version 2016.3.2) User’s Guide appendix, which provides values per unit of activity (in grams per horsepower-hour) by calendar year (California Air Pollution Control Officers Association 2017). Criteria pollutants were estimated by multiplying the CalEEMod emission factors by the equipment inventory.

- **On-Road Vehicles**—On-road vehicles (e.g., pickup trucks, flatbed trucks) would be required for material and equipment hauling, onsite crew and material movement, and employee commuting. Exhaust emissions from on-road vehicles were estimated using the EMFAC2017 emissions model and activity data (miles traveled per day). Emission factors for haul trucks are based on aggregated-speed emission rates for EMFAC’s T7 Single Vehicle category. Factors for onsite water trucks were based on 5-mile-per-hour emission rates for the T6 Heavy category. Factors for employee commute vehicles are based on a weighted average for all vehicle speeds for EMFAC’s light-duty automobile/light-duty truck vehicle categories. Fugitive re-entrained road dust emissions were estimated using EPA’s AP-42, Sections 13.2.1 and 13.2.2.

- **Paving**—Pavement replacement would occur at the bike trail crossing of Old Ranch Creek and at the road crossing of Hidden Valley Creek during box culvert installation. Fugitive ROG
emissions were calculated based on the amount of square feet paved and the CalEEMod default emission factor of 2.62 pounds of ROG per acre paved (California Air Pollution Control Officers Association 2017).

- **Site Grading and Earth Movement**—Fugitive dust emissions from earth movement (e.g., site grading, bulldozing, and truck loading) were quantified using emission factors from CalEEMod. Data on the total graded acreage and quantity of cut-and-fill material were developed by the project design team. The earthmoving analysis accounts for emission reductions achieved through compliance with SCAQMD Rule 403.

Construction activities at each site would occur over seven phases (e.g., land clearing, invasive plant removal) in a period of 8 months. Criteria pollutants generated by each phase were quantified using the methods described above. Maximum daily emissions, based on concurrent activity among phases at each site, were quantified consistent with air district requirements. The highest daily emissions for each site were conservatively selected as the peak day for analysis purposes.

Construction activities at Lower Hole Creek and Old Ranch Creek would overlap during the first year of construction and activities at Anza Creek and Hidden Valley Creek would overlap during the second year of construction. Accordingly, maximum daily emissions within the first year of construction were obtained by adding the peak day estimates for Lower Hole Creek and Old Ranch Creek. Likewise, the peak day estimates for Anza Creek and Hidden Valley Creek were added to obtain maximum daily emissions for the second year of construction. This approach is meant to convey a worst-case scenario based on available information and, therefore, is not necessarily representative of actual emissions that would be incurred on a daily basis throughout the construction period.

**Maintenance Activities**

Replanting, invasive species removal, and other activities to facilitate plant establishment would occur for the first few years immediately following construction.² Once the vegetation at each site has matured, maintenance activities would be limited to monitoring and occasional channel work. Emissions generated by onsite equipment (e.g., backhoes) and earthmoving were modeled using CalEEMod. Emissions generated by mobile sources (e.g., employee vehicles, haul trucks) were estimated using EMFAC2017 and EPA’s AP-42. Maintenance activities would be the same at all four sites, and, as such, emissions would be identical.

Maintenance activities would occur over three phases: short term, long term, and in perpetuity. Short-term maintenance activities were assumed to occur 120 days per year for 2 years (2021 to 2023) following construction. Long-term maintenance activities were assumed to occur 48 days per year for 3 to 10 years (2023 to 2033) following short-term maintenance. In perpetuity maintenance activities were assumed to occur permanently, 24 days per year following long-term maintenance (2033 and beyond).

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² Following construction, in addition to maintenance activities, project activities would include the operation of two electric-powered groundwater pumps in perpetuity. Electricity-powered pumps do not directly generate criteria pollutant emissions. Electricity consumed by the pumps would be delivered by Southern California Edison and generated by a mix of renewable and nonrenewable sources. Nonrenewable sources would generate indirect criteria pollutant emissions, but these are permitted stationary sources subject to local and federal emissions limits. Accordingly, these emissions are not included in project-level air quality analyses. The greenhouse gas impact of operation of the pumps is analyzed in Section 3.6, *Greenhouse Gas Emissions*. 
Maintenance activities for each phase differ in terms of the number of equipment, volume of earth moved, and days per year (frequency) of activity. All emissions were conservatively modeled using 2021 emission factors, which is the first year following completion of construction. Because emission factors decline as a function of time, long-term emissions would be lower than analyzed in this section.

### Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or substantially contribute to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Generate objectionable odors affecting a substantial number of people.

As noted in Chapter 1, **Introduction**, the analysis and conclusions contained in the Initial Study (see Appendix D [Notice of Preparation/Initial Study] of this Environmental Impact Report [EIR]) prepared for the proposed project determined that several air quality impacts would be less than significant and then eliminated those impacts from further analysis on that basis. Therefore, only those impacts and corresponding thresholds of significance noted below were determined to require further analysis and are addressed in this EIR. As stated in the Notice of Preparation/Initial Study, the proposed project would not induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure). For further discussion of impacts found to be less than significant and eliminated from further discussion on that basis, refer to Chapter 6, **Effects Not Found Significant**.

In December 2018, the California Supreme Court issued its decision in **Sierra Club v. County of Fresno** (6 Cal.5th 502) (hereafter referred to as the Friant Ranch Decision). The case reviewed the long-term, regional air quality analysis contained in the EIR for the proposed Friant Ranch development. The Friant Ranch project is a 942-acre master-plan development in unincorporated Fresno County within the San Joaquin Valley Air Basin, an air basin currently in nonattainment for the ozone and PM2.5 NAAQS and CAAQS. The Court found that the air quality analysis was inadequate because it failed to provide enough detail “for the public to translate the bare [criteria pollutant emissions] numbers provided into adverse health impacts or to understand why such a translation is not possible at this time.” The Court’s decision clarifies that environmental documents must connect a project’s air quality impacts to specific health effects or explain why it is not technically feasible to perform such an analysis.

As discussed in Section 3.2.2, **Environmental Setting**, all criteria pollutants that would be generated by the proposed project are associated with some form of health risk (e.g., asthma). Criteria pollutants can be classified as either regional or localized pollutants. Regional pollutants can be transported over long distances and affect ambient air quality far from the emissions source. Localized pollutants affect ambient air quality near the emissions source. Ozone is considered a
Regional Project-Generated Criteria Pollutants

Adverse health effects induced by regional criteria pollutant emissions generated by the project (ozone precursors and particulate matter) are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). For these reasons, ozone precursors (ROG and NO\textsubscript{X}) contribute to the formation of ground-borne ozone on a regional scale, where emissions of ROG and NO\textsubscript{X} generated in one area may not equate to a specific ozone concentration in that same area. Similarly, some types of particulate pollutants may be transported over long distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects from exposure to increased ozone or regional particulate matter concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project.

Models and tools have been developed to correlate regional criteria pollutant emissions to potential community health impacts. Appendix E summarizes many of these tools, identifies the analyzed pollutants, describes their intended application and resolution, and analyzes whether they could be used to reasonably correlate project-level emissions to specific health consequences. As described in Appendix E, while there are models capable of quantifying ozone and secondary particulate matter formation and associated health effects, these tools were developed to support regional planning and policy analysis and have limited sensitivity to small changes in criteria pollutant concentrations induced by individual projects. Therefore, translating project-generated criteria pollutants to the locations where specific health effects could occur or the resultant number of additional days of nonattainment cannot be estimated with a high degree of accuracy.

Technical limitations of existing models to correlate project-level regional emissions to specific health consequences are recognized by air quality management districts throughout the state, including the San Joaquin Valley Air Pollution Control District and SCAQMD, who submitted amici curiae briefs for the Friant Ranch legal proceedings. In its brief, San Joaquin Valley Air Pollution Control District (2015) states that while health risk assessments for localized air toxics, such as DPM, are commonly prepared, “it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task.” The air district further notes that emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NO\textsubscript{X} and VOC in the San Joaquin Valley) are not likely to yield valid information, and that any such information should not be “accurate when applied at the local level.” SCAQMD (2015a) presents similar information in its brief, stating that “it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels.”

3 SCAQMD (2015a) also acknowledges that a project emitting NO\textsubscript{X} or ROG below their threshold of 10

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3 For example, SCAQMD’s analysis of its 2012 AQMP showed that modeled NO\textsubscript{X} and ROG reductions of 432 and 187 tons per day, respectively, only reduced ozone levels by 9 parts per billion. Analysis of SCAQMD’s Rule 1315 showed that emissions of NO\textsubscript{X} and ROG of 6,620 and 89,180 pounds per day, respectively, contributed to 20 premature deaths per year and 89,947 school absence (SCAQMD 2015a).
tons per year “is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models” and it would “not be feasible to directly correlate project emissions of VOC or NOx with specific health impacts from ozone.”

Appendix G of the State CEQA Guidelines indicates that, where available, the significance criteria established by local air districts may be relied upon to make the impact determinations. SCAQMD has developed regional air quality significance thresholds that are applicable to CEQA projects within its jurisdiction. These thresholds were originally published in SCAQMD’s CEQA Air Quality Handbook (SCAQMD 1993) and have since been updated through guidance published on the agency’s web portal. Table 3.2-5 presents SCAQMD’s recommended regional criteria pollutant thresholds. There are separate thresholds for short-term construction-type activities and longer-term operational-type activities (i.e., maintenance). The thresholds are applicable to regional emissions, which refer to emissions of all regulated pollutants generated both on and off a project site.

Table 3.2-5. SCAQMD Regional Air Quality Significance Threshold (maximum pounds per day)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>VOC</th>
<th>CO</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Threshold</td>
<td>75</td>
<td>550</td>
<td>100</td>
<td>150</td>
<td>150</td>
<td>55</td>
</tr>
<tr>
<td>Operation (Maintenance Activities)</td>
<td>55</td>
<td>550</td>
<td>55</td>
<td>150</td>
<td>150</td>
<td>55</td>
</tr>
</tbody>
</table>

Source: SCAQMD 2015b

1 While CO and SOx have more direct and localized impacts, SCAQMD has adopted a “regional” threshold that considers basin-wide effects of cumulative CO and SOx emissions with respect to attainment of the ambient air quality standards.

VOC = volatile organic compound; CO = carbon monoxide; NOx = nitrogen oxides; SOx = sulfur oxides; PM10 = particulate matter 10 microns or less in diameter; PM2.5 = particulate matter 2.5 microns or less in diameter

The regional thresholds presented in Table 3.2-5 are used to support the impact determinations for thresholds AQ-1, AQ-2, and AQ-3. Construction and maintenance activities could conflict with applicable air quality plans, violate air quality standards, or result in a cumulatively considerable contribution to a cumulative impact if maximum daily regional emissions exceed any of the thresholds presented in Table 3.2-5.

SCAQMD’s thresholds presented in Table 3.2-5 consider existing air quality concentrations and attainment or nonattainment designations under the NAAQS and CAAQS. The NAAQS and CAAQS are informed from the findings of a wide range of scientific evidence that demonstrates that there are known safe concentrations of criteria pollutants. While recognizing that air quality is a cumulative problem, SCAQMD considers projects that generate regional criteria pollutant and ozone precursor emissions below these thresholds to be minor in nature and to not adversely affect air quality such that the NAAQS or CAAQS would be violated or lead to increased incidence of specific health consequences. Accordingly, projects with criteria pollutant emissions that make only incremental contributions and do not exceed SCAQMD’s thresholds cannot be traced to significant adverse health outcomes. As further described below, the criteria pollutant emissions associated with the proposed project would not exceed SCAQMD’s thresholds and a quantitative correlation of project-generated regional criteria pollutant emissions to specific human health impacts is not included in this analysis.
Localized Project-Generated Criteria Pollutants, Air Toxics (DPM), and Odors

Localized pollutants generated by a project are deposited and potentially affect populations near the emissions source. Because these pollutants dissipate with distance, emissions from individual projects can result in direct and material health impacts on adjacent sensitive receptors. Models and thresholds are readily available to quantify these potential health effects and evaluate their significance. Locally adopted thresholds and analysis procedures for the localized pollutants of concern associated with the proposed project are identified below.

Criteria Pollutants

As discussed above, the NAAQS and CAAQS are health protective standards and define the maximum amount of ambient pollution that can be present without harming public health. SCAQMD has developed localized significance thresholds (LST) to evaluate whether project-generated emissions may violate the ambient air quality standards and therefore expose receptors to substantial criteria pollutant concentrations. Applicable LSTs for the proposed project were identified based on the project’s Source Receptor Area (SRA), which is SRA #23, Metropolitan Riverside County, and its proximity to receptors. As described above, the restoration sites are adjacent to several residential and recreational receptors. Accordingly, Table 3.2-6 presents the LSTs for SRA #23 for construction sites equal to or less than 1 acre and within 80 feet (25 meters) of sensitive receptors. The LST for each pollutant is used to evaluate the localized air quality impacts associated with the onsite emissions generated by the project’s construction and maintenance activities. These thresholds are used to support the impact determinations under AQ-1 through AQ-4.

Table 3.2-6. SCAQMD Localized Significance Thresholds (pounds per day)

<table>
<thead>
<tr>
<th>SRA</th>
<th>SRA Name</th>
<th>Project Component</th>
<th>CO</th>
<th>NOx</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Metropolitan Riverside County</td>
<td>Construction</td>
<td>602</td>
<td>118</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Operation (Maintenance Activities)</td>
<td>602</td>
<td>118</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: SCAQMD 2009

1SCAQMD divided the air basin into various Source Receptor Areas. LSTs have been developed based on the ambient concentrations of that pollutant for each source receptor area.

2 Localized effects can occur from the conversion of NOx to NO2, and these effects are assessed through the localized LST analysis for NOx.

SCAQMD = South Coast Air Quality Management District; SRA = Source Receptor Area; CO = carbon monoxide; NOx = nitrogen oxides; NO2 = nitrogen dioxide; LST = Localized Significance Threshold; PM10 = particulate matter 10 microns or less in diameter; PM2.5 = particulate matter 2.5 microns or less in diameter

Diesel Particulate Matter

DPM has been identified as TAC and long-term exposure can lead to cancer, birth defects, and damage to the brain and nervous system. Accordingly, SCAQMD has adopted separate thresholds to evaluate receptor exposure to DPM emissions. The “substantial” DPM threshold defined by SCAQMD is the probability of contracting cancer for the maximum exposed individual exceeding 10 in 1 million, or the ground-level concentrations of non-carcinogenic TACs resulting in a hazard index greater than 1 for the maximum exposed individual (SCAQMD 2017). SCAQMD’s DPM thresholds are used to support the impact determination under AQ-4.
Odors

Per SCAQMD’s odor threshold, the potential for significant air quality impacts under threshold AQ-5 is addressed qualitatively in the context of compliance with SCAQMD Rule 402 (Nuisance) (SCAQMD 2015a). SCAQMD has not established a quantitative-based odor threshold.

Impacts and Mitigation Measures

**Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan (Less than significant)**

**Tributaries Restoration Project and Mitigation Reserve Program Phase I**

The analysis addresses the consistency with applicable SCAQMD and SCAG policies, including SCAQMD’s 2016 AQMP and growth projections within the SCAG 2016–2040 RTP/SCS. In accordance with the procedures established in SCAQMD’s CEQA Air Quality Handbook, the following criteria are required to be addressed in order to determine the consistency with applicable SCAQMD and SCAG policies:

- Would the project:
  - Result in an increase in the frequency or severity of existing air quality violations; or
  - Cause or contribute to new air quality violations; or
  - Delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP?

- Would the project exceed the assumptions utilized in preparing the AQMP?
  - Is the project consistent with the population and employment growth projections upon which AQMP forecasted emission levels are based; or
  - Does the project include air quality mitigation measures; or
  - To what extent is project development consistent with the AQMP land use policies?

With respect to the first criterion, as discussed below in the analysis for Impact AQ-2, construction-and maintenance-generated ozone precursors (ROG and NOX), CO, PM10, PM2.5, and SO2 have been quantitatively analyzed for the construction and maintenance activities of the project. These emissions were analyzed in order to: (1) ascertain potential effects on regional and localized concentrations (as applicable) and (2) determine if there is a potential for such emissions to cause or contribute to a violation of the ambient air quality standards. As demonstrated in the quantitative analysis for Impact AQ-2, regional and localized emissions would not exceed the SCAQMD-recommended thresholds during construction and maintenance activities.

With respect to the determination of consistency with AQMP growth assumptions, the projections in the AQMP for achieving air quality goals are based on assumptions in SCAG’s 2016–2040 RTP/SCS regarding population, housing, and growth trends. Determining if a project exceeds the assumptions reflected in the AQMP involves the evaluation of three criteria: (1) consistency with applicable population, housing, and employment growth projections; (2) project mitigation measures; and (3) appropriate incorporation of AQMP land use planning strategies.
Construction activities would not increase population or housing. It is not anticipated that the project would result in substantial new regional employment opportunities. Therefore, construction activities would not affect growth projections used in the AQMP. Similarly, maintenance activities would be consistent with applicable SCAQMD and SCAG policies, including SCAQMD’s 2016 AQMP and growth projections within the SCAG 2016–2040 RTP/SCS. Although the in perpetuity maintenance activities would extend beyond the 2040 horizon year used by the analysis in the RTP/SCS, these activities would not increase population or housing.

Compliance with Rule 403 may include, but is not limited to, application of water to prevent the generation of dust, application of soil binders to uncovered areas, re-establishment of ground cover, utilization of a wheel-washing system, limitation of vehicle speeds on unpaved roads to 15 miles per hour, and maintenance of effective cover over exposed areas. As demonstrated in the analysis (see Impact AQ-2), the project would not result in significant air quality impacts, and no mitigation measures are required to reduce emissions. As such, the project meets this AQMP consistency criterion. Therefore, as the proposed project would be consistent with applicable SCAQMD and SCAG policies, impacts would be less than significant. No mitigation is required.

**Significance Determination:** Less than significant. No mitigation necessary.

**Expanded Mitigation Reserve Program Phase II**

The future implementation of the Expanded Mitigation Reserve Program Phase II would involve individual mitigation and conservation projects that could be added within each of the restoration sites to restore additional areas to native conditions. Potential projects include removal of nonnative plants, revegetation, improvement to a public park, habitat restoration and enhancement, floodplain expansion, and establishment of an oxbow feature. While specific details about these projects are unknown at this time, the maximum area that would be restored in 1 year is assumed to be similar to the area of the Tributaries Restoration Project and Mitigation Reserve Program Phase I.

The individual mitigation and conservation projects of the Expanded Mitigation Reserve Program Phase II would be similar to those of the Tributaries Restoration Project and Mitigation Reserve Program Phase I in terms of construction and maintenance activity (e.g., off-road equipment, on-road vehicles, earthmoving, paving), intensity (i.e., number of equipment), and frequency (i.e., hours per day and days per year of activity). Accordingly, emissions are anticipated to be of similar intensity as those of the Tributaries Restoration Project and Mitigation Reserve Program Phase I. Because the individual mitigation and conservation projects of the Expanded Mitigation Reserve Program Phase II would restore a similarly sized area per year at the same emissions intensity as the Tributaries Restoration Project and Mitigation Reserve Program Phase I, air quality impacts of the Expanded Mitigation Reserve Program Phase II are anticipated to be similar to those of the Tributaries Restoration Project and Mitigation Reserve Program Phase I.

Based on the analysis of the Tributaries Restoration Project and Mitigation Reserve Program Phase I in Impact AQ-2, regional and localized emissions from the Expanded Mitigation Reserve Program Phase II are not anticipated to exceed the SCAQMD-recommended localized thresholds. Projects in the Expanded Mitigation Reserve Program Phase II would have no direct effect on population or regional housing, and they are not anticipated to result in substantial new regional employment opportunities. Therefore, they would be consistent with applicable SCAQMD and SCAG policies, including SCAQMD’s 2016 AQMP and growth projections within the SCAG 2016–2040 RTP/SCS. Projects in the Expanded Mitigation Reserve Program Phase II would comply with all applicable regulatory standards (e.g., SCAQMD Rule 403, Fugitive Dust) as required by SCAQMD. As such, the
Expanded Mitigation Reserve Program Phase II meets the AQMP consistency criterion. Therefore, as the proposed project would be consistent with applicable SCAQMD and SCAG policies, impacts would be less than significant. No mitigation is required.

**Significance Determination:** Less than significant. No mitigation necessary.

**Impact AQ-2: Violate any air quality standard or substantially contribute to an existing or projected air quality violation (Less than significant)**

**Tributaries Restoration Project and Mitigation Reserve Program Phase I**

SCAQMD thresholds were determined based on SCAQMD’s determination of what level of emissions would result in cumulatively considerable impacts on ambient air quality and human health. Therefore, should the project emissions prove to be less than the applicable thresholds after mitigation, then it is assumed the project would not lead to deterioration of ambient air quality in a significant manner. SCAQMD emphasizes the importance of analyzing both regional and localized emissions. Regional emissions include all emissions associated with project activities within the Basin (i.e., both a project's offsite and onsite emissions), while localized emissions refer only to emissions released from sources specifically located on the project site (i.e., a project's onsite emissions). Both regional and localized emissions associated with construction and maintenance activities are addressed below.

**Construction Activities**

Criteria pollutant emissions from construction activities at each of the four project sites would be generated by onsite construction equipment, on-road motor vehicle trips, earthworks, and paving. Emissions may vary substantially depending on the level of activity, types of equipment, number of personnel, wind and precipitation conditions, soil moisture content, and length of the construction period. It is anticipated that construction would occur over a period of 8 months—a 4-month period for Lower Hole Creek and Anza Creek and a later 4-month period for Hidden Valley Creek and Old Ranch Creek.

Table 3.2-7 presents maximum daily regional criteria pollutant emissions that would be generated by construction activities. As previously discussed, construction activities for Lower Hole Creek and Old Ranch Creek would occur concurrently, as would activities for Anza Creek and Hidden Valley Creek. Accordingly, peak daily emissions during periods of overlap among the two sites have been calculated and are analyzed relative to SCAQMD’s regional thresholds of significance.
Table 3.2-7. Regional Criteria Pollutant Emissions from Construction Activities (pounds per day)

<table>
<thead>
<tr>
<th>Location</th>
<th>ROG</th>
<th>NO\textsubscript{X}</th>
<th>CO\textsuperscript{1}</th>
<th>PM10</th>
<th>PM2.5</th>
<th>SO\textsubscript{X}\textsuperscript{1}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Hole Creek</td>
<td>21</td>
<td>26</td>
<td>78</td>
<td>2</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Old Ranch Creek</td>
<td>21</td>
<td>28</td>
<td>79</td>
<td>3</td>
<td>2</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Anza Creek</td>
<td>21</td>
<td>24</td>
<td>78</td>
<td>2</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Hidden Valley Creek</td>
<td>21</td>
<td>28</td>
<td>79</td>
<td>3</td>
<td>2</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Peak Daily Emissions\textsuperscript{2}

<table>
<thead>
<tr>
<th>Location</th>
<th>NO\textsubscript{X}</th>
<th>CO\textsuperscript{1}</th>
<th>PM10</th>
<th>PM2.5</th>
<th>SO\textsubscript{X}\textsuperscript{1}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Hole Creek and Old Ranch Creek</td>
<td>41</td>
<td>52</td>
<td>147</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Anza Creek and Hidden Valley Creek</td>
<td>40</td>
<td>42</td>
<td>147</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>SCAQMD Threshold</td>
<td>75</td>
<td>100</td>
<td>550</td>
<td>150</td>
<td>55</td>
</tr>
</tbody>
</table>

Note: Refer to Appendix E for the emission calculations.

\textsuperscript{1} While CO and SO\textsubscript{X} have more direct and localized impacts, SCAQMD has adopted a "regional" threshold that considers basin-wide effects of cumulative CO and SO\textsubscript{X} emissions with respect to attainment of the ambient air quality standards.

\textsuperscript{2} Construction activities at Lower Hole Creek and Old Ranch Creek would overlap during the first year of construction and activities at Anza Creek and Hidden Valley Creek would overlap during the second year of construction. Accordingly, maximum daily emissions within the first year of construction were obtained by adding the peak day estimates for Lower Hole Creek and Old Ranch Creek. Likewise, the peak day estimates for Anza Creek and Hidden Valley Creek were added to obtain maximum daily emissions for the second year of construction. Values may not add due to rounding.

ROG = reactive organic gas; NO\textsubscript{X} = nitrogen oxides; CO = carbon monoxide; PM10 = particulate matter 10 microns or less in diameter; PM2.5 = particulate matter 2.5 microns or less in diameter; SO\textsubscript{X} = sulfur oxides; SCAQMD = South Coast Air Quality Management District

Table 3.2-8 presents maximum daily localized criteria pollutant emissions that would be generated at each of the restoration sites. Unlike the regional analysis, SCAQMD's localized impact assessment does not evaluate overlapping emissions from multiple restoration sites. This is because the localized analysis specifically assesses emissions at each individual project site. Under SCAQMD's localized significance thresholds, because the sites that would be under construction concurrently (Lower Hole Creek and Old Ranch Creek in the first year and Anza Creek and Hidden Valley Creek in the second year) and are more than 2,000 feet apart, there would be no potential for localized emissions interaction among the sites.

Table 3.2-8. Localized Criteria Pollutant Emissions from Construction Activities (pounds per day)

<table>
<thead>
<tr>
<th>Location</th>
<th>NO\textsubscript{X}\textsuperscript{1}</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Hole Creek</td>
<td>26</td>
<td>78</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Old Ranch Creek</td>
<td>23</td>
<td>79</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Anza Creek</td>
<td>24</td>
<td>78</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Hidden Valley Creek</td>
<td>23</td>
<td>79</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>SCAQMD LST</td>
<td>118</td>
<td>602</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: Refer to Appendix E for the emission calculations.

\textsuperscript{1} Localized effects can occur from the conversion of NO\textsubscript{X} to NO\textsubscript{2}, and these effects are assessed through the localized LST analysis for NO\textsubscript{X}.

NO\textsubscript{X} = nitrogen oxides; CO = carbon monoxide; PM10 = particulate matter 10 microns or less in diameter; PM2.5 = particulate matter 2.5 microns or less in diameter; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold
As shown in Tables 3.2-7 and 3.2-8, construction activities would not result in regional or localized emissions exceeding SCAQMD thresholds. As such, these emissions levels would not be expected to contribute a significant level of air pollution such that regional or local air quality would be degraded. Therefore, the impact would be less than significant. No mitigation is required.

**Maintenance Activities**

Maintenance activities would generate criteria pollutant emissions from on-road motor vehicle trips, earthworks, and mobile and stationary equipment. Tables 3.2-9 and 3.2-10 present estimated regional and localized emissions from the short-term, long-term, and in perpetuity maintenance phases. Maintenance activities differ across phases in terms of the number of equipment, cubic yards of earth moved, and days per year (frequency) of activity. The regional analysis conservatively assumes maintenance activities at all four sites could occur on the same day. Accordingly, total emissions generated by all four sites are summed and compared to SCAQMD’s regional thresholds. Unlike the construction analysis above, the localized maintenance analysis evaluates overlapping emissions from multiple restoration sites because maintenance activities at the Old Ranch Creek and Anza Creek sites would occur fewer than 2,000 feet apart. Therefore, emissions from Old Ranch Creek and Anza Creek are combined and compared to the LSTs.

**Table 3.2-9. Regional Criteria Pollutant Emissions from Maintenance Activities (pounds per day)**

<table>
<thead>
<tr>
<th>Maintenance Activity</th>
<th>ROG</th>
<th>NO\textsubscript{X}</th>
<th>CO\textsuperscript{1}</th>
<th>PM10</th>
<th>PM2.5</th>
<th>SO\textsubscript{X}\textsuperscript{3}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Term (2021 to 2023)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single site\textsuperscript{2}</td>
<td>5</td>
<td>4</td>
<td>46</td>
<td>1</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Peak Daily Emissions\textsuperscript{3}</td>
<td>19</td>
<td>14</td>
<td>185</td>
<td>4</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Long Term (2023 to 2033)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single site\textsuperscript{2}</td>
<td>5</td>
<td>4</td>
<td>46</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Peak Daily Emissions\textsuperscript{3}</td>
<td>19</td>
<td>14</td>
<td>185</td>
<td>2</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>In Perpetuity (2033 and beyond)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single site\textsuperscript{2}</td>
<td>5</td>
<td>1</td>
<td>44</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Peak Daily Emissions\textsuperscript{3}</td>
<td>19</td>
<td>6</td>
<td>175</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>SCAQMD Threshold</td>
<td>75</td>
<td>100</td>
<td>550</td>
<td>150</td>
<td>55</td>
<td>150</td>
</tr>
</tbody>
</table>

Note: Refer to Appendix E for the emission calculations.

\textsuperscript{1} While CO and SO\textsubscript{X} have more direct and localized impacts, SCAQMD has adopted a “regional” threshold that considers basin-wide effects of cumulative CO and SO\textsubscript{X} emissions with respect to attainment of the ambient air quality standards.

\textsuperscript{2} Maintenance activities would be the same at all four sites, and, as such, emissions would be identical.

\textsuperscript{3} Analysis conservatively assumes maintenance activities at all four sites could occur concurrently on one day. Accordingly, the single site estimate is multiplied by four to calculate peak daily emissions. Values may not add due to rounding.

ROG = reactive organic gas; NO\textsubscript{X} = nitrogen oxides; CO = carbon monoxide; PM10 = particulate matter 10 microns or less in diameter; PM2.5 = particulate matter 2.5 microns or less in diameter; SO\textsubscript{X} = sulfur oxides; SCAQMD = South Coast Air Quality Management District
### Table 3.2-10. Localized Criteria Pollutant Emissions from Maintenance Activities (pounds per day)

<table>
<thead>
<tr>
<th>Maintenance Activity¹,²</th>
<th>NOₓ³</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-Term (2021 to 2023)</td>
<td>6</td>
<td>91</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Long-Term (2023 to 2033)</td>
<td>6</td>
<td>91</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>In Perpetuity (2033 and beyond)</td>
<td>3</td>
<td>87</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>SCAQMD LST</td>
<td>118</td>
<td>602</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Refer to Appendix E for the emission calculations.

¹ Maintenance activities would be the same at all four sites, and, as such, emissions would be identical.
² Old Ranch Creek and Anza Creek are fewer than 2,000 feet apart. As such, their combined emissions are presented above.
³ Localized effects can occur from the conversion of NOₓ to NO₂, and these effects are assessed through the localized LST analysis for NOₓ.

NOₓ = nitrogen oxides; CO = carbon monoxide; PM10 = particulate matter 10 microns or less in diameter; PM2.5 = particulate matter 2.5 microns or less in diameter; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold

As shown in Tables 3.2-9 and 3.2-10, short-term, long-term, and in perpetuity maintenance activities would not result in regional or localized emissions exceeding SCAQMD thresholds. Moreover, emissions associated with long-term and in perpetuity maintenance were conservatively modeled using 2021 emission factors. Because emission factors decline as a function of time, permanent emissions associated with in perpetuity maintenance would be lower than presented in Tables 3.2-9 and 3.2-10. Therefore, the project would not contribute a significant level of air pollution such that regional or local air quality would be degraded, and the impact would be less than significant. No mitigation is required.

**Significance Determination:** Less than significant. No mitigation necessary.

### Expanded Mitigation Reserve Program Phase II

The future implementation of the Expanded Mitigation Reserve Program Phase II would involve individual mitigation and conservation projects that could be added within each of the project sites to restore additional areas to native conditions. While specific details about these projects are unknown at this time, the maximum area that would be restored in 1 year is assumed to be similar to the area of the Tributaries Restoration Project and Mitigation Reserve Program Phase I. The individual mitigation and conservation projects of the Expanded Mitigation Reserve Program Phase II would also be similar to those of the Tributaries Restoration Project and Mitigation Reserve Program Phase I in terms of construction and maintenance activity, intensity, and frequency. Because the individual mitigation and conservation projects of the Expanded Mitigation Reserve Program Phase II would restore a similarly sized area per year at the same emissions intensity as the Tributaries Restoration Project and Mitigation Reserve Program Phase I, air quality impacts of the Expanded Mitigation Reserve Program Phase II would be similar to those of the Tributaries Restoration Project and Mitigation Reserve Program Phase I. Impacts could be even less than those of the Tributaries Restoration Project and Mitigation Reserve Program Phase I, given that the localized emissions analysis of maintenance activities for the Tributaries Restoration Project and Mitigation Reserve Program Phase I combines the emissions from two restoration sites occurring fewer than 2,000 feet apart. As the timing and exact location of individual mitigation and conservation projects are unknown at this time, projects in the Expanded Mitigation Reserve Program Phase II may not be restored at the same time and be fewer than 2,000 feet apart.
Based on the analysis of the Tributaries Restoration Project and Mitigation Reserve Program Phase I, regional and localized emissions from the Expanded Mitigation Reserve Program Phase II would not exceed the SCAQMD-recommended localized thresholds. Therefore, the impact would be less than significant. No mitigation is required.

**Significance Determination:** Less than significant. No mitigation necessary.

**Impact AQ-3:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) (Less than significant)

**Tributaries Restoration Project and Mitigation Reserve Program Phase I**

Cumulative impacts can result from individually minor but collectively significant projects taking place over time. The study area for cumulative effects on air quality is the Basin. The Basin experiences chronic exceedances of state and federal ambient air quality standards because of past and present projects and is subject to continued nonattainment status by reasonably foreseeable future projects. SCAQMD has prepared, and periodically updates, the Basin's regional AQMP, which sets forth a comprehensive and integrated program that will lead the Basin into compliance with the federal and state air quality standards.

SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the AQMP pursuant to federal CAA mandates. The project would comply with all regulatory requirements previously discussed in this section, including, not limited to, SCAQMD Rules 401, 402, 403, 474, and 1108. In addition, the project would be required by law to comply with any relevant control measures adopted by SCAQMD as part of the AQMP. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., rule compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on all projects Basin-wide.

Moreover, according to SCAQMD, individual projects that exceed the daily significance thresholds would cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment. If the project's pollutant emissions are below the threshold levels, the impacts from an air contaminant are not considered to be cumulatively considerable. As shown in Tables 3.2-7 and 3.2-9, neither construction nor maintenance activities would result in regional emissions exceeding SCAQMD thresholds. Therefore, impacts of the project would not be cumulatively considerable, and this impact would be less than significant. No mitigation is required.

**Significance Determination:** Less than significant. No mitigation necessary.

**Expanded Mitigation Reserve Program Phase II**

If pollutant emissions of individual mitigation and conservation projects of the Expanded Mitigation Reserve Program Phase II are above individual project SCAQMD threshold levels, the impacts from an air contaminants are considered to be cumulatively considerable. The individual mitigation and conservation projects of the Expanded Mitigation Reserve Program Phase II would restore a similarly sized area per year at the same emissions intensity as the Tributaries Restoration Project and Mitigation Reserve Program Phase I. As discussed under Impact AQ-2, the Expanded Mitigation
Reserve Program Phase II would not exceed the SCAQMD-recommended regional thresholds. Therefore, the impact would be less than significant. No mitigation is required.

**Significance Determination:** Less than significant. No mitigation necessary.

**Impact AQ-4: Expose sensitive receptors to substantial pollutant concentrations (Less than significant)**

The potential for significant air quality impacts under threshold AQ-4 is addressed based on potential receptor exposure to localized criteria pollutants and DPM. SCAQMD’s LSTs evaluate whether project-generated emissions may violate the ambient air quality standards and therefore expose receptors to substantial criteria pollutant concentrations. SCAQMD thresholds for evaluating receptor exposure to DPM emissions are used. The “substantial” DPM threshold defined by SCAQMD is the probability of contracting cancer for the maximum exposed individual exceeding 10 in 1 million, or the ground-level concentrations of non-carcinogenic TACs resulting in a hazard index greater than 1 for the maximum exposed individual (SCAQMD 2017).

**Tributaries Restoration Project and Mitigation Reserve Program Phase I**

**Construction Activities**

Heavy-duty equipment and vehicles required for construction activities would generate DPM emissions that could expose nearby receptors to increased health risks. However, work at each site would range from 71 to 189 days, and carcinogenic risks are generally assessed over a period of 30 years. The brief duration of construction work at each individual site is therefore far less than typically associated with chronic health impacts. Moreover, while the restoration sites are adjacent to existing receptors, equipment and vehicles would be spread throughout each of the sites, and, as such, emissions would not be concentrated at one single location (see Figure 3.2-1). Because emissions dissipate as a function of distance, pollutant concentrations and associated health risks would be lower at the nearest sensitive receptors, particularly when activity occurs on the opposing side of the restoration site. Moreover, the project would be required to comply with any applicable diesel control measures from the Diesel Risk Reduction Plan. Given the site characteristics and limited duration of exposure, construction activities would not expose sensitive receptors to substantial DPM concentrations or health risks in excess of SCAQMD thresholds. Similarly, as shown in Tables 3.2-8 and 3.2-10, these receptors would not be exposed to increased criteria pollutant concentrations in excess of SCAQMD’s LSTs. Consequently, implementation of project would not result in localized violations of the health-protective CAAQS or NAAQS, and, as such, would not expose sensitive receptors to significant pollutant concentrations or health effects. This impact would be less than significant. No mitigation is required.

**Maintenance Activities**

Maintenance activities would not introduce any new substantial stationary or mobile sources of DPM emissions. During short-term and long-term maintenance activities, a backhoe, trimmer, chainsaw, excavator, all-terrain vehicle, and other small equipment may be needed to remove invasive species and support plant establishment. In perpetuity maintenance activities would be limited to use of a chainsaw, trimmer, all-terrain vehicle, and various hand tools. Short-term maintenance would occur fewer than 120 days per year, long-term maintenance would occur fewer than 50 days per year, and in perpetuity maintenance would occur fewer than 25 days per year. Moreover, the project would be required to comply with any applicable diesel control measures.
from the *Diesel Risk Reduction Plan*. The minor amount of DPM emissions and localized criteria pollutants that would be generated during maintenance activities would not be substantial and would not result in health risks exceeding SCAQMD thresholds. This impact would be less than significant, and no mitigation is required.

**Significance Determination:** Less than significant. No mitigation necessary.

**Expanded Mitigation Reserve Program Phase II**

The future implementation of the Expanded Mitigation Reserve Program Phase II would involve individual mitigation and conservation projects that could be added within each of the project sites to restore additional areas to native conditions. While the specific location of these projects is unknown at this time, they would generally be adjacent to the sites in the Tributaries Restoration Project and Mitigation Reserve Program Phase I (see Figure 2-18 through Figure 2-20). Nearby sensitive receptors would be the same as identified for the Tributaries Restoration Project and Mitigation Reserve Program Phase I (see Figure 3.2-1). The individual mitigation and conservation projects of the Expanded Mitigation Reserve Program Phase II would also be similar to those of the Tributaries Restoration Project and Mitigation Reserve Program Phase I in terms of construction and maintenance activity, intensity, and frequency. Because the individual mitigation and conservation projects of the Expanded Mitigation Reserve Program Phase II would restore land with the same nearby sensitive receptors and would have a similar emissions intensity as the Tributaries Restoration Project and Mitigation Reserve Program Phase I, air quality impacts of the Expanded Mitigation Reserve Program Phase II would be similar to those of the Tributaries Restoration Project and Mitigation Reserve Program Phase I. The Tributaries Restoration Project and Mitigation Reserve Program Phase I would not emit substantial DPM concentrations or localized criteria pollutants in excess of SCAQMD thresholds. Similarly, the Expanded Mitigation Reserve Program Phase II would not emit substantial DPM concentrations or localized criteria pollutants in excess of SCAQMD thresholds. This impact would be less than significant, and no mitigation is required.

**Significance Determination:** Less than significant. No mitigation necessary.

**Impact AQ-5: Generate objectionable odors affecting a substantial number of people (Less than significant)**

**Tributaries Restoration Project and Mitigation Reserve Program Phase I**

**Construction Activities**

There are no quantitative thresholds established to assess construction odor impacts (SCAQMD 2015a). Instead, odor impacts are addressed in the context of Rule 402 (Nuisance). Based on complaints received by SCAQMD, the following sources are likely producers of nuisance odors: agriculture (farming and livestock), chemical plants, composting operations, dairies, fiberglass molding, landfills, refineries, rendering plants, rail yards, and wastewater treatment plants (SCAQMD 2005). Construction activities would not involve any of these listed sources. Construction activities would not disturb any sources of unexpected odors such as sewer lines. Project construction would involve the use of mobile sources of air quality emissions including off-road construction equipment and on-road mobile sources resulting from worker trips, both of which may emit objectionable odors due to the combustion of diesel fuel, as well as during limited asphalt paving.
However, the odor impacts during periods of construction would be intermittent and temporary, and would dissipate rapidly as a function of distance. Thus, construction is unlikely to expose a substantial number of people to objectionable odors. Potential odors generated during asphalt paving would be addressed through mandatory compliance with SCAQMD Rule 1108, which limits the amount of VOCs from cutback asphalt.

Project construction activities would remove vegetation and excavate soil, which could expose buried organic materials. However, odors associated with organic decomposition are typically generated under anaerobic conditions. The restoration sites are composed of primarily well-aerated sandy and gravel soils. Excavation on these soils and stockpiling of cut material on site is therefore not expected to affect the potential for soil-based odors, which would be limited given that any decomposition of organic material would occur under aerobic conditions. Accordingly, construction activities would not result in nuisance odors. This impact would be less than significant. No mitigation is required.

**Maintenance Activities**

Maintenance would not involve processes found at any of the above-listed producers of nuisance odors. Maintenance activities may result in minor equipment-based odors, but these would occur infrequently throughout the year and would dissipate rapidly. While the restored land uses have the potential to generate odors from natural processes, the emissions would be similar in origin and magnitude to the existing land use types in the restored area (e.g., managed wetlands). Accordingly, maintenance activities would not result in nuisance odors. This impact would be less than significant. No mitigation is required.

**Significance Determination:** Less than significant. No mitigation necessary.

**Expanded Mitigation Reserve Program Phase II**

The future implementation of the Expanded Mitigation Reserve Program Phase II would involve individual mitigation and conservation projects that could be added within each of the project sites to restore additional areas to native conditions. While the specific circumstances of these projects are unknown at this time, they would be similar to those of the Tributaries Restoration Project and Mitigation Reserve Program Phase I in terms of construction and maintenance activity, intensity, and frequency.

Similar to those under the Tributaries Restoration Project and Mitigation Reserve Program Phase I, individual mitigation and conservation projects in the Expanded Mitigation Reserve Program Phase II could involve the use of mobile sources of air quality pollutants including off-road construction equipment and on-road mobile sources, both of which may emit objectionable odors due to the combustion of diesel fuel. Odors could also be emitted during any asphalt paving or excavation of organic matter. Potential odors generated during asphalt paving would be addressed through mandatory compliance with air district rules, such as SCAQMD Rule 1108, which limits the number of VOCs from cutback asphalt. Construction odors from diesel-powered equipment and sediment excavation would be temporary and intermittent, and would dissipate rapidly as a function of distance. Odors associated with soil excavation are likewise anticipated to be minor and localized. The Expanded Mitigation Reserve Program Phase II area is composed of primarily well-aerated sandy and gravel soils. Any excavation on these soils and stockpiling of cut material on site is therefore not expected to affect the potential for soil-based odors, which would be limited given that
any decomposition of organic material would occur under aerobic conditions. Therefore, it is not anticipated that construction activities would emit objectionable odors.

Maintenance activities may result in minor equipment-based odors, but these would occur infrequently throughout the year and would dissipate rapidly. While the restored land has the potential to generate odors from natural processes, the emissions would be similar in origin and magnitude to the existing land use types in the restored area (e.g., managed wetlands). Accordingly, maintenance activities would not result in nuisance odors. This impact would be less than significant. No mitigation is required.

**Significance Determination:** Less than significant. No mitigation necessary.
3.3 Biological Resources

This section describes the existing biological resource conditions in the project area, summarizes the applicable federal, state, and local regulations, and provides an analysis of potential impacts on biological resources that are expected to occur with implementation of the proposed project. Measures to mitigate potentially significant impacts are included where necessary and feasible. Analysis methods, data sources, significance thresholds, and terminology used in this section are described in the appropriate subsections below. For further discussion of impacts found to be less than significant and eliminated from further discussion on that basis, refer to Chapter 6, Effects Not Found Significant.

Biological resources include wildlife, fish, and their habitats within an ecosystem whether it is located within a natural or urban setting. Wetlands and other aquatic resources have been identified by both the federal government and the state of California as important resources. The protection of these areas is critical for maintaining the physical, chemical, and biological integrity of waters of the U.S. and waters of the state.

Special-status species are defined as plants and animals that are legally protected under the federal Endangered Species Act (ESA), California Endangered Species Act (CESA), Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act (BGEPA), or other regulations identified below, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status plants are species with one or more of the following characteristics:

- Listed or proposed for listing as threatened or endangered under ESA (50 Code of Federal Regulations [CFR] 17.12 [listed plants] and various notices in the Federal Register [proposed species]).
- Candidates for possible future listing as threatened or endangered under the ESA (70 FR 24870–24934, May 11, 2005).
- Listed or candidates for listing by the State of California as threatened or endangered under CESA (14 California Code of Regulations [CCR] 670.5).
- Listed as rare under the California Native Plant Protection Act (California Fish and Game Code [CFGC] Section 1900 et seq.).
- Determined to meet the definitions of rare or endangered under CEQA (State CEQA Guidelines §15380).
- Considered by the California Native Plant Society (CNPS) to be “rare, threatened or endangered in California” (California Rare Plant Ranks 1B and 2B) or vascular plants, bryophytes, and lichens listed as having special status by the California Department of Fish and Wildlife (CDFW).
- Listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (California Rare Plant Ranks 3 and 4) that may be included on the basis of local significance or recent biological information.

Special-status animals are species with one or more of the following characteristics:

- Listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.11 [listed animals] and various notices in the Federal Register [proposed species]).
- Candidates for possible future listing as threatened or endangered under the ESA (70 Federal Register 24870-24934, May 11, 2005), or as species of concern (National Marine Fisheries Service [NMFS]).
- Determined to meet the definitions of rare or endangered under CEQA (State CEQA Guidelines §15380).
- Listed or candidates for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5).
- Wildlife species of special concern to CDFW.
- Fully protected species under CFGC Section 3511 (birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians).
- Species with no formal special status but thought by experts to be rare or in serious decline and to warrant special status based on recent information.

### 3.3.1 Regulatory Setting

#### Federal

**Federal Endangered Species Act of 1973**

Administered by the U.S. Fish and Wildlife Service (USFWS) and National Oceanographic and Atmospheric Administration NMFS, the ESA provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Pursuant to ESA (7 United States Code [USC] Section 136, 16 USC 1531 et seq.), USFWS and NMFS have regulatory authority over species listed as endangered or threatened as well as habitat of such species that has been designated as critical (i.e., Critical Habitat). Under ESA, authorization is required to “take” a listed species or adversely modify critical habitat. Take is defined under ESA Section 3 as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Under federal regulation (50 CFR 17.3, 222.102); “harm” is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Designated critical habitat for endangered and threatened species is defined as a specific geographic area that is essential for species recovery and conservation of a threatened or endangered species and that may require special management and protection. Critical habitat is designated when a species is listed pursuant to the ESA. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery.

Specifically, Sections 7 and 10(a) of the ESA regulate actions that could jeopardize endangered or threatened species. ESA Section 7 outlines procedures for federal interagency cooperation to conserve federally listed species and designated critical habitat. Section 7(a)(2) and its implementing regulations require federal agencies to consult with USFWS and/or NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of critical habitat. Critical habitat designations are not made for every species listed under ESA. The designation process also takes into account economic, national security, and other impacts and may result in the exclusion of some habitat areas from critical habitat designation (16 USC 1533(b)(2)).
Military installations are generally excluded from critical habitat designations; however, they are required by the Sikes Act (16 USC 670a–670f, as amended) to prepare Integrated Natural Resource Management Plans.

For projects where federal action is not involved and take of a listed species may occur, the project proponent may seek to obtain an incidental take permit (ITP) under ESA Section 10(a). Section 10(a) allows issuance of permits for incidental take of endangered or threatened species. The term “incidental” applies if the taking of a listed species is incidental to and not the purpose of an otherwise lawful activity. A Habitat Conservation Plan (HCP) demonstrating how the taking would be minimized and what steps taken would ensure the species’ survival must be submitted for issuance of Section 10(a) permits.

**Migratory Bird Treaty Act**

The MBTA domestically implements a series of international treaties that provide for migratory bird protection (16 USC 703 et seq.). The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it is unlawful, except as permitted by regulations, “to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, [...] any migratory bird, or any part, nest, or egg of any such bird” (16 USC 703(a)). Species protected under the MBTA are listed in 50 CFR 10.13. Most native birds in the Santa Ana River region are protected under the MBTA. USFWS issues permits under the MBTA to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, educational, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal; USFWS does not issue permits for “incidental take” of migratory birds that results from otherwise lawful activities such as infrastructure, transportation projects, facility structures, or other activities.

**Bald and Golden Eagle Protection Act**

The BGEPA is the primary law protecting eagles, including individuals, and their nests and eggs (16 USC 668 et seq.). It defines “take” to include “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb” (16 USC 668c). “Disturb” is defined by regulation at 50 CFR 22.3 in 2007 as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause... (1) injury to an eagle, (2) a decrease in productivity..., or (3) nest abandonment...” (USFWS 2009). Under the act’s Eagle Permit Rule (50 CFR 22.26), USFWS may issue permits to authorize limited, non-purposeful take of bald eagles and golden eagles.

**Protection of Migratory Bird Populations (Executive Order 13186)**

Executive Order (EO) 13186 (Federal Register, Volume 66, Number 11 [January 17, 2001], p. 4) requires federal agencies to develop a comprehensive strategy for the conservation of migratory birds by the federal government, thereby fulfilling the government’s duty to lead in the protection of this international resource. Each federal agency is required to enter into a Memorandum of Understanding with USFWS outlining how the agency will promote conservation of migratory birds. The EO also requires federal agencies to incorporate migratory bird conservation measures into their agency activities. The EO does not affect federal-aid projects because actions delegated to or assumed by nonfederal entities, or carried out by nonfederal entities with federal assistance, are not subject to the EO, although such actions continue to be subject to the MBTA itself.
Invasive Species (Executive Order 13112)
EO 13112 requires federal agencies to “prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health effects that invasive species cause.” An invasive species is defined by the EO as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Alien species are defined, with respect to a particular ecosystem, as any species (including its seeds, eggs, spores, or other biological material capable of propagating that species) that is not native to that ecosystem.

Clean Water Act
The principal law that serves to protect the nation's waters is the 1948 Federal Water Pollution Control Act. This legislation, more commonly referred to as the Clean Water Act (CWA), underwent significant revision when Congress, in response to the public's growing concern of widespread water pollution, passed the Federal Water Pollution Control Act Amendments of 1972. The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. for the conservation of the nation's potable water sources. Under the current regulatory definition, waters of the U.S. include navigable waters, territorial seas, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries (33 CFR 328.3(a)).

Clean Water Act, Section 404
Section 404 of the CWA (33 USC 401 et seq.; 33 USC 1344; USC 1413; and Department of Defense, Department of the Army, U.S. Army Corps of Engineers [USACE] 33 CFR Part 323), as implemented by USACE, requires authorization by USACE for the discharge of dredged and/or fill material into waters of the U.S. (as defined at 33 CFR 328.3(a)). Dredged material means material that is excavated or dredged from waters of the U.S. Fill material means material placed in waters of the U.S. where the material has the effect of replacing any portion of a waters of the U.S. with dry land or changing the bottom elevation of waters of the U.S. Examples of fill material include rock, sand, soil, clay, plastics, woodchips, concrete, and materials used to create any structure or infrastructure in waters of the U.S.

Clean Water Act, Section 401
Section 401 of the CWA requires a water quality certification or waiver thereof before any federal permit can be issued “to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge.” Therefore, projects requiring authorization by USACE pursuant to Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act, may need to obtain water quality certification. The California State Water Resources Control Board and the Regional Water Quality Control Boards (RWQCBs) are responsible for issuing Section 401 Water Quality Certifications.

National Pollutant Discharge Elimination System Permit Program
Finally, under the CWA, the U.S. Environmental Protection Agency has implemented pollution control programs and has developed national water quality criteria recommendations for pollutants in surface waters. The CWA makes it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. The U.S. Environmental Protection Agency's
National Pollutant Discharge Elimination System permit program controls discharges. Point sources are discrete conveyances such as pipes or human-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need a National Pollutant Discharge Elimination System permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

**Executive Order 11988, Floodplain Management**

EO 11988 requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. This EO provides an eight-step process that agencies carry out as part of their decision-making process for projects that have potential impacts on or within a floodplain.

**Protection of Wetlands (Executive Order 11990)**

Pursuant to EO 11990, each federal agency is responsible for preparing implementing procedures for carrying out the provisions of the EO. The purpose of this EO is to “minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands.” Each agency, to the extent permitted by law, must avoid undertaking or providing assistance for any activity located in wetlands, unless the head of the agency finds that there is no practical alternative to such activity, and the proposed action includes all practical measures to minimize harm to wetlands that may result from such actions. In making this finding, the head of the agency may take into account economic, environmental, and other pertinent factors. Each agency must also provide opportunity for early public review of any plans or proposals for new construction in wetlands.

**State**

**California Environmental Quality Act**

CEQA applies to actions that are directly undertaken, financed, or permitted by state lead agencies. Regulations for implementation are found in the State CEQA Guidelines published by the state resources agency (Office of the Secretary).

**California Endangered Species Act**

The CESA provides a process by which plants and animals can be recognized as being endangered or threatened with extinction. Pursuant to the CESA, a permit from CDFW is required for projects that could result in the taking of a plant or animal species that is state listed as threatened or endangered (CFGC Section 2050 et seq.). Under CESA, “take” means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (CFGC Section 86). The CESA definition of take does not include “harm” or “harass,” as the ESA definition does. As a result, the threshold for take is higher under CESA than under ESA. Authorization for take of state-listed species may be obtained through a CFGC Section 2080.1 consistency determination (for applicants who have already obtained a federal incidental take statement or permit for the same species) or a Section 2081 ITP.
Natural Community Conservation Planning Act

California’s Natural Communities Conservation Planning (NCCP) program is a cooperative effort to protect habitats and species that began under the State’s NCCP Act of 1991. The ESA Section 4(d) special rule for interim take of coastal California gnatcatchers was promulgated in response to the act and the initiation of NCCP programs targeting coastal sage scrub (gnatcatcher habitat). The NCCP Act authorized the state to engage in regional multiple species conservation planning with local jurisdictions and property owners.

The NCCP Act and the associated Southern California Coastal Sage Scrub NCCP Process Guidelines (1993), Southern California Coastal Sage Scrub NCCP Conservation Guidelines (1993), and NCCP General Process Guidelines (1998) have been superseded by the NCCP Act of 2003. The NCCP Act of 2003 provides for the preparation and approval of NCCPs. NCCPs identify and provide for the regional or area-wide protection of plants and animals, including their habitats, and are intended to preserve local and regional biological diversity, reconcile urban development and wildlife needs, as well as “conserve” state-listed species to the point where they can be delisted, and maintain or enhance conditions for Covered Species such that listing will not become necessary (CFGC Section 2800 et seq.). The NCCP Act was amended again in 2011 to allow CDFW to authorize incidental take of “fully protected” species if they are “Covered Species” under an approved NCCP.

California Fish and Game Code Section 1602 – Lake or Streambed Alteration

CDFW regulates alterations or impacts on streambeds or lakes under CFGC Section 1602. All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under CFGC Section 1602. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first submitting a complete Notification of Lake or Streambed Alteration to CDFW:

- Substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The Fish and Game Commission defines “stream” as a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. CDFW’s jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife.

California Fish and Game Code Sections 3503 and 3503.5 – Protection of Birds, Nests, and Raptors

CFGC Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction.
Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA. These code sections do not provide for the issuance of any type of ITP.

**Fully Protected Species under the California Fish and Game Code (Sections 3511, 4700, 5050, and 5515)**

Protection of fully protected species is described in CFGC Sections 3511, 4700, 5050, and 5515. These statutes prohibit take or possession of fully protected species. Incidental take of fully protected species may be authorized under an approved NCCP.

**California Native Plant Protection Act**

The Native Plant Protection Act of 1977 (CFGC Section 1900 et seq.) directed CDFW to carry out the Legislature’s intent to “preserve, protect and enhance rare and endangered plants in this State.” The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as “endangered” or “rare” and to protect endangered and rare plants from take.

**California Desert Native Plants Act**

The California Desert Native Plants Act of 1981 (California Food and Agriculture Code Section 80000 et seq.) directed CDFW to carry out the Legislature’s intent to “to protect California desert native plants from unlawful harvesting on both public and privately owned lands, to provide the people of this state with the information necessary to legally harvest native plants so as to ultimately transplant those plants with the greatest possible chance of survival, and to encourage public participation in implementing the safeguards established by this division and in evaluating the effectiveness and desirability of the safeguards.” The California Desert Native Plants Act gave the California Fish and Game Commission the power to define regulated native desert plants, and regulate the harvest, transplant, and resale of regulated native desert plants.

**Porter-Cologne Water Quality Control Act – California Water Code Section 13000 et seq.**

The State Water Resources Control Board and RWQCBs, as appropriate, have the responsibility to implement and enforce the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), which regulates waste discharge into waters of the state. In the Porter-Cologne Act, the legislature declared that the “state must be prepared to exercise its full power and jurisdiction to protect the quality of waters in the state from degradation” (California Water Code Section 13000). Porter-Cologne grants the RWQCBs the authority to implement and enforce the water quality laws, regulations, policies and plans to protect the groundwater and surface water of the State. The RWQCB regulates the “discharge of waste” to waters of the state. The term “discharge of waste” is also broadly defined in Porter-Cologne, such that discharges of waste include fill, any material resulting from human activity, or any other “discharge” that may directly or indirectly affect waters of the state relative to implementation of Section 401 of the CWA.

Specifically, Porter-Cologne requires each RWQCB to formulate and adopt water quality plans for all areas within their region (also referred to as “Basin Plans”). Basin Plans establish beneficial uses, water quality standards, and water quality objectives for major watershed areas (i.e., RWQCB
boundaries) throughout the state. Under Porter-Cologne, all parties proposing to discharge waste that could affect the quality of waters of the state, other than into a community sewer system, are required to file with the appropriate RWQCB a Report of Waste Discharge containing such information and data as may be required by the RWQCB. The RWQCB will then respond to the report by issuing a waste discharge requirement (WDR) in a public hearing, or by waiving WDRs (with or without conditions) for that proposed discharge. The RWQCB has a statutory obligation to prescribe WDRs except where the RWQCB finds that a waiver of WDRs for a specific type of discharge is in the public interest. Therefore, all parties proposing to discharge waste that could affect waters of the state, but do not affect federal waters (which requires a CWA Section 404 permit and CWA Section 401 Certification) must file a Report of Waste Discharge with the appropriate RWQCB.

The RWQCB collaborates with other agencies on the enforcement of the act, such as CDFW and USACE. While 401 certification is typically issued by RWQCB staff, WDRs must be issued by the RWQCB. Generally, when staff issue or waive 401 certification, WDRs are simultaneously waived. However, for large or multiyear projects that are being reviewed under Section 401 of the CWA, staff may determine that WDRs should also be issued.

Regional and Local

Figure 3.3-1 shows an aerial of the proposed project area to provide a visual representation of the extent of the Santa Ana River as an influence to the regional landscape, along with the local jurisdictions within the proposed project areas.

Regional Habitat Conservation Plans

In the Riverside region, NCCPs and HCPs are designed to provide an umbrella of protection for multiple Covered Species, which are those species for which incidental take is authorized under an approved NCCP and/or HCP. The following sections describe approved and adopted Subarea or Subregional Plans under the NCCP within the Riverside region. Figure 3.3-2 shows the HCPs that cover certain portions of the project area.

Western Riverside County Multiple Species Habitat Conservation Plan

The Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSHCP; the Western Riverside Plan) is an NCCP and HCP for the western portion of the Riverside County region. The project lies within the WRCMSHCP Plan Area. The WRCMSHCP Plan Area encompasses approximately 1.26 million acres (1,966 square miles), and there are 146 Covered Species included in the WRCMSHCP. The WRCMSHCP Plan Area includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, San Jacinto, Eastvale, Jurupa Valley, Menifee, and Wildomar. The WRCMSHCP was formally adopted by the governing county and cities in 2003 and 2004, and USFWS and CDFW granted take permits in 2004. The Western Riverside Regional Conservation Authority acquires, administers, operates, and maintains land and facilities for ecosystem conservation and habitat reserves for rare, threatened, and endangered species listed in the WRCMSHCP.
The proposed project is not a Covered Activity under the Western Riverside Plan. Although the project is not a Covered Activity, to ensure compliance with CEQA, the proposed project must demonstrate consistency with the WRCMSHCP.

The proposed project occurs within the Cities of Riverside/Norco Area Plan and Jurupa Area Plan of the WRCMSHCP. Portions of the Anza Creek/Old Ranch Creek and Lower Hole Creek sites are within the WRCMSHCP Area Plan Subunits (SU) “SU1-Santa Ana River South, Cities of Riverside/Norco Area Plan” and “SU1-Santa Ana River North, Jurupa Area Plan” within Criteria Cells 617 and 621 (Figure 3.3-2). In addition, the project overlaps with WRCMSHCP Public/Quasi-Public (PQP) Conserved Lands, which comprise a subset of the WRCMSHCP Conservation Area preserved for open space value and contribute to the conservation of Covered Species. The project sites are also within the WRCMSHCP Existing Core A and Core Linkage area. Portions of the proposed project occur within the WRCMSHCP Narrow Endemic Plant Species Survey Area for San Diego ambrosia (Ambrosia pumila), Brand’s phacelia (Phacelia stellaris), and San Miguel savory (Clinopodium chandleri) and are also within a WRCMSHCP Burrowing Owl Survey Area (Figure 3.3-2).
Figure 3.3-1
Cities and Counties in the Project Vicinity
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program
Figure 3.3-2
Habitat Conservation Plan (HCP) Elements in the Vicinity of the Tributary Restoration Sites
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program
Table 3.3-1 summarizes the specific applicable WRCMSHCP details such as Criteria Cells and PQP Conserved Lands applicable to the tributary restoration sites. WRCMSHCP Criteria Cells specify planning species and biological requirements and considerations to be addressed. Refer to Section 3.0 and Section 7.0 of the WRCMSHCP for more information on public and private development within the Criteria Area, including actions determined to be consistent with the Western Riverside Plan.

### Table 3.3-1. Western Riverside County Multiple Species Habitat Conservation Plan Criteria Cells, Plan Areas, Plan Area Subunits, Conserved Lands containing portions of Project Sites, and Individual Species Survey Areas

<table>
<thead>
<tr>
<th>Anza Creek/Old Ranch Creek</th>
<th>WRCMSHCP Criteria Cell: 621</th>
<th>WRCMSHCP Plan Area: Cities of Riverside and Norco Area Plan</th>
<th>WRCMSHCP Plan Area Subunit: Subunit 1: Santa Ana River – South</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criteria Cell Planning Species:</strong></td>
<td>Black-crowned night heron, burrowing owl, Cooper’s hawk, double-crested cormorant, downy woodpecker, least Bell’s vireo, loggerhead shrike, osprey, peregrine falcon, southwestern willow flycatcher, tree swallow, western yellow-billed cuckoo, white-faced ibis, white-tailed kite, yellow-breasted chat, yellow warbler, arroyo chub, Santa Ana sucker, bobcat, western pond turtle, and Santa Ana River woolly-star.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Criteria Cell Biological Issues and Considerations:** | Conserve existing wetlands along the Santa Ana River.  
Conserve alluvial fan sage scrub associated with the Santa Ana River to support key populations of Santa Ana River woolly-star.  
Conserve Habitat for least Bell’s vireo, southwestern willow flycatcher and western yellow-billed cuckoo along the Santa Ana River.  
Provide for and maintain a continuous Linkage along the Santa Ana River from the eastern boundary of the Cities of Riverside/Norco to Prado Basin to the west.  
Conserve foraging and breeding Habitats occurring in grasslands adjacent to the Santa Ana River to support sensitive bird species such as burrowing owl and loggerhead shrike.  
Maintain Core and Linkage Habitat for bobcat.  
Maintain Core Area for the western pond turtle.  
Maintain Habitat for arroyo chub and Santa Ana sucker. |
| **Public/Quasi-Public Conserved Lands of the WRCMSHCP:** | Jurupa West/Martha McLean-Anza Narrows, owned by Riverside County Parks and the City of Riverside. |
| **Individual Species Survey Areas:** | Burrowing owl and narrow endemic plants. |

<table>
<thead>
<tr>
<th>Lower Hole Creek</th>
<th>WRCMSHCP Criteria Cell: 617</th>
<th>WRCMSHCP Plan Area: Jurupa Area Plan</th>
<th>WRCMSHCP Plan Area Subunit: Subunit 1-Santa Ana River – North</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criteria Cell Planning Species:</strong></td>
<td>Black-crowned night heron, Cooper’s hawk, double-crested cormorant, least Bell’s vireo, loggerhead shrike, osprey, peregrine falcon, southwestern willow flycatcher, tree swallow, western yellow-billed cuckoo, white-faced ibis, white-tailed kite, arroyo chub, Santa Ana sucker, bobcat, and western pond turtle.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Criteria Cell Biological Issues and Considerations:</strong></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
  

- Conserve existing wetlands in the Jurupa Area Plan portion of the Santa Ana River, with a focus on conserving existing Habitats in the river.
- Conserve known populations of least Bell’s vireo and southwestern willow flycatcher along the Santa Ana River.
- Maintain a continuous Linkage along the Santa Ana River from the northern boundary of the Area Plan to the western boundary.
- Maintain Core and Linkage Habitat for bobcat in the Santa Ana River.
- Maintain Core Area for western pond turtle.

Public/Quasi-Public Conserved Lands of the WRCMSHCP:
Santa Ana River Wildlife Area, owned by the State of California.

**Individual Species Survey Areas:**
Burrowing owl and narrow endemic plants.

### Hidden Valley Creek

<table>
<thead>
<tr>
<th>WRCMSHCP Criteria Cell:</th>
<th>WRCMSHCP Plan Area:</th>
<th>WRCMSHCP Plan Area Subunit:</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Jurupa Area Plan</td>
<td>None</td>
</tr>
</tbody>
</table>

**Criteria Cell Planning Species:**
None (not within a Criteria Cell).

**Criteria Cell Biological Issues and Considerations:**
Not applicable (not within a Criteria Cell).

Public/Quasi-Public Conserved Lands of the WRCMSHCP:
Hidden Valley Wildlife Area, owned by the State of California.

**Individual Species Survey Areas:**
Burrowing owl and narrow endemic plants.

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**Habitat Conservation Plan for the Stephens’ Kangaroo Rat in Western Riverside County, California**

The Stephens’ Kangaroo Rat (SKR) Short-term Conservation Plan, prepared by the Riverside County Habitat Conservation Agency, was approved by USFWS and CDFG in 1990, and the long-term conservation plan (SKR HCP) was approved in 1996. The SKR HCP occurs entirely within the WRCMSHCP area.

The SKR HCP establishes conservation of 15,000 acres in core reserves within the plan’s boundary for SKR. The loss of habitat and individuals under this HCP is offset by the establishment of a “core reserve” system consisting of seven reserves managed to maintain the long-term survival of the species. The proposed project does not occur within the SKR HCP Core Reserve Area. No SKR or suitable habitat for the species occur within the project area.

Riverside County Ordinance No. 663.10 was established to implement the mitigation provisions of the SKR HCP, which includes a mitigation fee for new development in western Riverside County. Portions of the proposed project sites are within SKR Plan Fee Area (Figure 3.3-2). However, the project is not a development project and does not affect any SKR habitat.

### Upper Santa Ana River Habitat Conservation Plan

The Upper Santa Ana River Habitat Conservation Plan (Upper SAR HCP), currently being prepared by the San Bernardino Valley Municipal Water District (Valley District) and 11 other member agencies, has not yet been issued for public review. However, the proposed project is included in the list of Covered Activities. The Upper SAR HCP is a collaborative effort among 11 public agencies of the Santa Ana River Watershed, in partnership with USFWS, CDFW, and several other government
agencies and stakeholder organizations. The purpose of the Upper SAR HCP is primarily to enable the water resource agencies located in Riverside and San Bernardino Counties to continue to provide and maintain a secure source of water for the residents and businesses in the watershed, and to conserve and maintain natural rivers and streams that provide habitat for a diversity of unique and rare species in the watershed. The protection of these habitats and the riverine systems they depend on also provides recreational opportunities for activities such as hiking, fishing, and wildlife viewing. The Upper SAR HCP will specify how species and their habitats will be protected and managed in the future and will provide the ITPs needed by the water resource agencies under the federal and state endangered species acts to maintain, operate, and improve regional water resource infrastructure. The anticipated release of the draft Upper SAR HCP is mid-2019.

**Local Regulations**

Local regulations of cities and counties overlapped by the project area are discussed below. Relevant environmental and biological objectives and policies are described. Table 3.3-2 shows the acreages of each restoration site that fall within the jurisdictions of the City of Jurupa Valley, City of Riverside, and unincorporated parts of Riverside County. Figure 3.3-1 shows the project sites, city and county locations, and sensitive biological areas in the vicinity.

**Table 3.3-2. Acres of Each Restoration Site within Jurisdictions of Cities and Counties**

<table>
<thead>
<tr>
<th>Project Site</th>
<th>City of Riverside (acreage)</th>
<th>City of Jurupa Valley Area (acreage)</th>
<th>Riverside County Area (acreage)</th>
<th>Total (acreage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tributaries Restoration Project and Mitigation Reserve Program Phase I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old Ranch Creek</td>
<td>18.8</td>
<td>0.0</td>
<td>18.8</td>
<td>18.8</td>
</tr>
<tr>
<td>Anza Creek</td>
<td>9.2</td>
<td>-</td>
<td>0.7</td>
<td>9.9</td>
</tr>
<tr>
<td>Lower Hole Creek</td>
<td>8.2</td>
<td>-</td>
<td>8.2</td>
<td>8.2</td>
</tr>
<tr>
<td>Hidden Valley Creek</td>
<td>1.2</td>
<td>-</td>
<td>29.2</td>
<td>30.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37.3</strong></td>
<td><strong>0.0</strong></td>
<td><strong>29.2</strong></td>
<td><strong>67.3</strong></td>
</tr>
<tr>
<td>Expanded Mitigation Reserve Program Phase II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old Ranch Creek</td>
<td>144.2</td>
<td>44.9</td>
<td>189.1</td>
<td></td>
</tr>
<tr>
<td>Anza Creek</td>
<td>94.4</td>
<td>7.4</td>
<td>106.1</td>
<td></td>
</tr>
<tr>
<td>Lower Hole Creek</td>
<td>11.6</td>
<td>4.3</td>
<td>11.6</td>
<td></td>
</tr>
<tr>
<td>Hidden Valley Creek</td>
<td>2.8</td>
<td>21.2</td>
<td>80.9</td>
<td>104.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>252.9</strong></td>
<td><strong>73.5</strong></td>
<td><strong>85.2</strong></td>
<td><strong>411.6</strong></td>
</tr>
</tbody>
</table>

Source: GIS 2019

**County of Riverside**

**Riverside County General Plan**

The Multipurpose Open Space Element of Riverside County's General Plan describes policies to address protection and preservation of natural resources, agriculture and open space areas, management of mineral resources, preservation and enhancement of cultural resources, and recreational opportunities.

The project sites are covered by the following two Area Plans of the Riverside County General Plan: (1) Jurupa Area Plan (Hidden Valley Creek site and a portion of Anza Creek/Old Ranch Creek site),...
and (2) Cities of Riverside and Norco Area Plan (Lower Hole Creek site and most of the Anza Creek/Old Ranch Creek site). The City of Riverside has jurisdiction over project site areas within the Cities of Riverside and Norco Area Plan. The City of Jurupa Valley officially incorporated on July 1, 2011, after the baseline established for the County General Plan, and the information presented in the Riverside County General Plan remained unaltered; thus, it has extremely limited application. The County does not have jurisdiction over lands governed by the cities; however, approximately 123 acres of the Hidden Valley Creek site and 7 acres of the Anza Creek site are on unincorporated County land, and are under the jurisdiction of the County.

The following Riverside County General Plan Multipurpose Open Space Element policies are relevant to the consideration of biological resources on unincorporated County land within the project sites:

**Watershed Management**

**Water Quality**

**OS 3.1.** Encourage innovative and creative techniques for wastewater treatment, including the use of local water treatment plants.

**OS 3.2.** Encourage wastewater treatment innovations, sanitary sewer systems, and groundwater management strategies that protect groundwater quality in rural areas.

**OS 3.3.** Minimize pollutant discharge into storm drainage systems, natural drainages, and aquifers (AI 3)

**OS 3.4.** Review proposed projects to ensure compliance with the National Pollutant Discharge Elimination System (NPDES) Permits and require them to prepare the necessary Stormwater Pollution Prevention Program (SWPPP). (AI 3)

**OS 3.5.** Integrate water runoff management within planned infrastructure and facilities such as parks, street medians and public landscaped areas, parking lots, streets, etc. where feasible.

**OS 3.6.** Design the necessary stormwater detention basins, recharge basins, water quality basins, or similar water capture facilities to protect water-quality. Such facilities should capture and/or treat water before it enters a watercourse. In general, these facilities should not be placed in watercourses, unless no other feasible options are available.

**OS 3.7.** Where feasible, decrease stormwater runoff by reducing pavement in development areas, reducing dry weather urban runoff, and by incorporating “Low Impact Development,” green infrastructure and other Best Management Practice design measures such as permeable parking bays and lots, use of less pavement, bio-filtration, and use of multi-functional open drainage systems, etc. (AI 57, 62)

**Floodplain and Riparian Area Management**

**OS 5.1.** Substantially alter floodways or implement other channelization only as a “last resort,” and limit the alteration to:

a. facilities necessary for the protection of public health and safety only after all other options are exhausted;

b. essential public service projects where no other feasible construction method or alternative project location exists; or

c. projects where the primary function is improvement of fish and wildlife habitat. (AI 25, 59, 60)

**OS 5.2.** If substantial modification to a floodway is proposed, design it to reduce adverse environmental effects to the maximum extent feasible, considering the following factors:

a. stream scour;
b. erosion protection and sedimentation;
c. wildlife habitat and linkages;
d. cultural resources including human remains;
e. groundwater recharge capability;
f. adjacent property; and
g. design (a natural effect, examples could include soft riparian bottoms and gentle bank slopes, wide and shallow floodways, minimization of visible use of concrete, and landscaping with native plants to the maximum extent possible). A site specific hydrologic study may be required. (AI 25, 59, 60)

**OS 5.3.** Based upon site, specific study, all development shall be set back from the floodway boundary a distance adequate to address the following issues: (AI 59, 60, 133)

a. public safety;
b. erosion;
c. riparian or wetland buffer;
d. wildlife movement corridor or linkage;
e. slopes;
f. type of watercourse; and
g. cultural resources.

**OS 5.4.** Consider designating floodway setbacks for greenways, trails, and recreation opportunities on a case-by-case basis. (AI 25, 59, 60)

**OS 5.5.** Preserve and enhance existing native riparian habitat and prevent obstruction of natural watercourses. Prohibit fencing that constricts flow across watercourses and their banks. Incentives shall be utilized to the maximum extent possible. (AI 25, 60)

**OS 5.6.** Identify and, to the maximum extent possible, conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas. (AI 60, 61)

**OS 5.7.** Where land is prohibited from development due to its retention as natural floodways, floodplains and watercourses, incentives should be available to the owner of the land including density transfer and other mechanisms as may be adopted. These incentives will be provided for the purpose of encouraging the preservation of natural watercourses without creating undue hardship on the owner of properties following these policies. (AI 60, 134, 135)

**Vegetation**

**OS 9.1.** Update the Vegetation Map for Western Riverside County in consultation with the California Department of Fish and Wildlife, the Natural Diversity Data Base, the United States Forest Service, and other knowledgeable agencies. The County of Riverside shall also provide these agencies with data as needed. (AI 11)
OS 9.2. Expand Vegetation mapping to include the eastern portion of the County of Riverside. (AI 11)

OS 9.3. Maintain and conserve superior examples of native trees, natural vegetation, stands of established trees, and other features for ecosystem, aesthetic, and water conservation purposes. (AI 3, 79)

OS 9.4. Conserve the oak tree resources in the county. (AI 3, 77, 78)

OS 9.5. Encourage research and education on the effects of smog and other forms of pollution on human health and on natural vegetation.

OS 9.6. Conserve important traditional Native American plant gathering resource areas.

Multiple Species Habitat Conservation Plans

OS 17.1. Enforce the provisions of applicable MSHCP’s and implement related Riverside County policies when conducting review of possible legislative actions such as general plan amendments, zoning ordinance amendments, etc. including policies regarding the handling of private and public stand alone applications for general plan amendments, lot line adjustments and zoning ordinance amendments that are not accompanied by, or associated with, an application to subdivide or other land use development application. Every stand alone application shall require an initial Habitat Evaluation and Acquisition Negotiation Process (HANS) assessment and such assessment shall be made by the Planning Department’s Environmental Programs Division. Habitat assessment and species-specific focused surveys shall not be required as part of this initial HANS assessment for stand alone applications but will be required when a development proposal or land use application to subsequently subdivide, grade or build on the property is submitted to the County.

OS 17.2. Enforce the provisions of applicable MSHCP’s and implement related Riverside County policies when conducting review of development applications.

OS 17.3. Enforce the provisions of applicable MSHCP’s and implement related Riverside County policies when developing transportation or other infrastructure projects that have been designated as covered activities in the applicable MSHCP.

Environmentally Sensitive Lands

OS 18.1. Preserve multi-species habitat resources in the County of Riverside through the enforcement of the provisions of applicable MSHCP’s and through implementing related Riverside County policies.

OS 18.2. Provide incentives to landowners that will encourage the protection of significant resources in the county beyond the preservation and/or conservation required to mitigate project impacts. (AI 9)

OS 18.3. Prohibit the planting or introduction of invasive, non-native species to watercourses, their banks, riparian areas, or buffering setbacks.

OS 18.4. Develop standards for the management of private conservation easements and conservation lots in fee title. For areas with watercourses, apply special standards a – f (below) for their protection, and apply standards g-j (below) generally:

a. For conservation lands with watercourses, conform easement boundaries to setback conditions that will preserve natural flows and changes in the natural boundaries of a watercourse and its protective riparian habitat.

b. Use only “open” fencing that permits the movement of wildlife, and limit fencing to locations outside of setbacks to watercourses (no fencing is permitted to cross the banks or channel of a watercourse, unless no other option is available).

c. Allow fuel modification only to the outside of buffering vegetation (riparian vegetation and vegetation on slopes that buffer the watercourse from erosion and storm water pollution).

d. No planting of non-native invasive species is permitted.
e. No lighting of watercourse area is permitted.
f. Prohibit the use of pesticides and herbicides known to harm aquatic species and sensitive amphibians.
g. Ensure that lands under control of Homeowner’s Associations employ an experienced nonprofit conservation group or agency to manage/maintain the land.
h. Prohibit use of recreational off-road vehicles.
i. Prohibit grazing and alterations of vegetation except for fuel and weed management under close supervision of qualified natural lands manager.
j. For private conservation lands, especially those within criteria cells of MSHCP areas, ensure that easement and fee title agreements provide funding methods sufficient to manage the land in perpetuity.

Open Space, Parks and Recreation

The following policies pertain to open space:

OS 20.1. Preserve and maintain open space that protects County environmental and other nonrenewable resources and maximizes public health and safety in areas where significant environmental hazards and resources exist.

OS 20.2. Prevent unnecessary extension of public facilities, services, and utilities, for urban uses, into Open Space-Conservation designated areas. (AI 74)

The following policies pertain to parks and recreation:

OS 20.3. Discourage the absorption of dedicated park lands by non-recreational uses, public or private. Where absorption is unavoidable, replace park lands that are absorbed by other uses with similar or improved facilities and programs. (AI 74)

OS 20.4. Provide for the needs of all people in the system of the County recreation sites and facilities, regardless of their socioeconomic status, ethnicity, physical capabilities or age.

OS 20.5. Require that development of recreation facilities occurs concurrent with other development in an area. (AI 3)

OS 20.6. Require new development to provide implementation strategies for the funding of both active and passive parks and recreational sites. (AI 3)

Jurupa Area Plan

The following policies of the County of Riverside General Plan’s Jurupa Area Plan are meant to preserve and protect relevant biological resources, and are applicable to unincorporated County land within the Jurupa Area Plan extent:

Santa Ana River Corridor Policy Area

JURAP 7.1. Protect the multipurpose open space attributes of the Santa Ana River Corridor through adherence to policies in the Flood and Inundation Hazards section of the Safety Element; the Multiple Species Habitat Conservation Plans, Wetlands and the Floodplain and Riparian Area Management sections of the Multipurpose Open Space Element; the Non-Motorized Transportation section of the Circulation Element; and the Open Space, Habitat and Natural Resource Preservation section of the Land Use Element.

JURAP 7.2. Require development, where allowable, to be set back an appropriate distance from the top of bluffs, in order to protect the natural and recreational values of the river and to avoid public responsibility for property damage that could result from soil erosion or future floods.
JURAP 7.3. Encourage future development that borders the Policy Area to design for common access and views to and from the Santa Ana River.

JURAP 7.4. Minimize the disruption of sensitive vegetation and species.

JURAP 7.5. Preserve areas subject to erosive flooding in a natural state.

JURAP 7.6. Encourage recreation development, such as parks and golf courses, along the river banks above and out of erosive flooding areas.

JURAP 7.7. Establish trails and related facilities for riding, hiking, and bicycling for the entire reach of the river connecting to the state- and nationally-designated Orange County and San Bernardino Santa Ana River trails and connected with the countywide system of trails.

JURAP 7.8. Provide for recreational trail use under bridge structures crossing the river, where feasible.

JURAP 7.9. Require private development along the river to provide for riding, hiking, and biking trails and for connection to the countywide system of trails.

JURAP 7.10. Require the placement and design of roads to be compatible with the natural character of the river corridor.

JURAP 7.11. Coordinate with the California Department of Transportation (Caltrans) on future freeway expansions to ensure compatibility with the natural character of the river corridor.

JURAP 7.12. Discourage the addition of local road crossings. If any additional crossing is allowed, careful consideration shall be given to location, design, and landscaping to take advantage of the scenic character of the river and to avoid destruction of natural values.

JURAP 7.13. Discourage utility lines within the river corridor. If approved, lines shall be placed underground where feasible and shall be located in a manner to harmonize with the natural environment and amenity of the river.

JURAP 7.14. Prohibit recreational uses that restrict stream flows in the river in order that such flows will be adequate year round for the maintenance of fish and wildlife.

JURAP 7.15. Participate in the regional planning of the Santa Ana River through the Santa Ana River Watershed Planning Authority and the Santa Ana River Watershed Group.

JURAP 7.16. Require the replacement of ponds lost during the development of dairy lands.

**County of Riverside Oak Tree Management Guidelines**

Riverside County's oak tree management guidelines, approved by the Riverside County Board of Supervisors on March 2, 1993, are intended to provide long-term protection and conservation of oak trees and oak woodlands and provide guidance on establishing baseline oak tree data to develop adequate avoidance, minimization, and/or compensation for impacts on this natural resource. For properties with oak tree resources, the guidelines include the following biological study requirements:

- **Inventory of on-site vegetation**
  - The location and size of individual oak trees that are two (2) inches [diameters at breast height] or larger within proposed roads, driveways, and homesites including their protected zones as identified by a biologist and mapped by a surveyor or engineer on a map that is the same scale as the project map.
  - An accurate depiction of the distance and direction of all proposed grading
  - Identification of boundaries of plant communities
Dead or dying trees within proposed roads, driveways, or homesites shall be identified and evaluated for their value to cavity nesting birds.

- Impacts of the proposed development shall be identified and quantified.
- All possible options for mitigation measures shall be identified, including redesign/clustering, if impacts cannot be avoided by the project as proposed.
- The biological report shall include required mitigation, consistent with CEQA and applicable State or County codes and ordinances.
- The mitigation program shall be incorporated into the project’s conditions of approval.

Refer to the guideline document for additional guidelines and design provisions.

**County of Riverside Tree Removal Ordinance**

Ordinance No. 559 (as amended through 559.7 and as provided for in Ordinance No. 725) is an ordinance of the County of Riverside regulating the removal of trees (County of Riverside 2000). This ordinance states that, “No person shall remove any living native tree on any parcel or property greater than one-half acre in size, located in an area above 5,000 feet in elevation and within the unincorporated area of the County of Riverside, without first obtaining a permit to do so, unless exempted by the provisions of Section 4 of this ordinance.”

The project area is below 5,000 feet of elevation; therefore, a tree removal permit is not required for areas within unincorporated Riverside County.

**City of Riverside**

**City of Riverside General Plan**

California state planning law requires each City and County to adopt a comprehensive, long-term general plan for the physical development of the area within its jurisdiction and of any land outside its boundaries that bears relations to its land use planning activities. The City of Riverside General Plan was adopted in November 2007. The General Plan is a long-range policy-planning document that defines the framework by which the County’s physical and economic resources are to be managed over time. The goals and policies contained in the General Plan are provided to guide the County’s decision-makers. The seven state-mandated elements are included in the General Plan: Land Use, Circulation, Housing, Conservation, Open Space, Safety, and Noise. In addition, the City of Riverside has also chosen to address Arts and Culture, and Education, which are optional elements.

The Open Space and Conservation Element is intended to provide guidance in developing and implementing activities that ensure the protection of Riverside’s open space areas, scenic resources, and hillsides. The following are relevant goals, objectives, and policies contained within the Open Space and Conservation Element:

- **Objective OS-1**: Preserve and expand open space areas and linkages throughout the City and sphere of influence to protect the natural and visual character of the community and to provide for appropriate active and passive recreational uses.
- **Policy OS.1.1**: Protect and preserve open space and natural habitat wherever possible.
- **Objective OS-5**: Protect biotic communities and critical habitats for endangered species throughout the General Plan Area.
Policy OS-5.4: Protect native plant communities in the General Plan Area, including sage scrub, riparian areas, and vernal pools, consistent with the MSHCP.

Objective OS-6: Preserve and maintain wildlife movement corridors.

Policy OS-6.1: Protect and enhance known wildlife migratory corridors and create new corridors as feasible.

Policy OS-6.2: Support regional and local efforts to acquire, develop and maintain open space linkages.

Policy OS-6.3: Preserve the integrity of Riverside's arroyos and riparian habitat areas through the preservation of native plants.

Objective OS-7: Turn the Santa Ana River Task Force "Vision" into reality.

Policy OS-7.3: Preserve and expand open space along the Santa Ana River to protect water quality, riparian habitat and recreational uses.

City of Jurupa Valley

City of Jurupa Valley General Plan

The City of Jurupa Valley's General Plan was adopted on September 7, 2017. The General Plan is the primary tool guiding the development and character of Jurupa Valley for the next 5 to 10 years. The elements contained in the General Plan are Land Use; Open Space/Conservation; Mobility; Community Safety, Services & Facilities; Noise; Housing; Air Quality; Environmental Justice; Healthy Communities; and, Economic Sustainability.

The following policies and program sections of the City of Jurupa Valley's General Plan are relevant to biological resources:

COS 1 – Biological Resources

Policies:

COS 1.1. Habitat Conservation. Conserve key habitats, including existing wetlands and California native plant communities, with a focus on protecting and restoring the following endangered species habitats:

1. Conserve alluvial fan sage scrub associated with the Santa Ana River to support key populations of Santa Ana River woolly-star (Eríastrum densifolium sanctorum).

2. Conserve clay soils to support key populations of many-stemmed liveforever plants (Dudleya multicaulis) known to occur along the Jurupa Valley portion of the Santa Ana River.

3. Conserve known populations of least Bell’s vireo (Vireo bellii pusillus) and southwestern willow flycatcher (Empidonax traillii extimus) along the Santa Ana River.

4. Conserve large intact habitat areas consisting of coastal sage scrub, chaparral, and grasslands to support known locations of coastal California gnatcatcher (Polioptila californica).

5. Conserve grassland and coastal sage scrub supporting known populations of San Bernardino kangaroo rat (Dipodomys merriami parvus) in the Jurupa Mountains.

6. Conserve grasslands adjacent to sage scrub for foraging habitat for raptors.

7. Conserve riparian areas, including river basin, creeks, streams, vernal springs, seeps and other natural water features.
**COS 1.2.** Protection of Significant Trees. Protect and preserve significant trees, as determined by the City Council upon the recommendation of the Planning Commission. Significant trees are those trees that make substantial contributions to natural habitat or to the urban landscape due to their species, size, or rarity. In particular, California native trees should be protected.

**COS 1.3.** Other Significant Vegetation. Maintain and conserve superior examples of vegetation, including: agricultural wind screen plantings, street trees, stands of mature native and non-native trees, and other features of ecological, aesthetic, and conservation value.

**COS 1.4.** Soil Conservation and Landform Modification. Public and private development projects shall be designed to prevent soil erosion, minimize landform modifications to avoid habitat disturbance, and conserve and reuse on-site soils.

**Program:**

**COS 1.1.1.** Riparian Corridors. Identify and protect riparian corridors through zoning, easements, or other measures that ensure effective, long-term conservation.

**COS 1.1.2.** Public Information. Provide public information materials regarding the City’s sensitive habitats, the values of watershed, biological resources, and sensitive habitats, and how to protect them.

**COS 1.1.3.** Nature Trail Signage. Working with Community Services Districts and other agencies, help create minimal and appropriate signage along major trails (e.g., Santa Ana River and Jurupa Mountains) for educational outreach about critical habitats and native plant and animal species.

**COS 1.1.4.** Urban Encroachment. Amend the Municipal Code to regulate the establishment or encroachment of non-compatible land uses or activities in habitat areas and passive open space, such as commercial uses, off-road motorized vehicle use, off-trail, non-motorized vehicle use, hang gliding, grading, or other activities that conflict with biological resource conservation goals or policies.

**COS 1.1.5.** Volunteer Conservation Programs. Working with community volunteers, conservation clubs, youth groups, and recreation and conservation agencies, help plan and support conservation activities such as habitat restoration, interpretive signage and tours, trail building, erosion control, and litter removal.

**COS 1.1.6.** Tree Protection Ordinance. Develop a Tree Protection Ordinance.

**COS 2 – Wildlife Habitat**

**Policies:**

**COS 2.1.** MSHCP Implementation. Implement provisions of the MSHCP when conducting review of development applications, General Plan amendments/zoning changes, transportation, or other infrastructure projects that are covered activities in the MSHCP.

**COS 2.2.** Wildlife Corridors. Identify and maintain a continuous wildlife corridor along the City’s northern boundary through the Jurupa Mountains and along the Santa Ana River from the northern boundary to the City’s western boundary. Condition development approvals to ensure that important corridors for wildlife movement and dispersal are protected and not interrupted by walls, fences, roadways or other obstructions. Features of particular importance to wildlife include riparian corridors, wetlands, streams, springs, and protected natural areas with cover and water. Linkages and corridors shall be provided to maintain connections between habitat areas.

**COS 2.3.** Biological Reports. Require the preparation of biological reports to assess the impacts of development and provide mitigation for impacts to biological resources when reviewing discretionary development projects with the potential to affect adversely wildlife habitat.

**Program:**
COS 2.1.1. Preservation Incentives. Develop and provide incentives to private landowners that will encourage the protection of significant wildlife habitat resources, such as density averaging, transfer of development credits, tax incentives, and grants.

COS 2.1.2. Regulation and Prevention of Destructive Practices. Develop and adopt regulations that effectively regulate dumping, camping, off-road vehicle use, illegal entry, and polluting within protected conservation areas such as the Santa Ana River corridor and the Jurupa Hills along the north City boundary.

COS 3 – Water Resources

Policies:

COS 3.1. Water Use Planning. Adopt and strive for the most efficient available water conservation practices in the City’s operations and planning, and encourage community services districts and other agencies to do the same. “Most efficient available practices” means actions and equipment that use the least water for a desired outcome, considering available equipment, life-cycle costs, social and environmental side effects, and the regulations of other agencies.

COS 3.2. Multi-Use Consideration. Consider, in planning, land use decisions, and municipal operations, the effects of water supply on urban growth, wildlife habitat, agriculture, and stream flows, and seek to ensure continued water availability for these uses in planning for long-term water supplies. The City will encourage individuals, organizations, and other agencies to follow this policy.

COS 3.3. Water Quality. Employ the best available practices for pollution avoidance and control and encourage others to do the same. “Best available practices” means actions and equipment that result in the highest water quality, considering available equipment, life-cycle costs, social and environmental side effects, and the regulations of other agencies.

COS 3.4. Water Conservation Systems. Encourage the installation of water-conserving systems such as dry wells and graywater systems, where feasible, especially in new developments. The installation of cisterns or infiltrators shall also be encouraged to capture rainwater from roofs for irrigation in the dry season and to reduce runoff during heavy storms.

COS 3.5. Site Water Collection and Retention. Consider requiring design practices such as permeable parking bays and porous parking lots with bermed, landscaped storage areas for rainwater detention as a condition of development approval.

COS 3.6. Landscaping with California Native Plants. Encourage the use of California native plants for drought-resistant landscape planting.

COS 3.7. Edible Landscaping. Encourage the use of edible landscaping in residential areas, streetscapes, public spaces, and parks, including vegetable gardens, herbs, and fruit trees in lieu of large expanses of lawn or other more water-demanding plantings.

Program:

COS 3.1.1. Public Information. Promote and support educational outreach programs that provide information services to the public about water conservation techniques, benefits, and water-saving technologies in conjunction with water providers, Riverside County, community services districts, and other entities.

COS 3.1.2. Regional Cooperation. Monitor and participate in regional activities addressing water resources, ground-water and water quality to help ensure adequate and safe water supplies for existing and future residents and businesses.

Water Quality Policies:

COS 3.8. Wastewater Treatment. Encourage the use of innovative and creative techniques for wastewater treatment.
COS 3.9. Pollution Discharge. Minimize pollutant discharge into storm drainage systems and natural drainage and aquifers.

COS 3.10. Regional Cooperation. Support efforts to create additional water storage where needed, in cooperation with federal, state, community services districts, the Riverside County Flood Control District, and other water authorities. Additionally, support and/or engage in water banking in conjunction with these agencies where appropriate, as needed.

COS 3.11. Aquifer Protection. Require that aquifer water-recharge areas are preserved and protected.

COS 3.12. Drainage Systems in Development Projects. Require that developers and designers incorporate natural drainage systems into development projects where appropriate and feasible.

COS 3.13. Storm Water Retention. Retain storm water at or near the site of generation for percolation into the groundwater to conserve it for future uses and to mitigate adjacent flooding.

COS 3.14. Natural Channels. Collaborate with the Riverside County Flood Control District to promote natural approaches to managing streams and avoid lined, non-porous channels to the maximum extent possible where groundwater recharge is likely to occur.

COS 3.15. Water Retention Incentives. Consider granting incentives to landowners to preserve natural ground water recharge areas, through measures such as density averaging.

Water Quality Program:

COS 3.16. Aquifer Recharge. Participate in the development, implementation, and maintenance of a program to recharge the aquifers underlying the City and Western Riverside County, where feasible and appropriate. The program shall make use of flood and other waters to offset existing and future groundwater pumping, except where:

1. Groundwater quality would be reduced;
2. Available groundwater aquifers are full; or
3. Rising water tables threaten the stability of existing structures.

Floodplain and Riparian Area Management Policy:

COS 3.17. Environmental Mitigation. Encourage and, where possible, require that substantial modifications of a floodplain be designed to reduce adverse environmental effects to the maximum extent feasible, considering the following factors:

1. Stream scour
2. Erosion protection and sedimentation
3. Wildlife habitat and linkages
4. Groundwater recharge capability

5. Adjacent property

6. Designed to achieve a natural effect. Examples could include soft riparian bottoms, riparian corridors within the floodway, and gentle and modulating bank slopes, wide and shallow floodways, minimization of visible use of concrete, and landscaping with California native plants to the maximum extent possible. A site-specific hydrologic study may be required.

**COS 3.18.** Setbacks. Based upon site-specific study, all development shall be set back from the designated floodway boundary or top of bank, whichever is most appropriate, a distance adequate to address the following issues:

1. Public safety,
2. Erosion,
3. Riparian or wetland buffer,
4. Wildlife movement corridor or linkage, and
5. Slopes

**COS 3.19.** Trails. Consider designating floodway setbacks to accommodate greenways, trails, and recreation opportunities and allowing such uses within floodways, where appropriate.

**COS 3.20.** Riparian Area Preservation. Require development projects to preserve and enhance native riparian habitat and prevent obstruction of natural watercourses. Zoning incentives, such as transfer of development credits, should be used to the maximum extent possible.

**COS 3.21.** Ecotones. Identify and, to the maximum extent possible, conserve remaining upland habitat areas, or “ecotones” adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species.

**Floodplain and Riparian Area Management Program:**

**COS 3.14.** Floodway Protection and Enhancement. Working with other responsible agencies, help implement the following actions:

1. Prepare an inventory of natural areas that have been degraded and list sites in priority order, for restoration efforts.
2. Revegetate disturbed areas using native plants.
4. Remove invasive, non-native plant species in natural habitat areas, and prevent the introduction or spread of invasive, non-native species.
5. Strongly discourage the placement of and, where possible, remove man-made elements such as buildings, paving, structural elements, concrete lining of waterways, signs, streets, and utilities within floodways or floodplains, unless they are needed for public health or safety, or for implementation of City plans.
6. Require that suitably sized access corridors be provided and/or maintained through or under new and previously established, man-made obstacles to wildlife movement (such as appropriately sized culverts under arterial streets, highways, and other major roads).
7. Prohibit camping, off-road vehicles, hunting and other activities that are not compatible with floodplain health and preservation.
8. Remove trash, debris, and contaminants, using methods that minimally disrupt the open-space resources.
9. Provide continuing community education and outreach for all citizens, youth, and youth groups, and property owners on open space and natural resource values, programs, and responsibilities.

10. Enlist the help of volunteers, youth and service groups, and academic programs in restoring and monitoring habitat health.

**COS 8 – Open Space and Recreation Resources**

**Policies:**

**COS 8.1.** Environmental Resource Protection. Preserve and maintain open space that protects environmental resources and protects public health and safety.

**COS 8.2.** Extension of Public Facilities. Avoid the extension of public streets, facilities, services, and utilities for urban uses into areas designated as Open Space in the General Plan.

**COS 8.3.** Conversion of Recreation and Open Space Uses. Discourage the conversion of dedicated parklands and designated open space to non-recreational or non-open space uses. Where conversion is unavoidable, require developers or responsible agencies to replace parklands that are converted to other uses on a 2-for-1-acre basis, with similar or improved facilities and programs, and open space with land of equivalent open space value.

**COS 8.4.** Equal Access to Recreation and Open Space Resources. Ensure that the City’s open space and recreational network accommodates the needs of all residents, regardless of their income, ethnicity, physical capabilities, or age.

**COS 8.5.** Parkland Implementation Strategies. Require new development to provide funding and/or long-term implementation strategies for the acquisition and improvement of active and passive parks, open space, and recreational sites, when appropriate.

**COS 8.6.** Provision of Recreation Facilities. Require that parkland or open space dedication and improvement occur prior to, or concurrent with, construction, as a condition of approval of new residential subdivisions (Figure 4-21, of Jurupa Valley General Plan).

**COS 8.7.** Public Access. Provide public access to open space resources when doing so is consistent with protection of the resources, and with the security and privacy of affected landowners and occupants. Access will generally be limited to non-vehicular movement, and may be restricted in sensitive areas.

**COS 8.8.** Trails Network. Establish an off-street trails network, linking residential/equestrian areas, local open space attractions, staging areas, and regional trail connections, integrating elements of the JARPD’s [Jurupa Area Recreation and Park District] Vision for Master Trails Plan (Appendix 16.0) as determined appropriate by the City Council.

**COS 8.9.** Open Space Enhancement and Restoration. Encourage, and, as budget resources allow, support the enhancement and restoration of permanently dedicated open space and trail easements. Enhancements may include trail clearing, erosion protection, drainage, fencing, revegetation, trash clean up, directional and interpretive signage, and other improvements the City Council determines necessary for public health and safety.

**COS 8.10.** Fire Prevention Activities. Conduct fire prevention activities such as fuel clearance or thinning, grading, prescribed burns, or other activities pursuant to an approved Conservation Plan, and under the supervision of state and local wildlife authorities and CALFIRE representatives, except in an emergency. Habitat preservation shall be given equal priority with fire prevention.

**Programs:**

**COS 8.1.1.** Protect Open Space Resources. Take the following actions to protect open space, and encourage individuals, organizations, and other agencies to take the same actions within their areas of responsibility and jurisdiction:
a. Open Space Designation. Apply Open Space or Agriculture zoning to private property where equitable development potential is granted to the property owner for the remainder of the land, as appropriate and consistent with General Plan goals and policies.

b. Open Space and Trails Dedication. Preserve or enhance open space and trails resources through application of conditions of subdivision and development approvals, consistent with General Plan goals and policies, including dedications of fee ownership or easements where necessary and appropriate.

c. Donations and Grants. Seek and use grants, donations, other revenue sources, and long-term financing mechanisms to purchase fee ownership or easements. The City will consider allocating funding for open space acquisition and protection, and will explore all potential funding sources and other creative incentive programs, including general obligation bonds, sales tax increase, property transfer tax, assessment districts, tax incentives, and state and federal loans and grants.

d. Interagency Cooperation. Promote interagency cooperation for open space acquisition, greenbelt, creeks, wetlands, and wildlife habitat protection in open space areas by coordinating with other government agencies and organizations having interest or expertise in resource protection.

e. Taxes and Fees. Avoid imposing taxes or fees that discourage dedication, improvement and retention of open space, trails, or agricultural uses.

Encroachment/Land Use Permits

The project sites overlap portions of land owned by the City of Riverside, City of Jurupa Valley, County of Riverside, Riverside-Corona Resource Conservation District, and/or CDFW; thus, encroachment or other land use permits may need to be acquired from these entities prior to construction on lands that they own.

The upper 260 feet of the Lower Hole Creek site is owned by the City of Riverside. The remaining lower portion is owned by CDFW. The Hidden Valley Creek site is owned by CDFW and managed by Riverside County Parks and Open Space District. Encroachment permits may need to be obtained from CDFW. Please refer to Chapter 2, Project Description, Section 2.9, for additional land use approvals potentially required for the project.

3.3.2 Environmental Setting

An overview of the existing site conditions and biological resources for each of the tributary restoration and mitigation sites is provided below. The sites are Anza Creek, Old Ranch Creek, Lower Hole Creek, and Hidden Valley Creek. The sites are located in the cities of Riverside and Jurupa Valley, and unincorporated portions of Riverside County (Figure 3.3-1). The Anza Creek and Old Ranch Creek sites occupy the same overall area on the Santa Ana River's southern floodplain and have been combined for discussion purposes. The information summarized for each site includes the following.

- An overview of general site conditions.
- A description of habitats and sensitive species with potential to occur at the sites.
- Results of the baseline surveys (vegetation, invasive species, jurisdictional delineation, and wetland condition).

Technical studies and reports evaluated for this analysis include the Opportunities and Constraints for Tributary Restoration Sites Report (provided as Appendix B), which includes the Vegetation
Mapping and Sensitive Plant Surveys Report, the Aquatic Species Habitat Assessment Report, the Riparian Bird Survey and Habitat Assessment Report, the Habitat Assessment and Surveys for Los Angeles Pocket Mouse, Black-tailed Jackrabbit, and Coast Horned Lizard Report, the Habitat Assessment for Coastal California Gnatcatcher and Burrowing Owl Report, the Jurisdictional Delineation Report, and the Wetland Condition Assessment Report. Refer to these technical reports for more detailed discussions of the site conditions, descriptions of habitats and sensitive species, and methods and results of baseline surveys.

Literature Review

A literature review was conducted to evaluate the environmental setting of the tributaries restoration and mitigation sites and identify potential special-status biological resources that may be found within them (Table 3.3-3). The review included a search of the California Natural Diversity Database (CNDDB) and the CNPS Inventory of Rare and Endangered Plants for the 7.5-minute U.S. Geological Survey (USGS) quadrangle containing the tributary restoration sites (Riverside West) and the surrounding eight quadrangles (Corona North, Corona South, Fontana, Guasti, Lake Mathews, Riverside East, San Bernardino South, and Steele Peak). The USFWS Information for Planning and Consultation database, which maintains a list of threatened and endangered plant and wildlife species, was also queried for the project sites and vicinity, as was the NMFS quadrangle-based database. Additionally, literature detailing the habitat requirements of special-status species, the most recent USFWS critical habitat maps, and the Calflora database of rare plant observations were reviewed. Results of the literature review and database queries are shown on Figure 3.3-3.

In addition, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA/NRCS 2018) was reviewed for the tributary restoration sites. The soil data were then evaluated for the potential to support rare vegetation communities, plants, and/or wildlife.

A comprehensive list of special-status species has been compiled for the project sites. Field verification, baseline habitat assessments, vegetation mapping, and sensitive species database queries identified 128 special-status species and 9 sensitive natural communities to be evaluated for potential to occur within the sites. Of these, 43 special-status species and 6 sensitive natural communities were either observed or may occur at the restoration sites based on the presence of suitable habitat and proximity of previous observations (Table 3.3-3). These species are associated with stream, wetland, riparian, grassland, scrub, forest, and woodland habitats that present at the sites.
Figure 3.3-3
Designated Critical Habitat Map Overview
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend
- Expanded Mitigation Reserve Program Phase II
- Tributaries Restoration Project and Mitigation Reserve Program Phase I
- 9-quad Search Area (USGS 7.5')
- Critical Habitat (USFWS)

Common Name
- Arroyo (=arroyo southwestern) toad
- Coastal California gnatcatcher
- Least Bell's vireo
- San Bernardino Merriam's kangaroo rat
- Santa Ana sucker
- Southwestern willow flycatcher
- Yellow-billed Cuckoo

CNDDB Records
- Plants
- Animal
- Terrestrial Community
- Aquatic Community

Source: ICF, USFWS, USGS; CNDDB 2019
Species with low potential to occur at the sites are not anticipated to be affected by the project; thus, these species are listed in Table 3.3-3 but are not discussed further in this section with the exception of California gnatcatcher and western burrowing owl. These species are considered to have a low potential to occur; however, protocol surveys were not conducted and a conservative approach has been taken in which the project will assume presence and proceed with western burrowing owl protocol surveys as prescribed by CDFW (2012), prior to, and within 12 months of, construction. Western burrowing owl surveys are required by the WRCMSHCP. Species with moderate or high potential to occur and species that are known to be present at the sites are discussed in the Project Setting and in Section 3.3.3, Environmental Impacts below. Refer to Table 3.3-3 for habitat requirements and evaluations of each species’ and sensitive natural community’s potential to occur within the tributary restoration sites.

The sensitive natural vegetation communities within the proposed project boundaries are described below. Vegetation communities are assemblages of plant species that occur together in the same area, which are defined by species composition and relative abundance. Vegetation communities are described using A Manual of California Vegetation, 2nd Edition (Sawyer et al. 2009).

**Arrow Weed Thickets**

Arrow Weed Thicket Alliance is defined by the dominance or co-dominance of arrow weed (*Pluchea sericea*) with iodine bush (*Allenrollea occidentalis*), salt bush (*Atriplex* spp.), and mulefat (*Baccharis salicifolia*) in the shrub layer. Emergent trees include Fremont poplar (*Populus fremontii*), if present. Arrow Weed Thickets community is considered by CDFW to be a sensitive natural community.

**Black Willow Thickets**

The Black Willow Thicket Alliance is defined by the dominance of any single or combination of tree species of willow (*Salix* spp.), such as black (*Salix gooddingii*), red (*Salix laevigata*), or arroyo (*Salix lasiolepis*). Understory scrub species include mulefat (*Baccharis salicifolia*) and coyote bush (*Baccharis pilularis*). Black Willow Thickets community is considered by CDFW to be a sensitive natural community.

**Black Willow/Fremont Cottonwood Thickets**

Black Willow/Fremont Cottonwood Thicket Alliance is defined by the co-dominance of black willow (*Salix gooddingii*) with Fremont Cottonwood (*Populus fremontii*). Other willow species (*Salix* spp.) may be present. Understory scrub species include mulefat (*Baccharis salicifolia*) and coyote bush (*Baccharis pilularis*). Black Willow/Fremont Cottonwood Thickets community is considered by CDFW to be a sensitive natural community.

**California Buckwheat Scrub**

California Buckwheat Scrub Alliance is defined the dominance of California buckwheat (*Eriogonum fasciculatum*) in the shrub layer, or co-dominant with California sagebrush (*Artemisia californica*), coyote bush (*Baccharis pilularis*), sticky monkey-flower (*Diplacus aurantiacus*), sunflower (*Encelia* spp.), and sages (*Salvia* spp.). This community is not considered by CDFW to be a sensitive natural community.
California Sycamore Woodlands

California Sycamore Woodlands Alliance is defined by the dominance or co-dominance of California sycamore (*Platanus racemose*) with white alder (*Alnus rhombifolia*), Southern California walnut (*Juglans californica*), Fremont's cottonwood (*Populus fremontii*), coast live oak (*Quercus agrifolia*), or willow (*Salix* spp.) within the tree layer. California Sycamore Woodlands are considered a CDFW sensitive natural community.

Cattail Marshes

Cattail Marsh Alliance is defined by the dominance or co-dominance of cattail species (*Typha* spp.) including narrowleaf cattail (*Typha angustifolia*), southern cattail (*Typha domingensis*), or bulrush (*Typha laurifolia*) within the herbaceous layer. Additional herbaceous species that may be present include creeping bentgrass (*Agrostis stolonifera*), pacific silverweed (*Argentina egedei*), sedges (*Cyperus* spp.), saltgrass (*Distichlis spicata*), spike rush (*Eleocharis macrostachya*), northern giant horsetail (*Equisetum telmateia*), and rushes (*Juncus* spp.). Cattail Marshes are not considered a CDFW sensitive natural community.

Fremont Cottonwood Forest

Fremont Cottonwood Forest Alliance is defined by the dominance or co-dominance of Fremont's cottonwood (*Populus fremontii*) with California sycamore (*Platanus racemose*), coast live oak (*Quercus agrifolia*), and willow (*Salix* spp.) within the tree layer. Shrub layer may include mulefat (*Baccharis salicifolia*). This community is considered a CDFW sensitive natural community.

Fremont Cottonwood/Willow/Mulefat Forest

The Fremont Cottonwood/Willow/Mulefat Forest Alliance is a community in which the Fremont Cottonwood Forest and Black Willow Thicket Alliances described above are co-dominant with mulefat (*Baccharis salicifolia*). This community is considered a CDFW sensitive natural community.

Fremont Cottonwood/Willow/Wild Grape Forest

The Fremont Cottonwood/Willow/Wild Grape Forest Alliance is a community in which the Fremont Cottonwood Forest and Black Willow Thicket Alliances described above are co-dominant in the tree layer. California wild grape (*Vitis californica*) is dominant or co-dominant in the shrub layer with fourwringed saltbush (*Atriplex canescens*), pacific blackberry (*Rubus ursinus*), or arrow weed (*Pluchea sericea*). This community is considered a CDFW sensitive natural community.

Mulefat Thickets

The Mulefat Thickets alliance is defined by the dominance or co-dominance of mulefat (*Baccharis salicifolia*) with California sagebrush (*Artemisia californica*), willow baccharis (*Baccharis salicina*), and coyote bush (*Baccharis pilularis*) within the shrub layer. Tree species may include willows (*Salix* spp.), elderberry (*Sambucus nigra*), oak (*Quercus* spp.), California sycamore (*Platanus racemosa*), or Fremont’s poplar (*Populus fremontii*). Mulefat Thickets are not considered a CDFW sensitive natural community.
### Table 3.3.3. Special-status Species and Sensitive Natural Communities with Potential to Occur at the Proposed Project Sites

<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)</th>
<th>Critical Habitat within Project Sites</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Justification</th>
<th>Current Habitat Suitability (“S”) and Potential Suitability After Restoration (“R”), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fish Species</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Santa Ana sucker (Catostomus santaanae)</td>
<td>FT/-/-</td>
<td>Yes - only in Santa Ana River mainstem, not in tributaries</td>
<td>Yes</td>
<td>Benthic species using sand, cobble, and boulder substrates for various life stages, cool, clear water, and benthic algae. Adults require coarse substrates free of silt and sand to graze algae.</td>
<td>Low to Moderate – Suitable habitat present. Species occasionally observed at wetted areas within the sites, particularly Anza Creek after high-flow events, which temporarily provide habitat. Also observed in the mainstem Santa Ana River, including areas adjacent to Anza Creek as recently as 2018 (Appendix B).</td>
<td></td>
<td>S S R</td>
</tr>
</tbody>
</table>
## Biological Resources

<table>
<thead>
<tr>
<th>Species (Common/Scientific Name)</th>
<th>Status (Federal/State/CRPR)</th>
<th>Critical Habitat within Project Sites</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arroyo chub (Gila orcutti)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>Yes</td>
<td>Slow to moderate flows in stream channels or backwaters with sand or cobble bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.</td>
<td>Moderate to High – Species observed in mainstem of Santa Ana River, including areas adjacent to project sites in 2001 and 2018 (CDFW 2018).</td>
<td>Anza Creek/Old Ranch Creek</td>
</tr>
<tr>
<td>Santa Ana speckled dace (Rhinichthys osculus ssp.)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>Yes</td>
<td>Requires permanent flowing streams with summer water temps of 17–20°C. Usually inhabits shallow cobble and gravel riffles. Overhanging riparian vegetation. Low tolerance for nonnative predatory fishes.</td>
<td>Not expected to occur³ – Most recent documentation in vicinity to project sites in 1996 within the mainstem of Santa Ana River at confluence with Hole Creek (CDFW 2018). Considered extirpated from area.</td>
<td>Santa Ana River</td>
</tr>
</tbody>
</table>

³There are historic records of dace in the lower Santa Ana River above Prado Dam from before 1970 (Swift et al. 1993). There is a more recent record for the species from the mainstem of the Santa Ana River at the confluence with Hole Creek in 1996 (CDFW 2018). However, the species has not been confirmed to be present in the area under study.
### Species Status and Habitat Descriptions

<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Southwestern pond turtle (Actinemys pallida)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>Yes</td>
<td>An aquatic turtle, utilizing ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometer from water for egg-laying.</td>
<td>High – suitable habitat for species is present within project sites. Documented occurrences in Santa Ana River diversion at Prado Wetlands and oxbow pools in Norco (WRCRCA 2011, 2013).</td>
<td>Suitable habitat is present for southwestern pond turtle within the project sites. WRCM&amp;SHCP monitoring for the species has documented occurrences in the Santa Ana River diversion in the Prado Wetlands and at the oxbow pools along the Santa Ana River in Norco (WRCRCA 2011, 2013). Therefore, the species has a high potential to occur within the project sites.</td>
</tr>
</tbody>
</table>

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Observations in the vicinity since and is considered extirpated from the area. Therefore, Santa Ana speckled dace are not expected to occur within the project sites.
<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/ State/ CRPR)</th>
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<th>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern California legless lizard (<em>Anniella stebbinsi</em>)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>No</td>
<td>Occurs in sandy or loose loamy soils under sparse vegetation. Variety of habitats; generally in moist, loose soil. Prefers soils with a high moisture content.</td>
<td>High – Suitable habitat for species is present within project sites. Documented occurrence in 2016 within 0.25 miles of Anza Creek/Old Ranch Creek site (CDFW 2018).</td>
<td>Suitable habitat is present within the project sites. The nearest record of occurrence is from 2016 within 0.25 mile of the Anza Creek/Old Ranch Creek project site (CDFW 2018). Therefore, there is a high potential for Southern California legless lizard to occur within the project sites.</td>
</tr>
<tr>
<td>California glossy snake (<em>Arizona elegans occidentalis</em>)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>Yes</td>
<td>Generalist reported from a range of scrub, grassland, and rocky wash habitats, often with loose or sandy soils.</td>
<td>Low – suitable habitat is present within project sites; however, species prefers cismontane habitats. Nearest documented occurrences within 2 miles of species from mid-1900s (CDFW 2018).</td>
<td>Suitable habitat is present within the project sites, although the species is typically found in cismontane habitats. There are multiple nearby records of occurrences within 2 miles of the project sites; however, all are historical occurrences from the mid-1900s (CDFW 2018). Therefore, California glossy snake</td>
</tr>
</tbody>
</table>

- **S**: Suitable habitat is present within the project sites.
- **S**: Suitable habitat is present within the project sites, although the species is typically found in cismontane habitats. There are multiple nearby records of occurrences within 2 miles of the project sites; however, all are historical occurrences from the mid-1900s (CDFW 2018). Therefore, California glossy snake |
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<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal whiptail (<em>Aspidoscelis tigris stejnegeri</em>)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>No</td>
<td>Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.</td>
<td>Moderate – Suitable habitat is present within project sites. Nearest documented occurrences in 1995 and 2001, approximately 5 miles from project sites.</td>
<td>Suitable habitat is present within the project sites. The nearest records of occurrence are approximately 5 miles north and south of the project sites in 1995 and 2001, respectively (CDFW 2018). Therefore, coastal whiptail has a moderate potential to occur within the project sites.</td>
</tr>
<tr>
<td>Red-diamond rattlesnake (<em>Crotalus ruber</em>)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>No</td>
<td>Chaparral, woodland, grassland, and desert areas, typically in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks, or surface cover objects.</td>
<td>Low – suitable habitat is present, though rodent burrows were rare during habitat suitability surveys. Most occurrences within 5 miles date to early or mid-1900s, with one occurrence in 2003 (CDFW 2018).</td>
<td>Suitable habitat is present; however, few rodent burrows were observed during mammal habitat suitability surveys. Most of the nearby records of occurrence within 5 miles of the project sites are historical from the early to mid-1900s, and one is from 2003 (CDFW 2018).</td>
</tr>
</tbody>
</table>
## Species

<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/ State/ CRPR)</th>
<th>Critical Habitat within Project Sites[^2]</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Current Habitat Suitability (“S”) and Potential Suitability After Restoration (“R”), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coast horned lizard</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>No</td>
<td>Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.</td>
<td>Low – poor to moderate quality habitat of limited extent within project sites. Occurrence records within 5 to 10 miles of project sites in 1980s and 1990s. Species was observed in 2017 along Santa Ana River upstream of Van Buren Boulevard (Appendix B).</td>
<td>Suitable habitat is present; however, it is of limited extent and only poor to moderate quality. There are multiple occurrence records within 5–10 miles of the project sites from the 1980s through 1990s (CDFW 2018), and coast horned lizards were observed in 2017 at a neighboring project site along the Santa Ana River adjacent and upstream of Van Buren Boulevard (Appendix B). Therefore, there is a low potential for coast horned lizard to occur within the project area.</td>
</tr>
</tbody>
</table>

[^2]: n/a = not applicable.
<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)¹</th>
<th>Critical Habitat within Project Sites²</th>
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<th>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coast patch-nosed snake (<em>Salvadora hexalepis virgultea</em>)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>No</td>
<td>Brushy or shrubby vegetation in coastal Southern California. Requires small mammal burrows for refuge and overwintering sites.</td>
<td>Low – suitable habitat is present, though few rodent burrows observed during habitat suitability surveys. No occurrences within 10 miles of the project sites (CDFW 2018).</td>
<td>S</td>
</tr>
<tr>
<td>Two-striped gartersnake (<em>Thamnophis hammondii</em>)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>Yes</td>
<td>Essential habitat factors include permanent water source, low gradient topography, and dense multi-storied riparian vegetation.</td>
<td>Moderate – suitable habitat is present within the project sites. No official records of occurrence within 10 miles of the project sites (CDFW 2018). Species has been documented at unknown locations within Riverside County (Nafis 2018), and</td>
<td>S</td>
</tr>
</tbody>
</table>
### Species: South coast gartersnake (*Thamnophis sirtalis infernalis*)

<table>
<thead>
<tr>
<th>Status (Federal/ State/ CRPR)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>-/SSC/-</td>
<td>N/A</td>
<td>Yes</td>
<td>Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.</td>
<td>Moderate – limited documentation of historical occurrence from CNDDB or San Bernardino County Museum. One extinct museum record from Prado Basin (Jennings and Hayes 1994). Two records from HERP database in Prado Basin in 2007 and 2011 (HERP 2014). Recent occurrence in Santa Ana River upstream of Interstate 15 (USGS).</td>
<td>S S S</td>
</tr>
</tbody>
</table>

Therefore, there is a moderate potential for two-striped gartersnake to occur within the project sites.

Historical occurrence data is sparse. There are no San Bernardino County Museum records for San Bernardino County, or CNDDB records for Riverside and San Bernardino Counties. Jennings and Hayes (1994) show one extinct museum record from Prado Basin. However, the HERP database has two records from Prado Basin in 2007 and 2011 (HERP 2014), and USGS has recent occurrence records from the Santa Ana River upstream of Interstate 15. Therefore, there is a moderate potential for south coast gartersnake to occur.
<table>
<thead>
<tr>
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<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Current Habitat Suitability (“S”) and Potential Suitability After Restoration (“R”), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grasshopper sparrow</td>
<td>/SSC/ (nesting)</td>
<td>N/A</td>
<td>No</td>
<td>Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.</td>
<td>Low (nesting) – habitat is present, though of poor quality due to nonnative species. Multiple observations at Hidden Valley Wildlife Area (eBird 2018). However, although grassland habitat is present within the project sites, it is not dense and is dominated by nonnative species; thus, it is only marginally suitable for grasshopper sparrow. Therefore, there is a moderate potential for individuals of the species to occur in the project sites, but a low potential for nesting.</td>
<td>N/A</td>
</tr>
<tr>
<td>Long-eared owl</td>
<td>/SSC/ (nesting)</td>
<td>N/A</td>
<td>No</td>
<td>Riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak parallel ing stream courses. Require</td>
<td>Low (nesting) – suitable nesting habitat within project sites and potentially suitable foraging habitat adjacent to</td>
<td>There is suitable nesting habitat present within the project sites, and potentially adequate open land for foraging adjacent to</td>
</tr>
<tr>
<td>Species</td>
<td>Status (Federal/State/CRPR)</td>
<td>Critical Habitat within Project Sites</td>
<td>Upper SAR HCP Covered Species</td>
<td>Habitat Descriptions and Requirements</td>
<td>Current Potential to Occur at Project Sites and Justification</td>
<td>Justification</td>
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</tr>
<tr>
<td>Burrowing owl (Athene cunicularia)</td>
<td>-/SSC/- (burrowing sites and some wintering sites)</td>
<td>N/A</td>
<td>Adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.</td>
<td>Observation at Hidden Valley Wildlife Area in 2015 (eBird 2018). Nearest documented occurrence from 1920s approximately 12 miles from the project sites (CDFW 2018).</td>
<td>Project sites. There is an observation recorded at the Hidden Valley Wildlife Area in 2015 (eBird 2018). However, the nearest documented nesting occurrence was a historical record from 1920s in the Chino Hills, approximately 12 miles west of the project sites (CDFW 2018). Therefore, there is a moderate potential for long-eared owl to occur within the project sites, and a low potential for nesting.</td>
<td>- R -</td>
</tr>
<tr>
<td>Species</td>
<td>Status (Federal/ State/ CRPR)¹</td>
<td>Critical Habitat within Project Sites²</td>
<td>Upper SAR HCP Covered Species</td>
<td>Habitat Descriptions and Requirements</td>
<td>Current Potential to Occur at Project Sites and Justification</td>
<td>Current Habitat Suitability (“S”) and Potential Suitability After Restoration (“R”), by Site</td>
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</tr>
<tr>
<td>Clark’s marsh wren *(Cistothorus palustris clarkae)*</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>No</td>
<td>Narrow distribution along the coast of Southern California from the Los Angeles basin south to the Mexican border. Nests in cattail, bulrush, or sedge in banks.</td>
<td>Suitable nesting and foraging habitat present within project sites. In the southern Riverside County, where sub-specific identity needs confirmation,</td>
<td>Anza Creek/ Old Ranch Creek</td>
</tr>
</tbody>
</table>

² = N/A

¹ = Listed only as threatened or endangered under the Federal Endangered Species Act.

² = N/A

³ = No

Current Habitat Suitability: "Su"

Potential Suitability After Restoration: "S"
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>White-tailed kite (Elanus leucurus)</td>
<td>-/SFP/- (nesting)</td>
<td>N/A</td>
<td>No</td>
<td>Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands,</td>
<td>Moderate (nesting) – species has been seen in vicinity of project sites (eBird 2018). Nearest recent records of nesting</td>
<td>Marsh Wrens remain common all year in Prado Flood Control Basin along the Santa Ana River and occur locally along the river between Prado Basin and the city of Riverside (including at Hidden Valley Wildlife Area at the western edge of the city of Riverside) (Shuford and Gardali 2008). There have been many recorded observations of marsh wren in the vicinity of the project sites (eBird 2018). Therefore, Clark's marsh wren has a high potential to occur (nesting and foraging) within the project sites.</td>
</tr>
</tbody>
</table>

Basin and Hidden Valley Wildlife Area (Shuford and Gardali 2008). Several observations in vicinity of project sites (eBird 2018).
### Species: Yellow-breasted Chat

**Icteria virens**

- **Status (Federal/State/CRPR)**: /SSC/- (nesting)
- **Critical Habitat within Project Sites**: N/A
- **Upper SAR HCP Covered Species**: Yes
- **Habitat Descriptions and Requirements**: Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of ground.
- **Current Potential to Occur at Project Sites and Justification**: Present (nesting) – species currently present within project sites. Breeding activities observed at Anza Creek/Old Ranch Creek during surveys in 2016.
- **Current Habitat Suitability ("S") and Potential Suitability After Restoration ("R"), by Site**:
  - **Anza Creek/Old Ranch Creek**: S (species present)
  - **Lower Hole Creek**: S
  - **Hidden Valley Creek**: S (species present)

**Justification**

In 2009, yellow-breasted chats were at Prado Regional Park in 2009 (CDFW 2018). There is a high potential for individuals of the species to occur within the project sites, but only a moderate potential for nesting within the project sites. Suitable habitat is present within the project sites. Yellow-breasted chat currently occurs in riparian habitat within the Santa Ana River and associated tributaries, and breeding activities were observed at the Anza Creek/Old Ranch Creek and Hidden Valley Creek sites during riparian bird surveys in 2016. Therefore, yellow-breasted chat is considered present (nesting) within the project sites.
<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)¹</th>
<th>Critical Habitat within Project Sites²</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal California gnatcatcher <em>Polioptila californica</em></td>
<td>FT/SSC/-</td>
<td>No</td>
<td>Yes</td>
<td>Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.</td>
<td>Low – most recent occurrences approximately 2 miles from project sites in 1990s and 2000s (CDFW 2018, eBird 2018). However, limited suitable habitat within project sites as habitat is small, fragmented, and of poor quality.</td>
<td>R  S  -</td>
</tr>
<tr>
<td>Species</td>
<td>Status (Federal/State/CRPR)</td>
<td>Critical Habitat within Project Sites</td>
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<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Yellow warbler</strong> (<em>Setophaga petechia</em>)</td>
<td>-/SSC/-(nesting)</td>
<td>N/A</td>
<td>No</td>
<td>Riparian plant associations close to water. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.</td>
<td>High (nesting) – species was documented during surveys in 2016, and suitable habitat exists within project sites. Nesting activities documented in vicinity of project sites from 2007–2015 (CDFW 2018).</td>
<td>Suitable habitat present and the species was observed during 2016 project sites surveys. Additionally, there are records of nesting behavior observed within the Santa Ana River corridor in the immediate vicinity of the project sites from 2007–2015 (CDFW 2018). Therefore, there is a high potential for yellow warbler to nest within the project sites.</td>
</tr>
<tr>
<td><strong>Least Bell’s vireo</strong> (<em>Vireo bellii pusillus</em>)</td>
<td>FE/SE/-(nesting)</td>
<td>Yes</td>
<td>Yes</td>
<td>Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mule fat, or mesquite.</td>
<td>Present (nesting) – nesting behavior observed within project sites during 2016 surveys, and suitable habitat exists within project sites.</td>
<td>Suitable habitat is present within the project sites, and individuals and nesting behavior were observed within the project sites during riparian bird surveys in 2016. Therefore, the species is present (including nesting)</td>
</tr>
</tbody>
</table>

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<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)</th>
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<tr>
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<td>-/SSC/-(nesting)</td>
<td>N/A</td>
<td>No</td>
<td>Riparian plant associations close to water. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.</td>
<td>High (nesting) – species was documented during surveys in 2016, and suitable habitat exists within project sites. Nesting activities documented in vicinity of project sites from 2007–2015 (CDFW 2018).</td>
<td>Suitable habitat present and the species was observed during 2016 project sites surveys. Additionally, there are records of nesting behavior observed within the Santa Ana River corridor in the immediate vicinity of the project sites from 2007–2015 (CDFW 2018). Therefore, there is a high potential for yellow warbler to nest within the project sites.</td>
</tr>
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<td><strong>Least Bell’s vireo</strong> (<em>Vireo bellii pusillus</em>)</td>
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<td>Yes</td>
<td>Yes</td>
<td>Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mule fat, or mesquite.</td>
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<th>Justification</th>
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<tr>
<td><strong>Yellow warbler</strong> (<em>Setophaga petechia</em>)</td>
<td>-/SSC/-(nesting)</td>
<td>N/A</td>
<td>No</td>
<td>Riparian plant associations close to water. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.</td>
<td>High (nesting) – species was documented during surveys in 2016, and suitable habitat exists within project sites. Nesting activities documented in vicinity of project sites from 2007–2015 (CDFW 2018).</td>
<td>Suitable habitat present and the species was observed during 2016 project sites surveys. Additionally, there are records of nesting behavior observed within the Santa Ana River corridor in the immediate vicinity of the project sites from 2007–2015 (CDFW 2018). Therefore, there is a high potential for yellow warbler to nest within the project sites.</td>
</tr>
<tr>
<td><strong>Least Bell’s vireo</strong> (<em>Vireo bellii pusillus</em>)</td>
<td>FE/SE/-(nesting)</td>
<td>Yes</td>
<td>Yes</td>
<td>Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mule fat, or mesquite.</td>
<td>Present (nesting) – nesting behavior observed within project sites during 2016 surveys, and suitable habitat exists within project sites.</td>
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<td>-/SSC/-(nesting)</td>
<td>N/A</td>
<td>No</td>
<td>Riparian plant associations close to water. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.</td>
<td>High (nesting) – species was documented during surveys in 2016, and suitable habitat exists within project sites. Nesting activities documented in vicinity of project sites from 2007–2015 (CDFW 2018).</td>
<td>Suitable habitat present and the species was observed during 2016 project sites surveys. Additionally, there are records of nesting behavior observed within the Santa Ana River corridor in the immediate vicinity of the project sites from 2007–2015 (CDFW 2018). Therefore, there is a high potential for yellow warbler to nest within the project sites.</td>
</tr>
<tr>
<td><strong>Least Bell’s vireo</strong> (<em>Vireo bellii pusillus</em>)</td>
<td>FE/SE/-(nesting)</td>
<td>Yes</td>
<td>Yes</td>
<td>Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mule fat, or mesquite.</td>
<td>Present (nesting) – nesting behavior observed within project sites during 2016 surveys, and suitable habitat exists within project sites.</td>
<td>Suitable habitat is present within the project sites, and individuals and nesting behavior were observed within the project sites during riparian bird surveys in 2016. Therefore, the species is present (including nesting)</td>
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</table>

**Current Habitat Suitability ("S") and Potential Suitability After Restoration ("R"), by Site**

<table>
<thead>
<tr>
<th>Anza Creek/Old Ranch Creek</th>
<th>Lower Hole Creek</th>
<th>Hidden Valley Creek</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Species</td>
<td>Status (Federal/State/CRPR)</td>
<td>Critical Habitat within Project Sites</td>
</tr>
<tr>
<td>---------------------------------</td>
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<td>--------------------------------------</td>
</tr>
<tr>
<td>Yellow-headed blackbird</td>
<td>-/SSC/- (nesting)</td>
<td>N/A</td>
</tr>
<tr>
<td><em>(Xanthocephalus xanthocephalus)</em></td>
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</table>
## Species

<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/ State/ CRPR) 1</th>
<th>Critical Habitat within Project Sites 2</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Current Habitat Suitability (“S”) and Potential Suitability After Restoration (“R”), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mammal Species</strong></td>
<td></td>
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</tr>
<tr>
<td>Northwestern San Diego pocket mouse (Chaetodipus fallax fallax)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>No</td>
<td>Coastal scrub, chaparral, grasslands, sagebrush, etc., primarily in western San Diego County, and also in western Riverside and San Bernardino counties. Sandy, herbaceous areas, usually in association with rocks or coarse gravel.</td>
<td>Low – suitable isolated patches of habitat exist within project sites. Nearest documented occurrence of species is from 1999, approximately 4 miles from project sites.</td>
<td>S S S</td>
</tr>
<tr>
<td>Stephens’ kangaroo rat (Dipodomys stephensi)</td>
<td>FE/ST/-</td>
<td>N/A</td>
<td>No</td>
<td>Primarily annual and perennial grasslands, but also occurs in coastal scrub and sagebrush with sparse canopy cover. Prefers buckwheat.</td>
<td>Low – potentially suitable habitat within elevated grassland terraces above Santa Ana River; no suitable habitat within</td>
<td>S S S</td>
</tr>
<tr>
<td>Species</td>
<td>Status (Federal/State/CRPR)</td>
<td>Critical Habitat within Project Sites</td>
<td>Habitat Descriptions and Requirements</td>
<td>Current Potential to Occur at Project Sites and Justification</td>
<td>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</td>
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<td></td>
</tr>
<tr>
<td>chamise, brome grass and filaree. Will burrow into firm soil.</td>
<td>floodplain. Species typically occurs farther south and east in Riverside County, but has been documented near Norco (USFWS 1997). Two documented occurrences within 4 miles of Hidden Valley Creek in 2003 and 2013 (CDFW 2018).</td>
<td>No</td>
<td>There is suitable habitat present within the project sites for foraging and roosting. The nearest records of occurrence are from 1954 near Pedley approximately within a mile of the project sites, and therefore, there is a low potential for SKR to occur within the project sites.</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>chamise, brome grass and filaree. Will burrow into firm soil.</td>
<td>floodplain. Species typically occurs farther south and east in Riverside County, but has been documented near Norco (USFWS 1997). Two documented occurrences within 4 miles of Hidden Valley Creek in 2003 and 2013 (CDFW 2018).</td>
<td>No</td>
<td>There is suitable habitat present within the project sites for foraging and roosting. The nearest records of occurrence are from 1954 near Pedley approximately within a mile of the project sites, and therefore, there is a low potential for SKR to occur within the project sites.</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
</tbody>
</table>

### Species

**Western mastiff bat** *(Eumops perotis californicus)*

- **Status**: (-/SSC/-)
- **Critical Habitat within Project Sites**: N/A
- **Habitat Descriptions and Requirements**: Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.
- **Current Potential to Occur at Project Sites and Justification**: Low (foraging and roosting) – suitable foraging and roosting habitat present within project sites. However, documented occurrences include 1 mile
- **Current Habitat Suitability ("S") and Potential Suitability After Restoration ("R"), by Site**: S S S
### Species

<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)</th>
<th>Critical Habitat within Project Sites</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western yellow bat (Lasiurus xanthurus)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>No</td>
<td>Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.</td>
<td>Moderate (foraging and roosting) - suitable foraging and roosting habitat exists within project sites. Nearest documented occurrence less than a mile from project sites in 1996 (CDFW 2018).</td>
<td>S</td>
</tr>
<tr>
<td>San Diego black-tailed jackrabbit</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>No</td>
<td>Intermediate canopy stages of shrub</td>
<td>Moderate – suitable habitat</td>
<td>There is suitable habitat for within</td>
</tr>
</tbody>
</table>
## Species

<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/ State/ CRPR)</th>
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<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Lepus californicus bennettii)</td>
<td></td>
<td></td>
<td></td>
<td>habitats with open shrub, herbaceous and tree, and herbaceous edges. Coastal sage scrub habitats in Southern California.</td>
<td>exists within project sites. Species documented in 2001 approximately 5 miles from project sites (CDFW 2018).</td>
<td>The nearest recent record of occurrence is from 2001 approximately 5 miles south of the project sites, and there is an historical occurrence within approximately 2 miles of the project sites north of the Santa Ana River (CDFW 2018). Therefore, there is a moderate potential for San Diego black-tailed jackrabbit to occur within the project sites.</td>
</tr>
<tr>
<td>San Diego desert woodrat (Neotoma lepida intermedia)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>No</td>
<td>Coastal scrub of Southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops, rocky cliffs, and slopes.</td>
<td>Low – suitable habitat exists within project sites as small isolated fragments. Nearest recent documented occurrence is approximately 8 miles from the project sites in 1999 (CDFW 2018).</td>
<td>There is limited suitable habitat for San Diego desert woodrat within the project sites. The nearest recent record of occurrence is from 1999 approximately 8 miles south of the project sites (CDFW 2018). Therefore, given the small and isolated fragments of potentially</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Habitat Suitability (“S”) and Potential Suitability After Restoration (“R”), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anza Creek/ Old Ranch Creek</td>
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<tr>
<td>S</td>
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</tbody>
</table>
### Species

<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)¹</th>
<th>Critical Habitat within Project Sites²</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pocketed free-tailed bat</strong> (<em>Nyctinomops femorosaccus</em>)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>No</td>
<td>Variety of arid areas in Southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. Roosts in rocky areas with high cliffs.</td>
<td>Moderate (foraging) – suitable foraging habitat exists within the project site, though no suitable roosting habitat. Several documented occurrences within 1-10 miles of project sites from 1980s (CDFW 2018).</td>
<td>Suitable habitat is present within the project sites for foraging; however no suitable roosting habitat is present. There are multiple records of occurrence of pocketed free-tailed bat within 1-10 miles of the project sites during the 1980s (CDFW 2018). Therefore, there is a moderate potential for the species to occur within the project sites.</td>
</tr>
<tr>
<td><strong>Los Angeles pocket mouse</strong> (<em>Perognathus longimembris brevinasus</em>)</td>
<td>-/SSC/-</td>
<td>N/A</td>
<td>Yes</td>
<td>Lower elevation grasslands and coastal sage communities in and around the Los Angeles Basin. Open ground with fine, sandy soils. May not dig extensive</td>
<td>Low – suitable habitat is present within project site, though it is patchy and limited. Nearest documented occurrence approximately 7</td>
<td>Suitable habitat is present within the project sites, but is of small areas, limited extent, and patchy in distribution. The nearest record of occurrence of Los</td>
</tr>
</tbody>
</table>
### Biological Resources

#### Species

<table>
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<tr>
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<th>Current Potential to Occur at Project Sites and Justification</th>
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<tbody>
<tr>
<td>Angeles pocket mouse</td>
<td>Critical</td>
<td></td>
<td></td>
<td></td>
<td>miles from project sites in 2000 (CDFW 2018).</td>
<td>Angeles pocket mouse is approximately 7 miles northeast of the project sites in 2000 (CDFW 2018). Therefore, there is a low potential for the species to occur within the project sites.</td>
</tr>
</tbody>
</table>

#### Plant Species

<table>
<thead>
<tr>
<th>Plant Species</th>
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<th>Critical Habitat</th>
<th>Habitat</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plummer’s mariposa-lily (<em>Calochortus plummerae</em>)</td>
<td>-/-/4.2</td>
<td>N/A</td>
<td>No</td>
<td>Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest. Occurs on rocky and sandy sites, usually of granitic or alluvial material. Can be very common after fire. 60–2,500 meters.</td>
<td>Suitable habitats with alluvial substrate are present within the project sites (USDA NRCS 2018). The nearest recorded observations are from near Riverside and the Jurupa Hills, as close at 3.5 mile from a project site, from 1998, 2003, and 2011 (CDFW 2018). Plummer’s mariposa-lily was not observed during project surveys. Therefore, due to the presence of suitable habitat and</td>
</tr>
</tbody>
</table>

#### Current Habitat Suitability (“S”) and Potential Suitability After Restoration (“R”), by Site

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<th>Anza Creek/Old Ranch Creek</th>
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<tbody>
<tr>
<td>S</td>
<td>R</td>
<td>S</td>
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</table>
### Species: Smooth tarplant (Centromadia pungens ssp. laevis)

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</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>No</td>
<td>Valley and foothill grassland, chenopod scrub, meadows and seeps, playas, riparian woodland. Alkali meadow, alkali scrub; also in disturbed places. 5-1,170 meters.</td>
<td>High – habitat was documented at Anza Creek/Old Ranch Creek site during surveys. Documented in Hidden Valley Wildlife Reserve in 2004 (CDFW 2018).</td>
<td>Suitable habitat for this species is present within the project sites, and was identified at the Anza Creek/Old Ranch Creek project sites during vegetation mapping surveys. It was also observed in alkali grassland along the access road to Hidden Valley Wildlife Reserve in 2004 (CDFW 2018), and near the Santa Ana River just downstream of the Anza Creek project site in the 1960s (Calflora 2018). Smooth tarplant was not observed during project surveys. Therefore,</td>
<td>S - R</td>
</tr>
</tbody>
</table>

¹ Federal/State/CRPR:
² Status: N/A - No data available for status.
³ Critical Habitat within Project Sites: No - No critical habitat documented within the project sites.

## Current Habitat Suitability ("S") and Potential Suitability After Restoration ("R"), by Site

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<tr>
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<td>-</td>
<td>R</td>
</tr>
<tr>
<td>Species</td>
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<td>Critical Habitat within Project Sites</td>
</tr>
<tr>
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<td>-----------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Parry’s spineflower (Chorizanthe parryi var. parryi)</td>
<td>-/1B.1</td>
<td>N/A</td>
</tr>
<tr>
<td>Species</td>
<td>Status (Federal/State/CRPR)</td>
<td>Critical Habitat within Project Sites</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Snake cholla (&lt;i&gt;Cylindropuntia californica var. californica&lt;/i&gt;)</td>
<td>-/-/1B.1</td>
<td>N/A</td>
</tr>
<tr>
<td>Paniculate tarplant (&lt;i&gt;Deinandra paniculata&lt;/i&gt;)</td>
<td>-/-/4.2</td>
<td>N/A</td>
</tr>
<tr>
<td>Species</td>
<td>Status (Federal/State/CRPR)</td>
<td>Critical Habitat within Project Sites</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Slender-horned spineflower (<em>Dodecahema leptoceras</em>)</td>
<td>FE/SE/1B.1 N/A Yes</td>
<td>Chaparral, cismontane woodland, coastal scrub (alluvial fan sage scrub). Flood deposited terraces and washes; associates include Encelia, Dalea, Lepidospartum, etc. Sandy soils. Typically found on stable older alluvium away from active channels in areas with little flooding disturbance but infrequent surface flows. 200–765 meters.</td>
</tr>
<tr>
<td>Species</td>
<td>Current Habitat Suitability (&quot;S&quot;)</td>
<td>S</td>
</tr>
<tr>
<td>Species</td>
<td>Potential Suitability After Restoration (&quot;R&quot;)</td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Anza Creek/Old Ranch Creek</td>
<td>Lower Hole Creek</td>
</tr>
<tr>
<td>Species</td>
<td>Status (Federal/ State/ CRPR)</td>
<td>Critical Habitat within Project Sites</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Slender-horned spineflower</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

are considered extirpated (CDFW 2018). The nearest contemporary observations from the 2010s were recorded at the Santa Ana River’s floodplain upstream near Highland (at least 15 miles northeast of the project sites), and in Temescal Wash south of Lake Matthews (at least 14 miles south of the project sites) (Calflora 2018, CDFW 2018). Slender-horned spineflower was not observed during project surveys. Therefore, although there is suitable habitat and extant populations upstream in the Santa Ana River Watershed, due to a lack of contemporary observations nearby, there is a
<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/ State/ CRPR)</th>
<th>Critical Habitat within Project Sites</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many-stemmed dudleya <em>Dudleya multicaulis</em></td>
<td>-/-/1B.2</td>
<td>N/A</td>
<td>No</td>
<td>Chaparral, coastal scrub, valley and foothill grassland. In heavy, often clayey soils or grassy slopes, 15–790 meters.</td>
<td>S R S</td>
</tr>
</tbody>
</table>

Low – habitat present within project sites (USDA NRCS 2018). Nearest documented occurrences in 2003 and 2017 approximately 2 miles from project sites. Scrub and grassland habitats and loamy sand/sandy loam soils are present within the project sites (USDA NRCS 2018); thus, there is potentially suitable habitat present. The nearest recent observations were recorded in 2003 and 2017 approximately 2 miles south of the project sites, near the Crestlawn Memorial Cemetery (CDFW 2018, Calflora 2018). Many-stemmed dudleya was not observed during project surveys. Therefore, due to the presence of potentially suitable habitat and distance of previous observations, there
<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)</th>
<th>Critical Habitat within Project Sites</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Ana River woolly-star (Eriastrum densifolium ssp. sanctorum)</td>
<td>FE/SE/1B.1</td>
<td>N/A</td>
<td>Yes</td>
<td>Coastal scrub, chaparral. In sandy soils on river floodplains or terraced fluvial deposits. 180–705 meters.</td>
<td>Present – suitable habitat exists within Hidden Valley Creek site. Species was observed within Anza Creek/Old Ranch Creek site in 2014.</td>
<td>Suitable habitat is present within the Hidden Valley Creek site. This species was observed within the Anza Creek/Old Ranch Creek project sites in 2014.</td>
</tr>
<tr>
<td>Southern California black walnut (Juglans californica)</td>
<td>-/-/4.2</td>
<td>N/A</td>
<td>No</td>
<td>Chaparral, coastal scrub, cismontane woodland. Slopes, canyons, alluvial habitats. 50–900 meters.</td>
<td>High – suitable habitat exists within project sites. Documented occurrences within 1 mile of project sites in 2004 and 2013 (Calflora 2018).</td>
<td>Suitable scrub and alluvial habitat is present at the project sites. Recent observations of Southern California black walnut have been recorded within 1 mile of project sites in 2004 and 2013 (Calflora 2018). The species was not observed during project surveys. Therefore, due to proximity of recent nearby observations and presence of suitable habitat, Southern</td>
</tr>
</tbody>
</table>

1 Status (Federal/State/CRPR): FE = Federal, FE/SE = Federal/State, N/A = Not Applicable, SE/1B.1 = State/1B.1, CRPR = Critical Habitat Protection Rights

2 Critical Habitat within Project Sites: Yes/No

3 Upper SAR HCP Covered Species: Species that are protected under the Upper SAR HCP

4 Habitat Descriptions and Requirements: Detailed descriptions of each species' habitat requirements and distribution

5 Current Potential to Occur at Project Sites: Current potential for species to occur at project sites

6 Justification: Explanation for the current potential to occur at project sites
<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)¹</th>
<th>Critical Habitat within Project Sites²</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coulter’s goldfields (Lasthenia glabrata ssp. coulteri)</td>
<td>-/-/1B.1</td>
<td>N/A</td>
<td>No</td>
<td>Coastal salt marshes, playas, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. 1–1,375 meters.</td>
<td>Low – suitable habitat exists within project sites, though limited in distribution. Nearest documented occurrence to project sites in 1989 approximately 5 miles from project sites (Calflora 2018, CDFW 2018).</td>
<td>California black walnut has a high potential to occur at the project sites. Suitable alkaline grassland habitat is present near the project sites; however, it is of limited distribution. The nearest observation of the species was recorded in 1989, approximately 5 miles south of the project sites near Woodcrest, south of Highway 91 (Calflora 2018; CDFW 2018). Coulter’s goldfields was not observed during project surveys. Therefore, due to proximity of a contemporary observation and presence of limited suitable habitat, the species has a low potential to occur at the project sites.</td>
</tr>
</tbody>
</table>

¹ Federal, State, or CRPR status.
² Critical Habitat within Project Sites: Yes or No.
<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR) (^1)</th>
<th>Critical Habitat within Project Sites (^2)</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Suitability of the Project Sites and Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robinson’s pepper-grass (\textit{Lepidium virginicum} var. \textit{robinsonii})</td>
<td>(-/-/4.3)</td>
<td>N/A</td>
<td>No</td>
<td>Chaparral, coastal scrub. Dry soils, shrubland. 4–1,435 meters.</td>
<td>Suitable scrub habitat is present at the project sites. The nearest observation of the species was recorded in 1952 at Fairmount Park in Riverside, approximately 3 miles east of the project sites. A more recent observation was recorded at Prado Basin in 2010 (Calflora 2018; CDFW 2018).</td>
<td>Suitable scrub habitat is present at the project sites. The species has a moderate potential to occur at the project sites.</td>
</tr>
</tbody>
</table>

Current Habitat Suitability (“S”) and Potential Suitability After Restoration (“R”), by Site

<table>
<thead>
<tr>
<th>Anza Creek/Old Ranch Creek</th>
<th>Lower Hole Creek</th>
<th>Hidden Valley Creek</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>R</td>
<td>S</td>
</tr>
<tr>
<td>Species</td>
<td>Status (Federal/ State/ CRPR)</td>
<td>Critical Habitat within Project Sites</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Brand’s star phacelia (<em>Phacelia stellaris</em>)</td>
<td>-/-1B.1</td>
<td>N/A</td>
</tr>
<tr>
<td>Chaparral ragwort (<em>Senecio aphanactis</em>)</td>
<td>-/-2B.2</td>
<td>N/A</td>
</tr>
<tr>
<td>Species</td>
<td>Status (Federal/ State/ CRPR)</td>
<td>Critical Habitat within Project Sites</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>San Bernardino aster (&lt;i&gt;Symphyotrichum defoliatum&lt;/i&gt;)</td>
<td>-/-/1B.2</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### Species

<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)¹</th>
<th>Critical Habitat within Project Sites²</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Bernardino aster</td>
<td>Extirpated or possibly extirpated (CDFW 2018). Therefore, due to the presence of potentially suitable habitat and the lack of contemporary observation in the region, there is a low potential for San Bernardino aster to occur within the project sites.</td>
<td>Lower Hole Creek</td>
<td></td>
<td></td>
<td></td>
<td>Anza Creek/Old Ranch Creek</td>
</tr>
<tr>
<td>Sensitive Natural Communities</td>
<td></td>
<td>Sub-type of coastal sage scrub found on the alluvial fans and flood plains of the coastal side of the San Bernardino and San Gabriel Mountains. All remaining significant expanses of alluvial fan sage scrub habitats now occur only in San Bernardino County, specifically on the Etawanda Fan, Lytle Creek, Cajon Creek</td>
<td>Present - vegetation mapping in 2016 identified California Buckwheat Scrub present within some alluvial areas within the project sites (Barbour and Wirka 1997).</td>
<td>Riverside Alluvial Fan Sage Scrub habitat is not mapped within the project sites (CDFW 2018). However, the vegetation mapping completed for the project in 2016 identifies California Buckwheat Scrub within some alluvial areas of the project sites. Classification of alluvial scrub in Los Angeles, Riverside, and San Bernardino</td>
<td>Lower Hole Creek</td>
<td>Hidden Valley Creek</td>
</tr>
</tbody>
</table>

1. Status (Federal/State/CRPR)
2. Critical Habitat within Project Sites
3. Upper SAR HCP Covered Species
4. Habitat Descriptions and Requirements
5. Justification

---

**Sensitive Natural Communities**

- **Riversidien Alluvial Fan Sage Scrub**
  - Status (Federal/State/CRPR): Extirpated or possibly extirpated (CDFW 2018).
  - Critical Habitat within Project Sites: Lower Hole Creek
  - Upper SAR HCP Covered Species: --
  - Habitat Descriptions and Requirements: Present – vegetation mapping in 2016 identified California Buckwheat Scrub present within some alluvial areas within the project sites (Barbour and Wirka 1997).
  - Justification: Riverside Alluvial Fan Sage Scrub habitat is not mapped within the project sites (CDFW 2018). However, the vegetation mapping completed for the project in 2016 identifies California Buckwheat Scrub within some alluvial areas of the project sites. Classification of alluvial scrub in Los Angeles, Riverside, and San Bernardino
  - Current Habitat Suitability ("S") and Potential Suitability After Restoration ("R"): Lower Hole Creek (R), Hidden Valley Creek (S) (present)
<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)(^1)</th>
<th>Critical Habitat within Project Sites(^2)</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern California Arroyo Chub/Santa Ana Sucker Stream</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Santa Ana River and tributaries, in San Bernardino, Riverside and Orange Counties. From Mount Rubidoux downstream to northeastern Anaheim, including tributaries Chino, Aliso, and Sunnyslope Creeks.</td>
<td>Present – identified during 2016 and 2017 aquatic species habitat assessments within portions of tributaries within project sites.</td>
<td>Counties has been expanded to include additional series, including a Western Riverside group distinguished by low cover of <em>Eriogonum fasciculatum</em> and <em>Lepidospartum squamatum</em> as well as a high diversity of annuals (Barbour and Wirka 1997). Southern California Arroyo Chub/Santa Ana Sucker Stream is mapped within the project sites where the Santa Ana River is present (CDFW 2018). Additionally, as determined during 2016 and 2017 aquatic species habitat assessments, portions of the tributaries within the project sites have suitable habitat for these species.</td>
</tr>
<tr>
<td>Species</td>
<td>Status (Federal/State/CRPR)</td>
<td>Critical Habitat within Project Sites</td>
<td>Upper SAR HCP Covered Species</td>
<td>Habitat Descriptions and Requirements</td>
<td>Current Potential to Occur at Project Sites and Justification</td>
<td>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</td>
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</tr>
<tr>
<td>Southern Cottonwood Willow Riparian Forest</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Santa Ana River, from the Prado Flood Control Basin to below Rubidoux. Extant, 1985, per interpretation of aerial photos but boundary changed. Mapped as closed canopy <em>Populus fremontii</em>, <em>P. trichocarpa</em>, and <em>Salix</em> spp. in matrix with scrub of <em>Baccharis viminea</em> and <em>B. emoryi</em>.</td>
<td>Present – vegetation mapping in 2016 identified the presence of this community within project sites. Southern Cottonwood Willow Riparian Forest is mapped within the project sites along the Santa Ana River riparian corridor. As noted in the CNDDB, the boundary of mapped occurrence has changed over time (CDFW 2018). The vegetation mapping completed for the project in 2016 identifies the following vegetation communities: Black Willow/Fremont Cottonwood Forest, Fremont Cottonwood/Willow Forest, Fremont Cottonwood/Willow/Mulefat Forest, and Fremont Cottonwood/Willow/Wild Grape Forest within the project sites.</td>
<td>S (present)</td>
</tr>
<tr>
<td>Southern Riparian Forest</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Riparian forests in Southern California. Present – vegetation mapping in 2016 identified the presence of this Southern Riparian Forest habitat is not recorded as mapped by the CNDDB within the project</td>
<td>S (present)</td>
<td>S (present)</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)¹</th>
<th>Critical Habitat within Project Sites²</th>
<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Riparian Scrub</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>community within project sites.</td>
<td>Anza Creek/Old Ranch Creek: S (present) R S (present) Hidden Valley Creek: S (present)</td>
</tr>
</tbody>
</table>

However, the vegetation mapping completed for the project in 2016 identifies the following vegetation communities: Black Willow/Fremont Cottonwood Forest, California Sycamore Woodlands, Fremont Cottonwood/Willow Forest, Fremont Cottonwood/Willow/Mulefat Forest, and Fremont Cottonwood/Willow/Wild Grape Forest within the project sites.

Southern Riparian Scrub habitat is not recorded as mapped by the CNDDB within the project sites (CDFW 2018). However, the vegetation mapping completed for the project in 2016 identifies the following vegetation communities: Arrow

Present - vegetation mapping in 2016 identified the presence of this community within project sites.
<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)</th>
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<th>Upper SAR HCP Covered Species</th>
<th>Habitat Descriptions and Requirements</th>
<th>Current Potential to Occur at Project Sites and Justification</th>
<th>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Willow Scrub</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Willow scrub habitats in Southern California.</td>
<td>Present - vegetation mapping in 2016 identified the presence of this community within project sites.</td>
<td>Anza Creek/Old Ranch Creek</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Weed Thickets, Black Willow Thickets, California Buckwheat Scrub, Mulefat Thickets, and Sandbar Willow Thickets within the project sites.</td>
<td>S (present)</td>
</tr>
</tbody>
</table>

1Status Definitions:
FE = Federally-listed as endangered under ESA
FT = Federally-listed as threatened under ESA
FD = De-listed under ESA
SE = State-listed as endangered under CESA
<table>
<thead>
<tr>
<th>Species</th>
<th>Status (Federal/State/CRPR)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ST = State-listed as threatened under CESA SC = Candidate for state-listing as endangered under CESA SD = De-listed under CESA SFP = Fully-protected species in California as identified in the California Code of Regulations, Fish and Game Code. SSC = California Species of Special Concern CRPR = California Rare Plant Rank: 1A. Presumed extirpated in California and either rare or extinct elsewhere 1B. Rare or Endangered in California and elsewhere (includes Rare Plant Ranks 1B.1, 1B.2, 1B.3) 2A. Presumed extirpated in California, but more common elsewhere 2B. Rare or Endangered in California, but more common elsewhere (includes Rare Plant Ranks 2B.1, 2B.2, 2B.3) 3. Plants for which more information is needed - Review list (includes Rare Plant Ranks 3, 3.1, 3.2, 3.3) 4. Plants of limited distribution in California - Watch list (includes Rare Plant Ranks 4.1, 4.2, 4.3) Threat Code extensions and their meanings: .1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat) .2 - Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat) .3 - Not very threatened in California (&lt;20% of occurrences threatened / low degree and immediacy of threat or no current threats known) 2 Critical habitat as designated in Federal Register documents. &quot;N/A&quot; value indicates critical habitat is not designated for a species; thus, it is not applicable to identify if critical habitat occurs within the project sites. 3 Santa Ana speckled dace is not expected to occur within the project sites under current conditions; however, habitat within the project sites is expected to potentially become suitable for the species following completion of the restoration projects, and the species' potential to occur within the project sites is expected to increase.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Anza Creek/ Old Ranch Creek</td>
<td>Lower Hole Creek</td>
<td>Hidden Valley Creek</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Species</strong></td>
<td><strong>Status (Federal/State/CRPR)</strong></td>
<td><strong>Critical Habitat within Project Sites</strong></td>
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<td><strong>Habitat Descriptions and Requirements</strong></td>
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<td>Current Habitat Suitability (&quot;S&quot;) and Potential Suitability After Restoration (&quot;R&quot;), by Site</td>
</tr>
</tbody>
</table>

### Table Notes:

- **ST** = State-listed as threatened under CESA
- **SC** = Candidate for state-listing as endangered under CESA
- **SD** = De-listed under CESA
- **SFP** = Fully-protected species in California as identified in the California Code of Regulations, Fish and Game Code.
- **SSC** = California Species of Special Concern
- **CRPR** = California Rare Plant Rank:
  1A. Presumed extirpated in California and either rare or extinct elsewhere
  1B. Rare or Endangered in California and elsewhere (includes Rare Plant Ranks 1B.1, 1B.2, 1B.3)
  2A. Presumed extirpated in California, but more common elsewhere
  2B. Rare or Endangered in California, but more common elsewhere (includes Rare Plant Ranks 2B.1, 2B.2, 2B.3)
  3. Plants for which more information is needed - Review list (includes Rare Plant Ranks 3, 3.1, 3.2, 3.3)
  4. Plants of limited distribution in California - Watch list (includes Rare Plant Ranks 4.1, 4.2, 4.3)

**Threat Code extensions and their meanings:**

- **.1** - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- **.2** - Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)
- **.3** - Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

2 Critical habitat as designated in Federal Register documents. "N/A" value indicates critical habitat is not designated for a species; thus, it is not applicable to identify if critical habitat occurs within the project sites.

3 Santa Ana speckled dace is not expected to occur within the project sites under current conditions; however, habitat within the project sites is expected to potentially become suitable for the species following completion of the restoration projects, and the species' potential to occur within the project sites is expected to increase.
Project Setting

Anza Creek and Old Ranch Creek

Baseline Summary

The Anza Creek and Old Ranch Creek project sites, which have been combined for discussion and analysis purposes, together cover approximately 324 acres and are located on the Santa Ana River’s south floodplain about 2 miles downstream of Mount Rubidoux (Figure 3.3-1). The site is bounded to the north by the Santa Ana River, to the east by the closed Tequesquite Landfill, and to the south and west by the Santa Ana River Trail Bike Path and Anza Narrows Park. This area was selected based on two potential native fish channel restoration opportunities, referred to as Anza Creek channel and Old Ranch Creek channel. The Old Ranch Creek channel is located generally in the eastern half of the site while the Anza Creek channel is in the western half of the site.

Elevations at the restoration sites range from 742 feet above mean sea level (AMSL) in the southeastern corner near the bike path to 712 AMSL feet in the Santa Ana River channel in the northwestern portion of the site. Soils within the site are characterized by fine-grained alluvial sands linked to the Santa Ana River channel and historical floodplain that used to occupy the site. Three soil types occur at the site: Grangeville fine sandy loam (GuB), Dello loamy fine sand (DoA), and Delhi fine sand (DaD2). The most substantial land change was the installation of the Tequesquite Landfill, which is located directly in the floodplain upstream of the site and where the Santa Ana River historically flowed. Prior to confinement by levees, the landfill, and other constraints, the condition of the Anza Creek/Old Ranch Creek project sites was highly dynamic. The alignment and shape of the Santa Ana River changed regularly in response to flood events, as scour and fill processes led to the creation of new channels with sand and gravel bars and the filling of previous channels (Figure 3.3-1). As described in Section 2.3, Existing Conditions and Land Uses, and Section 3.8, Hydrology and Water Quality, Old Ranch Creek and Anza Creek are two of several surface area drains and stormwater systems at the Old Ranch Creek/Anza Creek site.

Currently the land at the Anza Creek/Old Ranch Creek site is in public and private ownership. Most of the site is owned by Riverside County, with some land along the eastern boundary adjacent to the landfill owned by the City of Riverside. The site contains two small privately owned parcels about 1,500 feet west of the Anza Drain culvert outfall along the southern border of the site. The bike path extends through these private parcels. Two small wood pole transmission lines cross the southern portion of the site. Access roads and the bike path cross the site and provide feeders to numerous social pedestrian trails that zigzag throughout the site, with a heavy concentration on the northeastern corner where multiple large homeless encampments currently exist. Homeless activity is most prevalent along Anza Creek, which has led to blockages of the channel from log footpath and dam construction and excessive garbage, shopping carts, and other debris accumulations.

Habitats and Sensitive Species

Vegetation Communities and Land Cover

Vegetation mapping was conducted at the Anza Creek/Old Ranch Creek site between July and September 2016, and the site was visited again on August 24, 2017. Vegetation communities and land cover types observed at the Anza Creek/Old Ranch Creek site during baseline surveys are shown in Table 3.3-4 and on Figure 3.3-4.
Figure 3.3-4
Anza and Old Ranch Creeks Vegetation Communities and Land Cover Types Map
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend
- Tributaries Restoration Project and Mitigation Reserve Program Phase I
- Expanded Mitigation Reserve Program Phase II

Vegetation
- Native
  - Black Willow Thickets
  - Arrow Weed Thickets
  - Fremont Cottonwood/Willow/Wild Grape Forest
  - Black Willow/Fremont Cottonwood Forest
  - Fremont Cottonwood Forest
  - Cattail Marsh
  - Sandbar Willow Thicket
  - Open Water
  - Salt Grass Flats

Nonnative and Developed
- Disturbed Habitat
- California Annual Grassland
- Giant Reed Breaks
- Nonnative Riparian
- Urban/Developed

Source: ICF, SBVMWD 2018
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Vegetation communities were classified based on the dominant and characteristic plant species, in accordance with *Vegetation Classification, A Manual of California Vegetation*.  

The Anza Creek/Old Ranch Creek site currently supports a variety of native vegetation communities including Black Willow/Fremont Cottonwood Forest, Fremont Cottonwood/Willow/Wild Grape Forest, and Fremont Cottonwood Forest, with upland areas consisting mostly of Arrow Weed Thickets and Salt Grass Flats. The principal native plant species include arrow weed (*Pluchea sericea*), black willow (*Salix gooddingii*), Fremont’s cottonwood (*Populus fremontii*), and desert wild grape (*Vitis girdiana*). Extensive nonnative plant communities found on site include nonnative grassland and nonnative riparian habitat, dominated by palms.

Additional land cover types observed in the Anza Creek/Old Ranch Creek site include Disturbed Habitat, Urban/Developed Areas, and Open Water (Figure 3.3-4). Disturbed Habitat exists mostly on and adjacent to trails and dirt roads and consists of bare ground. Urban/Developed Areas consist of paved areas within the parking lots of the Anza Narrows Park in the eastern edge of the site, and the bike/pedestrian path along southern portions of the site. Open Water is present where the Santa Ana River runs along the northern edge of the sites and in Anza Creek in the eastern portion of the site.

**Table 3.3-4. Vegetation Communities and Land Cover Types Occurring at the Anza Creek/Old Ranch Creek Site**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>CNPS Vegetation Alliance/Association¹</th>
<th>CWHR Habitat Classifications²</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Native Communities</strong></td>
<td></td>
<td></td>
<td><strong>254.72</strong></td>
</tr>
<tr>
<td>Arrow Weed Thickets</td>
<td><em>Pluchea sericea</em></td>
<td>Alkali Desert Scrub/Desert Wash</td>
<td>62.56</td>
</tr>
<tr>
<td>Black Willow Thickets</td>
<td><em>Salix gooddingii</em></td>
<td>Desert Riparian/Valley Foothill Riparian</td>
<td>2.81</td>
</tr>
<tr>
<td>Black Willow/Fremont Cottonwood Forest</td>
<td><em>Salix gooddingii/Populus fremontii</em></td>
<td>Desert Riparian/Valley Foothill Riparian</td>
<td>93.29</td>
</tr>
<tr>
<td>Cattail Marshes</td>
<td><em>Typha (angustifolia, domingensis, latifolia)</em></td>
<td>Fresh Emergent Wetland/Saline Emergent Wetland</td>
<td>3.1</td>
</tr>
<tr>
<td>Fremont Cottonwood Forest</td>
<td><em>Populus fremontii</em></td>
<td>Desert Riparian/Valley Foothill Riparian</td>
<td>19.84</td>
</tr>
<tr>
<td>Fremont Cottonwood/Willow/Wild Grape Forest</td>
<td><em>Populus fremontii/Salix laevigata/Salix spp./Vitis girdiana</em></td>
<td>Desert Riparian/Valley Foothill Riparian</td>
<td>48.47</td>
</tr>
<tr>
<td>Salt Grass Flats</td>
<td><em>Distichlis spicata</em></td>
<td>Saline Emergent Wetland</td>
<td>23.55</td>
</tr>
<tr>
<td>Sandbar Willow Thickets</td>
<td><em>Salix exigua</em></td>
<td>Valley Foothill Riparian</td>
<td>1.10</td>
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<tr>
<td><strong>Nonnative Communities</strong></td>
<td></td>
<td></td>
<td><strong>49.38</strong></td>
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<td>California Annual Grassland</td>
<td>N/A</td>
<td>Annual Grassland</td>
<td>23.94</td>
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<tr>
<td>Giant Reed Breaks</td>
<td><em>Arundo donax</em></td>
<td>Fresh Emergent Wetland</td>
<td>0.26</td>
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<tr>
<td>Nonnative Riparian</td>
<td>N/A</td>
<td>Palm Oasis/Valley Foothill Riparian</td>
<td>25.18</td>
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<tr>
<td><strong>Land Cover Types</strong></td>
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<td></td>
<td><strong>19.79</strong></td>
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<tr>
<td>Disturbed Habitat</td>
<td>Vacant (disturbed bare ground)</td>
<td>Barren</td>
<td>3.85</td>
</tr>
</tbody>
</table>
**Aquatic Habitat**

The Anza Creek/Old Ranch Creek site was visited on August 11, 2016, and August 24, 2017, for aquatic habitat assessments. Old Ranch Creek and Anza Creek are two of several surface area drains and stormwater systems at the Old Ranch Creek/Anza Creek site. Refer to Section 2.3, *Existing Conditions and Land Uses*, and to Section 3.8, *Hydrology and Water Quality*, for additional detailed descriptions of these streams.

Old Ranch Creek is an ephemeral drainage; it does not have a perennial source of water, nor a continuous channel that connects with the Santa Ana River. Old Ranch Creek no longer exists in the northwestern downstream half of the site; this area is the south floodplain of the Santa Ana River and requires a rare flood event in order for flows from the Santa Ana River to spill out into this floodplain area. Anza Creek is fed by the Anza Drain, which supplies little to no surface water flow to the site in dry months; thus the upper portions of Anza Creek are intermittent and largely dry most of the year. In the lower portion of Anza Creek, enough surface water is supplied by natural springs to create perennial flow. Stormwater also enters the site from another culvert outfall located at the far southeast corner of Anza Narrows Park, although not all of the water delivered to the site from this location ultimately makes its way into the Anza Creek channel due to dispersion across an alluvial fan zone in this area. Anza Creek is a highly dynamic channel near the confluence with the Santa Ana River, and the specific location where the Anza Creek channel meets the Santa Ana River depends on geomorphic and hydrologic conditions. Santa Ana sucker and arroyo chub have been known to occupy portions of Anza Creek during certain times of the year but have been extirpated from most of the lower creek due to fish passage constraints, variable flows, and predation (Appendix A). Designated critical habitat for Santa Ana sucker includes the Santa Ana River and adjacent riparian habitat at the Anza Creek/Old Ranch Creek site (Figure 3.3-5), but the final critical habitat designation acknowledges that most tributaries in this portion of the critical habitat, including Anza Creek and Old Ranch Creek, do not provide suitable habitat for Santa Ana sucker (75 Federal Register 77962). However, once the creeks are restored, they will provide functional habitat for Santa Ana sucker and offer many of the Primary Constituent Elements listed in the Designated Critical Habitat rule.

While most of the vegetation along the creeks is nonnative, some reaches of the Anza Creek channel exhibit positive attributes that would benefit sucker habitat, such as wood debris accumulations in the channel, diversity in depths and velocities that create short gravel riffle sections, stable banks, shading to maintain cooler water temperatures, and active floodplain connectivity. Other reaches, however, exhibit less beneficial attributes; some sections of the channels are completely covered in wild grape and the locations of the creeks are indiscernible. Due to homeless activity, Anza Creek channel has multiple blockages from log footpath, dam construction, and excessive debris (e.g., garbage, shopping carts), which may cause passage impediments or passage barriers to fish movement.

---

<table>
<thead>
<tr>
<th>Common Name</th>
<th>CNPS Vegetation Alliance/Association</th>
<th>CWHR Habitat Classifications</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Water</td>
<td>Lacustrine</td>
<td>Riverine/Lacustrine</td>
<td>7.88</td>
</tr>
<tr>
<td>Urban/Developed</td>
<td>N/A</td>
<td>Urban</td>
<td>17.81</td>
</tr>
</tbody>
</table>

Total 323.9

1 Sawyer et al. 2009
2 CDFG 2005

CNPS = California Native Plant Society; CWHR = California Wildlife Habitat Relationships
Designated Critical Habitat Map Anza and Old Ranch Creeks
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Figure 3.3-5

Legend
- Expanded Mitigation Reserve Program Phase II
- Tributaries Restoration Project and Mitigation Reserve Program Phase I
- Critical Habitat (USFWS)
- Common Name
- Least Bell's vireo
- Santa Ana sucker
- CNDDB Species found on map sheet (Locations not displayed at this scale per CNDDB guidelines)
- Animal
  - Santa Ana sucker
  - Swainson's hawk
  - pocketed free-tailed bat
  - western yellow bat
  - least Bell's vireo
  - steelhead - southern California DPS
  - southern California legless lizard
  - yellow warbler
  - Busck's gallmoth
  - arroyo chub
  - yellow-breasted chat
  - western yellow-billed cuckoo

Source: ICF, USFWS, USGS; CNDDB 2019
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**Sensitive Plant Species**

Based on its location and general conditions, the Anza Creek/Old Ranch Creek site provides potential habitat for the following sensitive plant species with moderate to high potential to occur, or that are present on site: Santa Ana River woolly-star (present), smooth tarplant, Robinson’s pepper-grass (moderate), Brand’s star phacelia (moderate), Southern California black walnut (high), slender-horned spineflower (low), and paniculate tarplant (high). Suitable habitat for Santa Ana River woolly-star is composed of open washes and early-successional alluvial fan scrub on open slopes above main watercourses where flooding and scouring occur periodically to maintain open shrublands. Suitable habitat for the species currently occurs within the Anza Creek/Old Ranch Creek site. Suitable habitat for smooth tarplant is composed of alkali scrub, alkali playas, riparian woodland, watercourses, and grasslands with alkaline affinities. The only potentially suitable alkaline habitat for smooth tarplant occurs within the Salt Grass Flats at the Anza Creek/Old Ranch Creek site. Habitat assessments were performed for these species at the site and verified presence of suitable habitat for woolly-star (52.06 acres) and tarplant (23.55 acres), and a small population of Santa Ana River woolly-star was previously observed within the site during a March 12, 2014, visit.

**Invasive/Nonnative Plants**

Nonnative plants are present throughout the site. Palms, including date palm (*Phoenix dactylifera*) and fan palm, are prevalent in the Fremont Cottonwood communities. Salt cedar/tamarisk (*Tamarix* spp.) stands are found closer to the mainstem of the Santa Ana River. As described above, extensive nonnative plant communities found on site include nonnative grassland and nonnative riparian habitat, dominated by palms.

**Sensitive Fish and Wildlife Species Habitat Suitability and Observations**

Sensitive fish species with moderate to high potential to occur at the site are Santa Ana sucker (moderate) and arroyo chub (high). As described above, suitable fish habitat at the Anza Creek/Old Ranch Creek site is limited to the lower portion of Anza Creek that supports perennial flows (Figure 3.3-6). Santa Ana sucker and arroyo chub have been known to occasionally occupy portions of Anza Creek, and have been observed in the channel after high-flow events (as recently as April 2016). There are no recently documented occurrences of Santa Ana speckled dace, and no sensitive fish species were observed within the stream during baseline surveys, although sampling was not conducted (e.g., snorkel, seine, etc.). Refer to the Aquatic Species Habitat Assessment, included in Appendix B, for more details. During a September 2018 Santa Ana River fish population survey of the mainstem Santa Ana River, Santa Ana sucker and arroyo chub were observed immediately upstream and downstream of the Anza Creek confluence (Appendix B).

The following sensitive aquatic reptile species have moderate to high potential to occur within the site: southwestern pond turtle (high), two-striped gartersnake (moderate), and south coast gartersnake (moderate). Potentially suitable aquatic habitat of variable quality for both southwestern pond turtle and gartersnakes is present within the site, specifically where perennial surface waters are present in the Santa Ana River, in lower Anza Creek, and at wetted areas near the culverts that feed the upper portion of Anza Creek (Figure 3.3-6). Upland habitat for southwestern pond turtle and gartersnakes is present in areas adjacent to perennial waters. Aquatic and upland habitats for these species are of variable quality due to the presence of nonnative vegetation, nonnative wildlife, and human use impacts (predominantly from homeless activity). No sensitive aquatic reptiles or amphibians were observed during the baseline survey site visits; however, one
southwestern pond turtle has previously been observed in lower Anza Creek, and a single two-striped gartersnake has been observed in the upstream portion of the channel. The upper channel’s character has changed significantly in the interim and has become heavily overgrown with riparian vegetation.

Sensitive bird species documented at the site during field visits include least Bell’s vireo, yellow-breasted chat, and yellow warbler (Figure 3.3-6). A total of 27 least Bell’s vireo territories were detected at the Anza Creek/Old Ranch Creek site, and breeding (i.e., nest or fledglings observed) was confirmed. A total of 25 yellow-breasted chat breeding territories were confirmed. One willow flycatcher was detected at the site, but it was determined not to be the federally listed sub-species and was determined to be a non-breeding migrant (see Appendix B). Other sensitive bird species with potential to occur within the site are Clark’s marsh wren (high potential to occur) and white-tailed kite (moderate potential to occur/nest). Riparian bird habitat was evaluated to be of moderate to high quality throughout the site, with habitat quality depending largely on the amount of human disturbance and extent of nonnative vegetation.

Sensitive terrestrial reptile species with moderate to high potential to occur within the site are: coastal whiptail (moderate), coast horned lizard (moderate), and Southern California legless lizard (high). Sensitive mammal species with moderate to high potential to occur within the site are: western yellow bat (moderate), San Diego black-tailed jackrabbit (moderate), and pocketed free-tailed bat (moderate). No sensitive mammal or terrestrial reptile species were documented during site visits, and there are no historically documented occurrences of these species at the site. Much of the project sites is covered with dense riparian and nonnative species, and limited areas suitable for sensitive terrestrial reptile species exist within scrub habitat, or areas with relatively low vegetative cover. The sites do support small patches of potential habitat suitable for sensitive mammal species, but their ability to support populations of these species is limited due to the intra-site patchiness of habitat and lack of connectivity to upland habitat in the region. Suitable foraging areas for bat species and palms suitable for western yellow bat roosting occur within the sites.

**Invasive/Nonnative Fish and Wildlife Species**

Introduced mosquitofish were observed in the lower portion of Anza Creek during the baseline survey visits. Bullfrogs have been observed in nearby aquatic habitats and are likely to be present within Anza Creek and the Santa Ana River, but were not observed at the sites. Largemouth bass have commonly been observed in the large ponded pool within lower Anza Creek. The site is used by brown-headed cowbird (*Molothrus ater*), a significant nest parasite on least Bell’s vireo, and cowbird control may be needed to optimize site suitability for the vireo and other desirable riparian birds. Field surveys did not identify feral pet predators at the site, but it is also possible that feral or pet dogs or cats may have an adverse effect on native wildlife at the site. Control of these predators may prove to be appropriate. The Santa Ana River supports a population of wild boar (*Sus scrofa*), which can create damage to freshly graded sites and young vegetation (planted or recruited). Although population control of this species has not been feasible to date, site-specific management actions may be warranted to protect revegetated areas.

There have been recent observations of the polyphagous shot hole borer beetle (*Euwallacea* sp.) near the site, along the Santa Ana River corridor, which poses a substantial threat to existing riparian habitat on site and in the watershed. Care will need to be taken when removing trees to avoid transport of the invasive beetle, and long-term monitoring and maintenance strategies will need to consider the species.
Figure 3.3-6
Anza and Old Ranch Creeks Sensitive Fish and Wildlife Observations and Potential Aquatic Species Habitat Map
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend
- Tributaries Restoration Project and Mitigation Reserve Program Phase I
- Expanded Mitigation Reserve Program Phase II

Sensitive Species Observations
- Least Bell's Vireo
- Southwestern Willow Flycatcher
- Willow Flycatcher
- Yellow-breasted Chat
- Santa Ana River Woolly Star

Potential Habitat
- Western Pond Turtle - Migratory Corridor
- Western Pond Turtle - Aquatic
- Western Pond Turtle - Upland
- Low-quality BUOW Habitat
- Moderate-quality BUOW Habitat
- Two-Striped Garter Snake - Aquatic
- Two-Striped Garter Snake - Upland
- Fish Habitat

Source: ICF, SBVMWD 2018
Jurisdictional Delineation

Jurisdictional delineation fieldwork was performed at the Anza Creek/Old Ranch Creek site on August 1–3, 2016. The Anza Creek/Old Ranch Creek site contains eight jurisdictional drainage features, including the Santa Ana River (Figures 3.3-7 and 3.3-8). Refer to the Jurisdictional Delineation Report in the Opportunities and Constraints Report included as Appendix B for descriptions of each drainage feature. It should be noted that due to minor modifications in the project boundary limits, the acreages and linear feet for the jurisdictional drainage features provided below have been updated from those values previously provided in the Jurisdictional Delineation Report. It should be noted that due to minor modifications in the project boundary limits at the Anza Creek site, the acreages and linear feet for the jurisdictional drainage features provided below have been updated from those values previously provided in the Jurisdictional Delineation Report.

A total of 90.34 acres of waters of the U.S. and state were mapped within the site. There is complete overlap between waters of the U.S. and waters of the state. Of this, 83.32 acres are wetland waters and 7.02 acres are non-wetland waters (Table 3.3-5). On October 30, 2018, a field verification meeting was conducted with a representative of USACE. During the field verification meeting, USACE provided verbal direction that only wetlands outside of the Ordinary High Water Mark (OHWM) were to be classified as wetlands (i.e., adjacent wetlands) and that areas that met all three wetland parameters but were located below the OHWM were not to be classified as wetlands per new internal USACE understanding. However, for the purposes of this EIR, areas that exhibited wetlands characteristics (i.e., met all three wetland criteria), regardless of their location with regard to the OHWM, were classified as wetlands. A total of 311.31 acres of CDFW jurisdiction were mapped within the site. Of this, 256.24 acres are CDFW associated riparian and 55.07 acres are CDFW streambed (Table 3.3-5). The site is entirely within the wide floodplain of the Santa Ana River; therefore, the jurisdictional limits of CDFW extend throughout much of the site well beyond the OHWM and wetland limits.

Table 3.3-5. Jurisdictional Waters and Wetlands within the Anza Creek and Old Ranch Creek Sites

<table>
<thead>
<tr>
<th>Feature</th>
<th>Linear Feet</th>
<th>USACE/RWQCB</th>
<th>CDFW</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Wetland</td>
<td>Non-wetland</td>
</tr>
<tr>
<td>Santa Ana River</td>
<td>7,520</td>
<td>23.01</td>
<td>6.03</td>
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<tr>
<td>Old Ranch Creek Channel</td>
<td>4,662</td>
<td>6.75</td>
<td>0.31</td>
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<tr>
<td>Anza Drain</td>
<td>8,499</td>
<td>45.23</td>
<td>0.17</td>
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<td>Drainage 2</td>
<td>1,076</td>
<td>7.09</td>
<td>--</td>
</tr>
<tr>
<td>Drainage 3</td>
<td>551</td>
<td>0.76</td>
<td>--</td>
</tr>
<tr>
<td>Unnamed Ephemeral Drainage</td>
<td>1,464</td>
<td>--</td>
<td>0.51</td>
</tr>
<tr>
<td>Depression 1</td>
<td>--</td>
<td>0.39</td>
<td>--</td>
</tr>
<tr>
<td>Depression 2</td>
<td>--</td>
<td>0.07</td>
<td>--</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>23,772</strong></td>
<td><strong>83.32</strong></td>
<td><strong>7.02</strong></td>
</tr>
</tbody>
</table>

1 Total acreage may not sum to the total shown; total is reflective of rounding geographic information system raw data in each category.
Wetland Condition

California Rapid Assessment Method (CRAM) practitioners conducted field surveys of the Anza Creek/Old Ranch Creek site on September 30, 2016. Five CRAM Assessment Areas (AAs) were surveyed within the delineated drainages, including three in the Old Ranch Creek channel and two in the Anza Creek channel (Appendix F of Appendix B). CRAM is an ambient monitoring and assessment tool that can be performed on different scales, ranging from an individual wetland to across a watershed or a larger region. CRAM is designed to collect a coarse assessment of the site’s ambient conditions but can be used to measure progress toward meeting success criteria established for wetland function/condition, and can be repeated over the long term if necessary or desired. The final CRAM score for each AA is composed of four main attribute scores (buffer and landscape context, hydrology, physical structure, and biotic structure), which are based on the metric and submetric scores (a measurable component of an attribute). The CRAM practitioners assign a letter rating (A–D) for each metric/submetric based on a defined set of condition brackets ranging from an “A” as the theoretical best case achievable for the wetland class across California to a “D,” the worst-case achievable. Each metric condition level (A–D) has a fixed numerical value (A=12, B=9, C=6, D=3), which, when combined with the other metrics, results in a score for each attribute. That number is then converted to a percentage of the maximum score achievable for each attribute and represents the final attribute score ranging from 25 to 100 percent. The final overall CRAM score is the sum of the four final attribute scores, ranging from 25 to 100 percent. A summary of the results for each AA is provided in Table 3.3-6. Wetland condition throughout the site was moderate, ranging from 60 to 70 in total CRAM score. Refer to the CRAM Report in Appendix F of Appendix B for descriptions of each AA.
Figure 3.3-7

Anza/Old Ranch Creek Jurisdictional Aquatic Resources Map (USACE/RWQCB)
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend
Tributaries Restoration Project and Mitigation Reserve Program Phase I
Temporary Impact
Permanent Impact
Expanded Mitigation Reserve Program Phase II
Waters of the U.S. and State (USACE/RWQCB)
Nonwetland
Wetland

Source: ICF, SBVMWD 2018

1:9,000

0 375 750 Feet
Figure 3.3-8
Anza/Old Ranch Creek Jurisdictional Aquatic Resources Map (CDFW)
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend
- Tributaries Restoration Project and Mitigation Reserve Program Phase I
- Temporary Impact
- Permanent Impact
- Expanded Mitigation Reserve Program Phase II
- Waters of the State (CDFW)
- Streambed
- Riparian
- - Main Channel

Source: ICF, SBVMWD 2018

1:9,000 Scale
Table 3.3-6. CRAM Metric, Submetric, Attribute, and Overall Scores for Anza Creek and Old Ranch Creek Sites

<table>
<thead>
<tr>
<th>Attributes</th>
<th>CRAM Metric and Submetrics</th>
<th>CRAM Assessment Areas and CRAM Attribute Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AA1</td>
</tr>
<tr>
<td></td>
<td>Buffer Submetric B: Average Buffer Width</td>
<td>A (12)</td>
</tr>
<tr>
<td></td>
<td>Buffer Submetric C: Buffer Condition</td>
<td>B (9)</td>
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<td></td>
<td>Final Attribute Score</td>
<td>93.30%</td>
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<tr>
<td></td>
<td>Channel Stability</td>
<td>B (9)</td>
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<td></td>
<td>Final Attribute Score</td>
<td>75.00%</td>
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<tr>
<td>Physical Structure</td>
<td>Structural Patch Richness</td>
<td>D (3)</td>
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<td></td>
<td>Topographic Complexity</td>
<td>C (9)</td>
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<td></td>
<td>Final Attribute Score</td>
<td>37.50%</td>
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<tr>
<td>Biotic Structure</td>
<td>Plant Community (PC)</td>
<td>C (6)</td>
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<tr>
<td></td>
<td>Submetric A: Number of Plant Layers</td>
<td>D (3)</td>
</tr>
<tr>
<td></td>
<td>PC Submetric B: Number of Co-dominant Species</td>
<td>C (6)</td>
</tr>
<tr>
<td></td>
<td>PC Submetric C: Percent Invasion</td>
<td>B (9)</td>
</tr>
<tr>
<td></td>
<td>Horizontal Interspersion</td>
<td>D (3)</td>
</tr>
<tr>
<td></td>
<td>Vertical Biotic Structure</td>
<td>D (3)</td>
</tr>
<tr>
<td></td>
<td>Final Attribute Score</td>
<td>33.33%</td>
</tr>
<tr>
<td></td>
<td>Overall AA Score</td>
<td>60%</td>
</tr>
</tbody>
</table>

Lower Hole Creek

Baseline Summary

The Lower Hole Creek tributary restoration site covers 20 acres and is located to the west of Van Buren Boulevard, south of the Santa Ana River, and north and east of the single-family housing developments located along Lower Hole Creek (Figure 3.3-1). The Lower Hole Creek site begins downstream of Jurupa Avenue where the stream passes under the road through a large, recently installed 40-foot concrete box culvert. Historically, the creek upstream of Jurupa Avenue was part of Hole Lake, which was drained in 1975. The stream now flows through the location of the former spillway at the Jurupa Avenue crossing, then continues through a confined floodplain. Elevations at the site range from 668 feet AMSL in the northern edge at the Santa Ana River to 745 feet AMSL on top of the bluff at the southeastern side of the site. Soils within the site are characterized by fine-
grained alluvial sands linked to the Santa Ana River channel and historical floodplain that used to occupy the site. Four soil types occur at the site: Buchenau loam (BhC), Dello loamy sand (DgB), Grangeville fine sandy loam (GuB), and Porterville Clay (PtB).

As described in Section 2.3, Existing Conditions and Land Uses, and Section 3.8, Hydrology and Water Quality, Lower Hole Creek is perennial as a result of urban inputs from the upstream watershed, with flows typically less than 0.5 cubic feet per second. Lower Hole Creek's water sources include treated effluent and urban runoff, including runoff from Van Buren Boulevard that enters the site from the east downstream of Jurupa Avenue, runoff from the Greenbelt area (south of Victoria), locally rising groundwater, and occasionally flow from the Riverside Canal. The urban watershed causes rapid runoff during rain events and periodic flooding that delivers abundant trash and debris to Lower Hole Creek. Santa Ana sucker and the arroyo chub have been observed within Lower Hole Creek, particularly after high-flow events that scour the channel and create more favorable substrate conditions.

The majority of the project site is owned by CDFW, with an easement on the upstream portion from the Riverside-Corona Resource Conservation District. The Upper 260 feet of the Lower Hole Creek channel and floodplain is owned by the City of Riverside. Additional privately held parcels are located in the southeastern corner of the site and elevated high above the creek. Refer to Table 2-2 in Chapter 2, Project Description, which provides a breakdown of the acreage of each site's land owners. Access to the site is available via public right-of-way. The site as a whole is heavily affected by human use, particularly the homeless population in the area, as evidenced by the numerous encampments and extensive trash at the creek. There are many access trails running down the banks and across the stream, and check dams, extensive trash, and debris are also present.

**Habitats and Sensitive Species**

**Vegetation Communities and Land Cover**

Vegetation mapping was conducted at the Lower Hole Creek site in July to September 2016. Vegetation communities were classified based on the dominant and characteristic plant species, in accordance with *Vegetation Classification, A Manual of California Vegetation*. Vegetation communities and land cover types at the Lower Hole Creek site are shown in Table 3.3-7 and Figure 3.3-9.

**Table 3.3-7. Vegetation Communities and Land Cover Types Occurring within the Lower Hole Creek Site**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>CNPS Vegetation Alliance/Association ¹</th>
<th>CWHR Habitat Classifications²</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Communities</td>
<td></td>
<td></td>
<td>4.62</td>
</tr>
<tr>
<td>Black Willow Thickets</td>
<td>Salix gooddingii</td>
<td>Desert Riparian/Valley</td>
<td>1.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foothill Riparian</td>
<td></td>
</tr>
<tr>
<td>California Buckwheat Scrub</td>
<td>Eriogonum fasciculatum</td>
<td>Coastal Scrub/Desert</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scrub/Mixed Chaparral</td>
<td></td>
</tr>
<tr>
<td>California Sycamore Woodlands</td>
<td>Platanus racemosa</td>
<td>Valley Foothill Riparian</td>
<td>2.94</td>
</tr>
<tr>
<td>Mulefat Thickets</td>
<td>Baccharis salicifolia</td>
<td>Desert Riparian/Valley</td>
<td>0.36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foothill Riparian</td>
<td></td>
</tr>
</tbody>
</table>
Dense riparian vegetation is present along most of the upstream half of Lower Hole Creek and becomes less abundant along the downstream reach. The Lower Hole Creek site primarily supports two native vegetation communities: Black Willow Thickets and California Sycamore Woodlands. Small areas of native California Buckwheat Scrub and Mulefat Thickets are also present at the site. These native communities occur along the creek channel, with upland areas of the site consisting mostly of California Annual Grassland that is dominated by nonnative grasses (Figure 3.3-9). The principal native plant species include black willow and California sycamore. Most of the banks along the upper half of Lower Hole Creek lack native riparian shrub understory primarily due to impacts from heavy human use. There are fringing wetlands dominated by emergent species present along portions of the creek, with more substantial emergent wetlands present at the confluence with the creek and the floodplain of the Santa Ana River. Nonnative invasive plants are present throughout the site and include date and fan palm trees, giant reed, ash, and tree of heaven, in addition to castor bean and tree tobacco (*Nicotiana glauca*).

Additional land cover types observed in the Lower Hole Creek site include Disturbed Habitat, Urban/Developed Areas, and Open Water. Disturbed Habitat exists mostly on the southeastern side of the site where the stream banks are denuded and consist of bare ground. Urban/Developed Areas consist of paved areas at the bike/pedestrian path along the eastern bluff and the paved area of the Jurupa Avenue site area and in the active, perennial channel of Lower Hole Creek.

**Aquatic Habitat**

The Lower Hole Creek site was visited on August 11, 2016, and August 24, 2017, for aquatic habitat assessments. As described above, Lower Hole Creek’s water sources include treated effluent and urban runoff, locally rising groundwater, and occasionally flow from the Riverside Canal, which provide enough water for perennial flow in the stream. The urban watershed causes rapid runoff during rain events and periodic flooding that delivers abundant trash and debris to Lower Hole Creek, along with the use by the homeless encampments. In some reaches of the creek, particularly immediately downstream of Jurupa Avenue, the channel is hydrologically connected to a floodplain that allows flood flows to overbank, spread out, and reduce the overall channel velocity and erosive energy.

The upstream half of Lower Hole Creek has steep natural banks as well as incised channel reaches and has a higher gradient than the downstream portion of the site. In most portions of the
downstream half of Lower Hole Creek, the stream does not have an active floodplain connection because channel meandering is limited by a steep bedrock wall along the western side of the stream and by the Santa Ana River Trail Bike Path, bank stabilization in the form of interlocking concrete mat, and the closed Pedley Landfill on the eastern side of the stream. Lower Hole Creek is incised for much of its course downstream of Jurupa Avenue. Previous channel down-cutting created many sections of tall, over-steepened, and unstable banks that deliver fine-grained sediment into the channel and diminish the quality of the gravel material desirable for sucker habitat. However, the morphology of the creek is quite varied and includes riffles (areas where the surface of the water is visibly disturbed by shallow cobble or gravel substrate below), planar bed channel, and a few isolated and relatively deep pools. The lower reach upstream of the Santa Ana River confluence is largely a long and shallow pool with slow moving water. Overall, the bed substrate is sand and fine gravel with some riffle sections containing clean gravel well-suited for Santa Ana sucker habitat. Designated critical habitat for Santa Ana sucker is present near the Lower Hole Creek site along the Santa Ana River but does not overlap with the site (Figure 3.3-10).

The Jurupa Avenue crossing is currently a complete barrier to Santa Ana sucker passage. It consists of a structure that includes a rock rip-rap lined pool, a concrete inlet apron, three reinforced concrete box culverts, a concrete outlet apron and stilling basin, and a steep (37 percent slope), loose rip-rap drop structure that ties into the earthen channel on the downstream end. Overall, the structure creates a 27-foot elevation drop between the upstream and downstream ends. The lip of the culvert inlet apron creates a backwater effect that causes Lower Hole Creek to pond for about 200 feet upstream of the Jurupa Avenue crossing.
Designated Critical Habitat Map Lower Hole Creek
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend
- Expanded Mitigation Reserve Program Phase II
- Tributaries Restoration Project and Mitigation Reserve Program Phase I

Critical Habitat (USFWS)

Common Name
- Santa Ana sucker

CNDDDB Species found on map sheet (Locations not displayed at this scale per CNDDDB guidelines)

Animal
- Santa Ana sucker
- western mastiff bat
- Santa Ana speckled dace
- least Bell’s vireo
- steelhead - southern California DPS
- yellow warbler
- arroyo chub
- yellow-breasted chat

Source: ICF, USFWS, USGS; CNDDDB 2019
**Sensitive Plant Species**

No sensitive plant species were observed during baseline survey visits, and the site does not currently support suitable habitat for any sensitive plant species. Refer to Appendix B for further details.

**Invasive/Nonnative Plants**

As described above, nonnative, invasive plants are present throughout the site and include date and fan palm trees, giant reed, ash, and tree of heaven, in addition to castor bean and tree tobacco. Upland areas consist mostly of California annual grassland that is dominated by nonnative grasses (Figure 3.3-9).

**Sensitive Fish and Wildlife Species Habitat Suitability and Observations**

As described above, the Lower Hole Creek site has perennial flows, which provides suitable habitat for native fishes within Lower Hole Creek (Figure 3.3-11). Santa Ana sucker and arroyo chub have been periodically observed in the stream, particularly after high-flow events that scour the channel and create more favorable substrate for habitat. However, existing fish habitat in Lower Hole Creek is of moderate or poor quality due primarily to the prevalence of fine sediment in the streambed, presence of aquatic invasive species, and impacts from trash, debris, and potentially passage impediments as a result of heavy human use (i.e., homeless activity and encampments).

Aquatic and upland habitat for southwestern pond turtle, two-striped gartersnake, and south coast gartersnake is also present at the site (Figure 3.3-11) but is of varying quality primarily as a result of high human disturbance (e.g., trash and encampments) and nonnative invasive species. Neither southwestern pond turtles nor gartersnakes were observed during baseline survey visits.

Habitat quality for riparian birds was moderate to poor due to the high degree of human disturbance and lack of native riparian shrub understory. One least Bell’s vireo male was repeatedly detected at the Lower Hole Creek site during riparian bird surveys, suggesting presence of an active territory. However, a female was not detected, and it is not known whether this male was paired.

The Lower Hole Creek site lacks suitable habitat for sensitive mammal and terrestrial reptile species due to compacted soils and very dense undergrowth in upland areas. The small amount of habitat present for these species is of poor quality due to the small, sparse shrub cover. None of these species were observed during baseline survey visits.

**Invasive/Nonnative Fish and Wildlife Species**

Lower Hole Creek is tributary to the mainstem Santa Ana River and has perennial flow from the upstream watershed; thus, it supports a variety of invasive aquatic species including nonnative fish (such as largemouth bass and mosquitofish) and bullfrogs. The site also has a high potential to support brown-headed cowbirds, a significant nest parasite on least Bell’s vireo, and cowbird control may be needed to optimize site suitability for vireo and other desirable riparian birds. Field surveys did not identify feral pet predators at the site, but it is also possible that feral or pet dogs or cats may have an adverse effect on native wildlife at the site. The Santa Ana River floodplain supports a population of wild boar, which can create damage to freshly graded sites and young vegetation (planted or recruited).
Jurisdictional Delineation

Jurisdictional delineation fieldwork was performed at the Lower Hole Creek site on August 9, 2016. Three features were delineated therein: the mainstem of Hole Creek, an unnamed tributary (Drainage 1) that enters the upstream area from the east, and the Santa Ana River at the downstream end (Figures 3.3-12 and 3.3-13). Refer to the Jurisdictional Delineation Report in the Opportunities and Constraints Report included as Appendix B for descriptions of each drainage feature. It should be noted that due to minor modifications in the project boundary limits at the Lower Hole Creek site, the acreages and linear feet for the jurisdictional drainage features provided below have been updated from those values previously provided in the Jurisdictional Delineation Report.

A total of 3.27 acres of waters of the U.S. and state were mapped within this site. There is complete overlap between waters of the U.S. and waters of the state. Of this, 1.10 acres are wetland waters, 2.06 acres are non-wetland waters and 0.11 acre is culverted (Figure 3.3-12 and Table 3.3-8). On October 30, 2018, a field verification meeting was conducted with a representative of USACE. During the field verification meeting, USACE provided verbal direction that only wetlands outside of the OHWM were to be classified as wetlands (i.e., adjacent wetlands) and that areas that met all three wetland parameters but were located below the OHWM were not to be classified as wetlands per new internal USACE understanding. However, for the purposes of this EIR, areas that exhibited wetlands characteristics (i.e., met all three wetland criteria), regardless of their location with regard to the OHWM, were classified as wetlands. In addition, 5.13 acres of CDFW jurisdiction were mapped within the site. Of this, 2.96 acres are CDFW associated riparian, 2.06 acres are CDFW streambed, and 0.11 acre is culverted (Figure 3.3-13 and Table 3.3-8).

Table 3.3-8. Jurisdictional Waters and Wetlands within the Lower Hole Creek Site

<table>
<thead>
<tr>
<th>Feature</th>
<th>Linear Feet</th>
<th>USACE/RWQCB</th>
<th>CDFW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Wetland Acres</td>
<td>Non-wetland Acres</td>
</tr>
<tr>
<td>Hole Creek</td>
<td>2,173</td>
<td>0.41</td>
<td>1.63</td>
</tr>
<tr>
<td>Drainage 1</td>
<td>238</td>
<td>--</td>
<td>0.12</td>
</tr>
<tr>
<td>Santa Ana River (confluence)</td>
<td>171</td>
<td>0.69</td>
<td>0.30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,583</strong></td>
<td><strong>1.10</strong></td>
<td><strong>2.06</strong></td>
</tr>
</tbody>
</table>

1 Total acreage may not sum to the total shown; total is reflective of rounding geographic information system raw data in each category.
Figure 3.3-11
Lower Hole Creek Sensitive Fish and Wildlife Observations and Potential Aquatic Species Habitat Map

Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend

- Tributaries Restoration Project and Mitigation Reserve Program Phase I
- Expanded Mitigation Reserve Program Phase II

Sensitive Species Observations
- Least Bell’s Vireo
- Southwestern Willow Flycatcher
- Willow Flycatcher
- Yellow-breasted Chat
- Santa Ana River Woolly Star

Potential Habitat
- Western Pond Turtle - Migratory Corridor
- Western Pond Turtle - Aquatic
- Western Pond Turtle - Upland
- Low-quality BUOW Habitat
- Moderate-quality BUOW Habitat
- Two-Striped Garter Snake - Aquatic
- Two-Striped Garter Snake - Upland
- Fish Habitat

Source: ICF SBVMWD 2018
Figure 3.3-12
Lower Hole Creek Jurisdictional Aquatic Resources Map (USACE/RWQCB)
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend
- Tributaries Restoration Project and Mitigation Reserve Program Phase I
- Temporary Impact
- Permanent Impact
- Expanded Mitigation Reserve Program Phase II
- Waters of the U.S. and State (USACE/RWQCB)
  - Culvert
  - Nonwetland
  - Wetland

Source: ICF, SBVMWD 2018
Figure 3.3-13
Lower Hole Creek Jurisdictional Aquatic Resources Map (CDFW)
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend
Tributaries Restoration Project and Mitigation Reserve Program Phase I
- Temporary Impact
- Permanent Impact
- Expanded Mitigation Reserve Program Phase II
- Waters of the State (CDFW)
- Streambed
- Riparian

Source: ICF, SBVMWD 2018
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Wetland Condition

CRAM practitioners conducted field surveys of the Lower Hole Creek site on August 30, 2016. Two CRAM AAs were surveyed in the Lower Hole Creek site. The overall CRAM score, attribute scores, and metric scores are shown in Table 3.3-9. The overall CRAM scores for both AAs were moderate, with the downstream (confined) AA1 scoring 66 and upstream (non-confined) AA2 scoring 60. Refer to the CRAM Report in Appendix F of Appendix B for descriptions of each AA.

Table 3.3-9. CRAM Metric, Submetric, Attribute, and Overall Scores for the Lower Hole Creek Site

<table>
<thead>
<tr>
<th>Attributes</th>
<th>CRAM Metric and Submetrics</th>
<th>CRAM Assessment Areas and CRAM Attribute Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AA1</td>
</tr>
<tr>
<td>Buffer and Landscape Context</td>
<td>Stream Corridor Continuity</td>
<td>A (12)</td>
</tr>
<tr>
<td></td>
<td>Buffer Submetric A: Percent of Assessment Area with Buffer</td>
<td>A (12)</td>
</tr>
<tr>
<td></td>
<td>Buffer Submetric D: Average Buffer Width</td>
<td>C (6)</td>
</tr>
<tr>
<td></td>
<td>Buffer Submetric C: Buffer Condition</td>
<td>C (6)</td>
</tr>
<tr>
<td></td>
<td>Final Attribute Score</td>
<td>79.73%</td>
</tr>
<tr>
<td>Hydrology</td>
<td>Water Source</td>
<td>C (6)</td>
</tr>
<tr>
<td></td>
<td>Hydromperiod</td>
<td>B (9)</td>
</tr>
<tr>
<td></td>
<td>Hydrologic Connectivity</td>
<td>C (6)</td>
</tr>
<tr>
<td></td>
<td>Final Attribute Score</td>
<td>58.33%</td>
</tr>
<tr>
<td>Physical Structure</td>
<td>Structural Patch Richness</td>
<td>B (9)</td>
</tr>
<tr>
<td></td>
<td>Topographic Complexity</td>
<td>C (6)</td>
</tr>
<tr>
<td></td>
<td>Final Attribute Score</td>
<td>62.50%</td>
</tr>
<tr>
<td>Biotic Structure</td>
<td>Plant Community (PC) Submetric A: Number of Plant Layers</td>
<td>A (12)</td>
</tr>
<tr>
<td></td>
<td>PC Submetric B: Number of Co-dominant Species</td>
<td>B (9)</td>
</tr>
<tr>
<td></td>
<td>PC Submetric C: Percent Invasion</td>
<td>A (12)</td>
</tr>
<tr>
<td></td>
<td>Horizontal Interspersion</td>
<td>C (6)</td>
</tr>
<tr>
<td></td>
<td>Vertical Biotic Structure</td>
<td>C (6)</td>
</tr>
<tr>
<td></td>
<td>Final Attribute Score</td>
<td>63.89%</td>
</tr>
<tr>
<td></td>
<td>Overall AA Score</td>
<td>66%</td>
</tr>
</tbody>
</table>

Hidden Valley Creek

Baseline Summary

The Hidden Valley Creek site covers 135 acres, located about 0.75 mile downstream of the Van Buren Boulevard Bridge and the City of Riverside's Regional Water Quality Control Plant (Figure 3.3-1). Nearly all the land at the site is owned by the State of California.

The site is bounded to the north and east by the Santa Ana River, to the south by a steep hillslope, and to the west by former wetlands. Neighboring land uses upstream and downstream along the Santa Ana River include Hidden Valley Nature Center and urban residential communities. Adjacent,
developed uplands may also be a source of nuisance species such as feral dogs and cats and nonnative vegetation. In addition, a private property inholding within the floodplain exists along with four inactive wells. The site currently supports a series of native riparian and floodplain vegetation communities. In addition, a large portion of the study area supports nonnative California annual grassland (Figure 3.3-14). The proposed restoration site and the downstream riparian and wetlands are a part of the 1,500-acre Hidden Valley Nature Center wildlife area along the Santa Ana River.

As described in Section 2.3, Existing Conditions and Land Uses, and Section 3.8, Hydrology and Water Quality, other than the Santa Ana River mainstem, the Hidden Valley Creek site does not currently have a perennial source of stream water and does not currently contain a tributary channel to the Santa Ana River. Water sources to the site are limited to storm runoff generated from the surrounding hillslopes during rain events. There is a perennial pond in the eastern side of the site, which is likely maintained by the high water table within the Santa Ana River floodplain. The alignment and shape of the Santa Ana River channel changes regularly within the northern edge of the Hidden Valley Creek site, in response to flood events. Scour and fill processes lead to the creation of new channels with sand and gravel bars, and to the filling of previous channels. Riparian vegetation colonizes on new river bars and becomes more established in areas that have sufficient time for plants to grow in between flood scouring events.

The Hidden Valley Creek site was previously supplied by treated wastewater from the City of Riverside’s Regional Water Quality Control Plant upstream. The treated water was routed alongside the Santa Ana River low flow channel, separated by a berm, until it reached the upstream end of the site and entered a headworks structure, which led into a 4,000-foot-long canal that routed the water to the human-made wetlands on the site. The wetlands served as a final treatment system that removed nitrogen from the water before it returned to the river. In 2010, high flows from a major storm caused the Santa Ana River to erode the berm separating the treated wastewater from the river, damaged the headworks infrastructure, and lowered the riverbed by about 8 feet. The lowering of the riverbed means the wastewater could not overcome the elevation change between the river and the head of the canal to reach the wetlands. Rather than construct a new diversion into the wetlands, the treatment plant installed a tertiary treatment system at the plant so that it could discharge directly into the river.

**Habitats and Sensitive Species**

**Vegetation Communities and Land Cover**

Vegetation mapping was conducted at the Hidden Valley Creek site between July and September 2016. Vegetation communities were classified based on the dominant and characteristic plant species, in accordance with *Vegetation Classification, A Manual of California Vegetation*. Vegetation and land cover at the site are shown in Table 3.3-10 and on Figure 3.3-14.
### Table 3.3-10. Vegetation Communities and Land Cover Types Occurring within the Hidden Valley Creek Site

<table>
<thead>
<tr>
<th>Common Name</th>
<th>CNPS Vegetation Alliance/Association¹</th>
<th>CWHR Habitat Classifications²</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Native Communities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black Willow Thickets</td>
<td>Salix gooddingii</td>
<td>Desert Riparian/Valley Foothill Riparian</td>
<td>14.2</td>
</tr>
<tr>
<td>California Buckwheat Scrub</td>
<td>Eriogonum fasciculatum</td>
<td>Coastal Scrub/Desert Scrub/Mixed Chaparral</td>
<td>2.61</td>
</tr>
<tr>
<td>Cattail Marshes</td>
<td>Typha (angustifolia, domingensis, latifolia)</td>
<td>Fresh Emergent Wetland</td>
<td>0.51</td>
</tr>
<tr>
<td>Fremont Cottonwood Forest</td>
<td>Populus fremontii</td>
<td>Desert Riparian/Valley Foothill Riparian</td>
<td>0.17</td>
</tr>
<tr>
<td>Fremont Cottonwood/Willow Forest</td>
<td>Populus fremontii/Salix (laevigata, lasiolepis, lucida ssp. lasiandra)</td>
<td>Desert Riparian/Valley Foothill Riparian</td>
<td>24.9</td>
</tr>
<tr>
<td>Fremont Cottonwood/Willow/Mulefat Forest</td>
<td>Populus fremontii/Salix laevigata/Salix spp./ Baccharis salicifolia</td>
<td>Desert Riparian/Valley Foothill Riparian</td>
<td>6.77</td>
</tr>
<tr>
<td>Fremont Cottonwood/Willow/Wild Grape Forest</td>
<td>Populus fremontii/Salix laevigata/Salix spp./Vitis girdiana</td>
<td>Desert Riparian/Valley Foothill Riparian</td>
<td>18.9</td>
</tr>
<tr>
<td>Mulefat Thickets</td>
<td>Baccharis salicifolia</td>
<td>Desert Riparian/Valley Foothill Riparian</td>
<td>15.7</td>
</tr>
<tr>
<td>Sandbar Willow Thickets</td>
<td>Salix exigua</td>
<td>Valley Foothill Riparian</td>
<td>14.7</td>
</tr>
<tr>
<td><strong>Nonnative Communities</strong></td>
<td></td>
<td></td>
<td>19.6</td>
</tr>
<tr>
<td>California Annual Grassland</td>
<td>N/A</td>
<td>Annual Grassland</td>
<td>19.6</td>
</tr>
<tr>
<td><strong>Land Cover Types</strong></td>
<td></td>
<td></td>
<td>17.1</td>
</tr>
<tr>
<td>Disturbed Habitat</td>
<td>Vacant (disturbed bare ground)</td>
<td>Barren</td>
<td>8.28</td>
</tr>
<tr>
<td>Open Water</td>
<td>Lacustrine</td>
<td>Riverine/Lacustrine</td>
<td>8.62</td>
</tr>
<tr>
<td>Urban/Developed</td>
<td>N/A</td>
<td>Urban</td>
<td>0.22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>135</td>
</tr>
</tbody>
</table>

¹ Sawyer et al. 2009  
² CDFG 2005  

CNPS = California Native Plant Society; CWHR = California Wildlife Habitat Relationships

Dense woodland, riparian forest, grassland, and scrub vegetation is present throughout most of the Hidden Valley Creek site. The Hidden Valley Creek site currently supports a variety of native vegetation communities including California Buckwheat Scrub, Cattail Marshes, Fremont Cottonwood Forest, Fremont Cottonwood/Willow Forest, Fremont Cottonwood/Willow/Mulefat Forest, Fremont Cottonwood/Willow/Wild Grape Forest, Mulefat Thickets, and Sandbar Willow Thickets. These native communities occur along the Santa Ana River mainstem, active floodplain, and former recycled water channel (Figure 3.3-14). Upland areas consist mostly of California Annual Grassland that is dominated by nonnative grasses. The principal plant species on the site include western sycamore (*Platanus racemosa*), arroyo willow (*Salix lasiolepis*), blue elderberry (*Sambucus*...
nigra ssp. Caerulea), and mulefat (Baccharis salicifolia). Dominant nonnative vegetation consists of giant reed and common poison hemlock (Conium maculatum).

Additional land cover types observed in the Hidden Valley Creek site include Disturbed Habitat, Urban/Developed Areas, and Open Water (Figure 3.3-14). Disturbed Habitat exists mostly on the southern edge of the site where some bare ground is present within and along trails. Urban/Developed Areas consist of pavement at the bike/pedestrian path in the southeastern corner of the site. Open Water is present where the Santa Ana River runs along the northern edge of the site and at the perennial pond located in the eastern side of the site.

**Aquatic Habitat**

The Hidden Valley Creek site was visited on August 11, 2016, and August 24, 2017, for aquatic habitat assessments. As described above, the Santa Ana River mainstem is the only stream feature active within the site and runs along its northern edge. The Hidden Valley Creek site does not currently have any other perennial source of water, nor a tributary channel to the Santa Ana River. There is a large, perennial pond located in the eastern side of the site, which is likely maintained by the high water table within the Santa Ana River floodplain. Water sources to the site are limited to storm runoff generated from the surrounding hillslopes during rain events. Designated critical habitat for Santa Ana sucker includes the Santa Ana River and adjacent riparian habitat at the Hidden Valley Creek site (Figure 3.3-15), but the final critical habitat designation acknowledges that most tributaries in this portion of the critical habitat, including Hidden Valley Creek, do not provide suitable habitat for the Santa Ana sucker (75 Federal Register 77962).

**Sensitive Plant Species**

Based on its location and general conditions, the Hidden Valley Creek site could potentially provide habitat for Santa Ana River woolly-star. Habitat assessments were performed during June to September 2016 and verified suitable habitat conditions for the woolly-star in areas currently vegetated by California annual grassland. No sensitive plant species were observed during visits, and the site does not currently support suitable habitat for any other sensitive plant species (Appendix B).

**Invasive/Nonnative Plants**

Within the Hidden Valley Creek site, upland areas consist mostly of California annual grassland, which is dominated by nonnative grasses. Other prevalent nonnative vegetation consists of giant reed and common poison hemlock.

**Sensitive Fish and Wildlife Species Habitat Suitability and Observations**

Because the former treated wastewater does not now support perennial flows to the wetlands, there is currently no habitat for Santa Ana sucker or arroyo chub other than within the Santa Ana River mainstem, which runs along the northern edge of the site. Arroyo chub has historically been seen within the wetted channel of the Santa Ana River mainstem within the site.
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The pond within the site appears to provide high-quality aquatic habitat for southwestern pond turtle, two-striped gartersnake, and south coast gartersnake (Figure 3.3-16), although none of these species were observed during baseline survey visits. The water appeared to be of sufficient depth to provide cover, and cattails and willows provide cover in shallow water along the pond's edges. The pond is large enough that its surface receives direct sunlight, allowing for basking opportunities on exposed logs. The surrounding upland habitat to the northwest within the Santa Ana River floodplain is also of high quality, with a combination of dense willow vegetation, arrow weed scrub, and open sandy areas where the river channel formerly ran. Conversely, habitat quality for southwestern pond turtle and gartersnakes is marginally suitable in the southeastern portions of the site due to an extensive riparian overstory and dense understory. Habitat quality is also marginal at the eastern edge of the site due to extensive human use of the area.

Least Bell’s vireos make abundant use of the Hidden Valley Creek site. Surveyors detected 37 least Bell’s vireo territories at the site (Figure 3.3-16), with paired birds known to be breeding at 12 of the territories. Only a singing male was detected at each of the other 25 territories. In addition, two non-federally listed willow flycatchers were detected on May 23, 2016, at the Hidden Valley Creek site. There were also detections of 34 other bird species, including two state species of special concern, the yellow-breasted chat (breeding) and yellow warbler (Figure 3.3-16). Riparian habitat quality at the site was generally good, with a species-rich and structurally diverse native vegetation community at most sample points. Human disturbance is a limitation in some parts of the site, but is less of an issue than at the Anza Creek/Old Ranch Creek and Lower Hole Creek sites, with high levels of disturbance confined to a small portion of the Hidden Valley Creek site.

**Invasive/Nonnative Fish and Wildlife Species**

No aquatic invasive species are known from the Hidden Valley Creek site, but a variety of invasive species are known to occur in the Santa Ana River system, including largemouth bass, mosquitofish, and bullfrogs. Restoration of a flowing tributary stream and good water quality in the pond would create habitat for nonnative aquatic species in addition to the target native species; thus, management to minimize these risks will be needed (e.g., seasonal flushing flows that create unsuitable conditions and could be lethal to nonnatives). Invasive terrestrial species including brown-headed cowbirds (a significant nest parasite on least Bell’s vireo) are present at the site. Cowbird control may be needed to optimize site suitability for the vireo and other desirable riparian birds. Field surveys did not identify feral pet predators at the site, but it is also possible that feral or pet dogs or cats may be preying on native wildlife at the site, and control of these predators may prove to be appropriate. Wild boar also pose a threat to the recovery of the site, as their rooting behavior is destructive to young vegetation. The Hidden Valley Creek site also has recent recordings for the polyphagous shot hole borer beetle, which poses a substantial threat to existing riparian habitat on site and in the watershed.

**Jurisdictional Delineation**

Jurisdictional delineation fieldwork was performed at the Hidden Valley Creek site on August 8, 2016. Ten features were delineated within the Hidden Valley Creek site or immediately adjacent to the site or proposed access or staging areas, including two human-made channels (Drainages 1 and 3), one unnamed southern tributary of the Santa Ana River (Drainage 2), six depressional features, and the Santa Ana River (Figures 3.3-17 and 3.3-18). Refer to the Jurisdictional Delineation Report in Appendix B for descriptions of each drainage feature. It should be noted that due to minor
modifications in the project boundary limits, the acreages and linear feet for the jurisdictional drainage features provided below have been updated from those values previously provided in the Jurisdictional Delineation Report. It should be noted that due to minor modifications in the project boundary limits at the Hidden Valley Creek site, the acreages and linear feet for the jurisdictional drainage features provided below have been updated from those values previously provided in the Jurisdictional Delineation Report.

A total of 34.2 acres of waters of the U.S. and state were mapped within this site. There is complete overlap between waters of the U.S. and waters of the state. Of this, 27.5 acres are wetland waters and 6.64 acres are non-wetland waters (Table 3.3-11). On October 30, 2018, a field verification meeting was conducted with a representative of USACE. During the field verification meeting, USACE provided verbal direction that only wetlands outside of the OHWM should be classified as wetlands (i.e., adjacent wetlands) and that areas meeting all three wetland parameters but located below the OHWM should not be classified as wetlands per new internal USACE understanding. However, for the purposes of this EIR, areas that exhibit wetlands characteristics (i.e., meet all three wetland criteria), regardless of their location with regard to the OHWM, were classified as wetlands. In addition, a total of 144 acres of CDFW jurisdiction were mapped within the site. Of this, 113 acres are CDFW associated riparian and 31.11 acres are CDFW streambed (Table 3.3-11).

### Table 3.3-11. Jurisdictional Waters and Wetlands within the Hidden Valley Creek Site

<table>
<thead>
<tr>
<th>Feature</th>
<th>Linear Feet</th>
<th>Wetland Acres</th>
<th>Non-wetland Acres</th>
<th>Riparian Acres</th>
<th>Streambed Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage 1</td>
<td>4,079</td>
<td>1.01</td>
<td>0.31</td>
<td>0.95</td>
<td>2.23</td>
</tr>
<tr>
<td>Drainage 2</td>
<td>965</td>
<td>--</td>
<td>0.11</td>
<td>0.29</td>
<td>0.18</td>
</tr>
<tr>
<td>Drainage 3</td>
<td>4,126</td>
<td>1.87</td>
<td>--</td>
<td>12.0</td>
<td>--</td>
</tr>
<tr>
<td>Depression 1</td>
<td>--</td>
<td>0.17</td>
<td>--</td>
<td>0.17</td>
<td>--</td>
</tr>
<tr>
<td>Depression 2</td>
<td>--</td>
<td>0.90</td>
<td>--</td>
<td>0.90</td>
<td>--</td>
</tr>
<tr>
<td>Depression 3</td>
<td>--</td>
<td>4.28</td>
<td>--</td>
<td>6.26</td>
<td>--</td>
</tr>
<tr>
<td>Depression 4</td>
<td>--</td>
<td>1.05</td>
<td>--</td>
<td>1.62</td>
<td>--</td>
</tr>
<tr>
<td>Depression 5</td>
<td>--</td>
<td>1.03</td>
<td>--</td>
<td>1.62</td>
<td>--</td>
</tr>
<tr>
<td>Depression 6</td>
<td>--</td>
<td>2.19</td>
<td>--</td>
<td>7.35</td>
<td>--</td>
</tr>
<tr>
<td>Santa Ana River</td>
<td>4,825</td>
<td>15.1</td>
<td>6.22</td>
<td>82.0</td>
<td>28.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13,995</strong></td>
<td><strong>27.53</strong></td>
<td><strong>6.64</strong></td>
<td><strong>113</strong></td>
<td><strong>31.1</strong></td>
</tr>
</tbody>
</table>

1 Total acreage may not sum to the total shown; total is reflective of rounding GIS raw data in each category.
Figure 3.3-16
Hidden Valley Creek Sensitive Fish and Wildlife Observations and Potential Aquatic Species Habitat Map
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend
- Tributaries Restoration Project and Mitigation Reserve Program Phase I
- Expanded Mitigation Reserve Program Phase II

Sensitive Species Observations
- Least Bell's Vireo
- Southwestern Willow Flycatcher
- Willow Flycatcher
- Yellow-breasted Chat
- Santa Ana River Woolly Star

Potential Habitat
- Western Pond Turtle - Migratory Corridor
- Western Pond Turtle - Aquatic
- Western Pond Turtle - Upland
- Low-quality BUOW Habitat
- Moderate-quality BUOW Habitat
- Two-Striped Garter Snake - Aquatic
- Two-Striped Garter Snake - Upland
- Fish Habitat

Source: ICF, SBVMWD 2018

1:7,200
Figure 3.3-17

Hidden Valley Creek Jurisdictional Aquatic Resources Map (USACE/RWQCB)
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend
Tributaries Restoration Project and Mitigation Reserve Program Phase I
- Temporary Impact
- Permanent Impact
Expanded Mitigation Reserve Program Phase II
Waters of the U.S. and State (USACE/RWQCB)
- Nonwetland
- Wetland

Source: ICF, SBVMWD 2018
Figure 3.3-18
Hidden Valley Creek Jurisdictional Aquatic Resources Map (CDFW)
Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program

Legend
- Tributaries Restoration Project and Mitigation Reserve Program Phase I
- Temporary Impact
- Permanent Impact
- Expanded Mitigation Reserve Program Phase II
- Waters of the State (CDFW)
  - Streambed
  - Riparian

Source: ICF, SBVMWD 2018

1:7,200
Wetland Condition

CRAM practitioners conducted field surveys of the Hidden Valley Creek site on August 31, 2016. Five CRAM AAs were surveyed in the Hidden Valley Creek site, all distributed within the USACE jurisdictional areas. The overall CRAM score and attribute scores are shown in Table 3.3-12. The overall CRAM scores for all AAs were moderate, ranging from 53 to 69. Refer to the CRAM Report in Appendix F of Appendix B for descriptions of each AA.

Table 3.3-12. 2016 CRAM Metric, Attribute, and Overall Scores for the Hidden Valley Creek Site

<table>
<thead>
<tr>
<th>Attributes</th>
<th>CRAM Metric and Submetrics</th>
<th>CRAM Assessment Areas and CRAM Attribute Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AA1 (Depression) AA2 AA3 AA4 AA5</td>
</tr>
<tr>
<td>Buffer and Landscape Context</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buffer and Landscape Context</td>
<td>Stream Corridor Continuity</td>
<td>A (12)1 A (12) A (12) A (12) A (12)</td>
</tr>
<tr>
<td>Buffer Submetric C: Buffer Condition</td>
<td>Buffer Submetric C: Buffer Condition</td>
<td>B (9) B (9) B (9) B (9) B (9)</td>
</tr>
<tr>
<td>Final Attribute Score</td>
<td></td>
<td>93.30% 93.30% 93.30% 93.30% 93.30%</td>
</tr>
<tr>
<td>Hydrology</td>
<td>Water Source</td>
<td>C (6) D (3) D (3) D (3) D (3)</td>
</tr>
<tr>
<td>Channel Stability</td>
<td>Channel Stability</td>
<td>A (12)2 A (12) C (6) C (6) C (6)</td>
</tr>
<tr>
<td>Hydrologic Connectivity</td>
<td>Hydrologic Connectivity</td>
<td>B (9) A (12) D (3) C (6) C (6)</td>
</tr>
<tr>
<td>Final Attribute Score</td>
<td></td>
<td>75.00% 75.00% 33.33% 41.67% 41.67%</td>
</tr>
<tr>
<td>Physical Structure</td>
<td>Structural Patch Richness</td>
<td>C (6) D (3) D (3) D (3) D (3)</td>
</tr>
<tr>
<td>Topographic Complexity</td>
<td>Topographic Complexity</td>
<td>C (6) C (6) D (3) D (3) D (3)</td>
</tr>
<tr>
<td>Final Attribute Score</td>
<td></td>
<td>50.00% 37.50% 25.00% 25.00% 25.00%</td>
</tr>
<tr>
<td>Biotic Structure</td>
<td>Plant Community (PC) Submetric A: Number of Plant Layers</td>
<td>B (9) B (9) A (12) B (9) B (9)</td>
</tr>
<tr>
<td>PC Submetric B: Number of Co-dominant Species</td>
<td>PC Submetric B: Number of Co-dominant Species</td>
<td>B (9) C (6) D (3) C (6) D (3)</td>
</tr>
<tr>
<td>Vertical Biotic Structure</td>
<td>Vertical Biotic Structure</td>
<td>C (6) B (9) C (6) C (6) C (6)</td>
</tr>
<tr>
<td>Final Attribute Score</td>
<td></td>
<td>61.11% 52.78% 61.10% 63.89% 58.30%</td>
</tr>
<tr>
<td>Overall AA Score</td>
<td></td>
<td>69 65 53 56 55</td>
</tr>
</tbody>
</table>

1Assessed as Aquatic Area Abundance from the Depressional CRAM Module for AA1.
2Assessed as Hydroperiod from the Depressional CRAM Module for AA1.
3.3.3 Environmental Impacts

Methods for Analysis

This EIR evaluates potential significant impacts associated with the proposed project based on technical studies and reports. Technical studies and reports evaluated for this analysis include the *Opportunities and Constraints for Tributary Restoration Sites Report* (Appendix B), which includes the Vegetation Mapping and Sensitive Plant Surveys Report; the Aquatic Species Habitat Assessment Report; the Riparian Bird Survey and Habitat Assessment Report; the Habitat Assessment and Surveys for Los Angeles Pocket Mouse, Black-tailed Jackrabbit, and Coast Horned Lizard Report; the Habitat Assessment for Coastal California Gnatcatcher and Burrowing Owl Report; the Jurisdictional Delineation Report; and the Wetland Condition Assessment Report. These technical reports are based on an analysis of the existing biological resources and jurisdictional areas that could be affected in the short term (i.e., during construction) and in the long term (i.e., as a result of habitat modification and improvement, and any necessary maintenance and monitoring). Refer to the methodology for baseline assessments of key resources in the technical report documents included in Appendix B for more information on field verification and baseline habitat assessments for special-status species, vegetation mapping, jurisdictional delineation of aquatic resources, and wetland condition assessment.

Direct impacts would occur when special-status species are directly affected by injury, mortality, or disruption of essential behaviors (e.g., feeding, reproduction, and migration) during project activities such as vegetation removal, excavation, and grading. Direct impacts can occur during project construction and also post-construction during maintenance and monitoring activities. Direct impacts can also occur when aquatic resources are killed or otherwise affected by work activities such as reduced water quality through increased erosion or sedimentation. Indirect impacts are typically further in time and may occur as a result of habitat or site modifications, such as changes in surface water hydrology; long-term conversion of aquatic, riparian, and wetland habitat suitability; edge effects; and shifts in population distribution over time. These types of indirect impacts can affect vegetation communities, aquatic and wetland habitat, and/or their potential use by sensitive fish and wildlife species. Elevated levels of noise or disturbance (e.g., vibration of construction equipment, presence of construction personnel) could also result in indirect impacts on sensitive species.

This analysis does not include a discussion of local policies or ordinances protecting biological resources, as the project would not result in the removal of native trees or oak trees (Ordinance 559) and the project would not be required to pay any SKR mitigation fee, specifically $500.00 per gross acre of the parcels proposed for development per Riverside County (Ordinance 663), given the proposed project is not development.

The discussion below identifies potential direct and indirect construction and operational impacts from the proposed project and the measures that would be required to mitigate impacts found to be potentially significant.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below:
- 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 CDFW or USFWS.
- A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- A substantial adverse effect on state or federally protected wetlands (e.g., marshes, vernal pools, coastal wetlands) through direct removal, filling, hydrological interruption, or other means.
- Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

As noted in Chapter 1, Introduction, the analysis and conclusions contained in the Initial Study (see Appendix D) prepared for the proposed project considered and then eliminated a number of impacts from further analysis. Therefore, only those impacts and corresponding thresholds of significance noted below were determined to require further analysis and are addressed in this EIR. The proposed project was determined not to conflict with a tree preservation policy or ordinance. For further discussion of impacts found to be less than significant and eliminated from further discussion on that basis, refer to Chapter 6, Effects Not Found Significant.

**Impacts and Mitigation Measures**

As detailed in Chapter 2 and summarized in Section 3.3.2, Environmental Setting, the proposed project would create and enhance habitat for many sensitive and listed species through restoration of four Santa Ana River tributary sites. Overall, the proposed project is expected to result in a net increase in aquatic and riparian habitat and a net improvement in aquatic, riparian, and upland habitat quality to support the special-status species listed in Table 3.3. No net loss of sensitive habitat including wetlands and other waters would occur. However, the project construction and operation would temporarily affect occupied habitat and Critical Habitat for federally and state-listed species, sensitive vegetation communities, wetlands and waters, nesting habitat, and wildlife corridors. Formal consultation with USFWS and CDFW will be completed to secure incidental take authorization for state- and federally listed species. Avoidance and minimization measures are included to reduce potentially significant impacts on biological resources.

As detailed in Section 2.7, the Mitigation Reserve Program would result in the development of a combined mitigation/conservation bank and advance mitigation credit program project to secure mitigation values for future waters of the U.S. and waters of the state impacts. The Mitigation Reserve Program will also secure values for species covered by the ESA and CESA and California special-status species, including but not limited to Santa Ana sucker, arroyo chub, western pond turtle, two-striped gartersnake, least Bell’s vireo, southwestern willow flycatcher, yellow-breasted chat, California gnatcatcher, western yellow-billed cuckoo, and Santa Ana River woolly-star. Some of the mitigation values developed for the Mitigation Reserve Program are derived from the tributaries restoration footprint and the associated 100-foot riparian buffer, referred to as the Tributaries...
Restoration Program Phase I. However, there are additional restoration opportunities beyond the current footprint that could provide functional life to the habitat while generating additional mitigation values for Valley District, or others, to use for future projects’ mitigation, referred to as the Expanded Mitigation Reserve Program Phase II. There is no funding currently secured for the Expanded Mitigation Reserve Program Phase II restoration activities and they are discussed at a program level.

Impact BIO-1: Potential to have an 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 Wildlife or U.S. Fish and Wildlife Service (Less than significant with mitigation incorporated)

Construction and operation activities, including long-term maintenance, have the potential to cause direct and indirect impacts on the following sensitive and listed species if individuals are present at the project sites during construction:

Special-status Aquatic Species
- Santa Ana sucker and Critical Habitat for Santa Ana sucker
- Arroyo chub

Special-status Semi-aquatic Species
- Southwestern pond turtle
- Two-striped gartersnake
- South coast gartersnake

Special-status Riparian Bird Species
- Clark's marsh wren
- Coastal California gnatcatcher
- Least Bell's vireo (nesting) and Critical Habitat for least Bell's vireo
- White-tailed kite (nesting)
- Yellow-breasted chat (nesting)
- Yellow warbler (nesting)

Special-status Riparian Bat Species
- Pocketed free tailed bat
- Western yellow bat

Special-status Terrestrial Species
- Coastal whiptail
- Coast horned lizard
- San Diego black-tailed jackrabbit
- Southern California legless lizard
- Western burrowing owl

**Special-status Plant Species**
- Smooth tarplant
- Paniculate tarplant
- Santa Ana River woolly-star
- Southern California black walnut
- Robinson’s pepper-grass
- Brand’s star phacelia

**Table 3.3-13** identifies the acres of habitat or the numbers of populations for certain special-status species occurring in the project sites for each of the project components. Habitat for Santa Ana sucker, two-striped gartersnake, and western pond turtle was assessed on August 11, 2016, at the project sites in support of ongoing efforts to restore aquatic habitat for these species. Staff walked the accessible extent of each wetted stream channel. Notes taken on the character of the stream channel included presence and attributes of surface waters, incidental native and/or nonnative aquatic species observations, and degree of human use. Habitat quality for native fishes was graded on five attributes: flow, substrate, habitat complexity, presence of nonnative invasive aquatic species, and canopy cover. Habitat quality for western pond turtle was graded on four attributes: presence of perennial pond habitat deeper than 1.6 feet, presence of intact adjacent upland habitat, degree of human use, presence of nonnative aquatic species, and canopy cover. Habitat quality for two-striped gartersnake was graded on four attributes: presence of surface waters, presence of intact adjacent upland habitat, degree of human use, presence of nonnative aquatic species, and canopy cover. Habitat quality for two-striped gartersnake was graded on four attributes: presence of surface waters, presence of intact adjacent upland habitat, degree of human use, and presence of nonnative aquatic species. Refer to Appendix B of Appendix B for the general habitat conditions at each site, along with the habitat quality ratings for the fish, snake, and turtle species assessed.

Refer to Appendix C of Appendix B for the habitat assessment and survey for (1) assessment of existing riparian bird habitat at the sites; (2) surveys for least Bell’s vireo, Southwestern willow flycatcher, and yellow-breasted chat; and (3) recording of the presence of other bird species to evaluate habitat use at the project sites. Four site visits were conducted at each project site between May 16 and July 14, 2016. Data were collected at: (1) vegetation/avian point count stations (328-foot-radius circle) (hereafter vegetation point), (2) vegetation stands, where a "stand" consists of vegetation that is distinct from the neighboring vegetation communities (e.g., willow scrub versus willow-cottonwood stand), and (3) general observations while walking through each project site. Habitat parameters were recorded to quantify composition, structure, cover, and disturbance at each vegetation point. All project sites were surveyed for least Bell’s vireo, southwestern willow flycatcher, and yellow-breasted chat during four site visits in 2016 to document presence and assess habitat. Protocol surveys for least Bell’s vireo and southwestern willow flycatcher were not necessary because absence validation is not needed for habitat restoration activities. Therefore, the standard eight visits for vireos and five visits for flycatchers were not conducted, but each site was visited four times. Biologists followed standard survey techniques described in the USFWS least Bell’s vireo survey guidelines and the protocol for southwestern willow flycatcher surveys. All birds were identified to species when possible. Unidentified birds were also recorded but were not used in the analyses. All project sites were occupied by riparian birds such as least Bell’s vireo and yellow-breasted chat, indicating that there is habitat available to support these species.
### Table 3.3-13. Acres or Populations of Temporary Impacts on Special-Status Species at the Tributaries Restoration Project and Mitigation Reserve Program Phase I and Phase II Sites

<table>
<thead>
<tr>
<th>Special-Status Species Name</th>
<th>Total Acres in Study Area</th>
<th>Total Populations in Study Area</th>
<th>Phase I Direct Impact</th>
<th>Phase II Direct Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anza Creek/Old Ranch Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least Bell’s vireo critical habitat</td>
<td>287.82</td>
<td>N/A</td>
<td>22.46</td>
<td>265.36</td>
</tr>
<tr>
<td>Least Bell’s vireo territories</td>
<td>73.35</td>
<td>17</td>
<td>8.44²/2³</td>
<td>64.91²/15³</td>
</tr>
<tr>
<td>Southwestern Willow Flycatcher territories¹</td>
<td>6.49</td>
<td>1</td>
<td>0.31/0</td>
<td>6.18/1</td>
</tr>
<tr>
<td>Willow Flycatcher territories¹</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Yellow-breasted Chat territories¹</td>
<td>122.10</td>
<td>25</td>
<td>11.69²/3³</td>
<td>110.41²/22³</td>
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<tr>
<td>Santa Ana River Woolly Star</td>
<td>N/A</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Santa Ana sucker (Santa Ana River confluence)⁴</td>
<td>N/A</td>
<td>5</td>
<td>5</td>
<td>0</td>
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<tr>
<td>Santa Ana sucker critical habitat</td>
<td>170.75</td>
<td>N/A</td>
<td>16.82</td>
<td>153.93</td>
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<td>Western Pond Turtle – Aquatic habitat</td>
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<td>Lower Hole Creek</td>
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<td>Santa Ana sucker (Santa Ana River confluence)⁴</td>
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<tr>
<td>Western Pond Turtle – Aquatic habitat</td>
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<td>0</td>
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<tr>
<td>Western Pond Turtle – Migratory Corridor</td>
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### Special-Status Species Name

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<tr>
<th>Special-Status Species Name</th>
<th>Total Acres in Study Area</th>
<th>Total Populations in Study Area</th>
<th>Phase I Direct Impact</th>
<th>Phase II Direct Impact</th>
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<td>Low-quality BUOW habitat</td>
<td>1.90</td>
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<tr>
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<td>N/A</td>
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<tr>
<td>Coast Horned Lizard habitat – Poor</td>
<td>10.22</td>
<td>N/A</td>
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<tr>
<td>LA Pocket Mouse habitat – Poor</td>
<td>10.22</td>
<td>N/A</td>
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<td><strong>Hidden Valley Creek</strong></td>
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<tr>
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<td>42.87</td>
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<tr>
<td>Black-tailed Jackrabbit habitat – Moderate</td>
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<tr>
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</tr>
<tr>
<td>LA Pocket Mouse habitat – Poor</td>
<td>21.52</td>
<td>N/A</td>
<td>0.00</td>
<td>21.52</td>
</tr>
</tbody>
</table>

¹Total acres assumes territories includes a 300-foot buffer around the center point.
²Total acres potentially affected within the mapped territories including a 300-foot buffer.
³Number of mapped territories potentially affected.
⁴Estimated number of fish that may be captured and relocated from work area based on current conditions of tributary at confluence with Santa Ana River.

N/A = not applicable or not available

Refer to Appendix D of Appendix B for the habitat assessment for Los Angeles pocket mouse, black-tailed jackrabbit, and coast horned lizard at the project sites. Baseline habitat for these species was assessed at the sites to inform restoration opportunities and constraints. Surveys were conducted on August 17, 2016. Each site was walked throughout, with a focus on those areas of potential habitat that were identified during the aerial photo review prior to visiting the sites. Surveys...
evaluated potential habitat for suitability for each species based on density of vegetation cover, vegetation species, soils, presence of burrows, and presence of sparse shrubs for cover. Areas covered by dense riparian vegetation that prevented access during visits to the sites were not surveyed, as these areas are not suitable for black-tailed jackrabbit, Los Angeles pocket mouse, or coast horned lizard.

Temporary construction effects could potentially affect special-status species and/or their associated habitats, including aquatic, and sensitive wetland and riparian habitat. During construction, these impacts would include temporary habitat disturbance and degradation, fragmentation, interference with foraging/feeding behavior, interference with migration and reproduction, and direct injury or mortality. Long-term impacts resulting from the protection and operations of the streams are anticipated to be largely beneficial. Operations and maintenance of the habitat will result in the creation, re-establishment, and enhancement of aquatic, wetland, riparian, and upland habitats while providing overall improved ecological function to each stream and its associated riparian corridor.

**Impact BIO-1.1: Construction- and Operation and Maintenance-related Direct Impacts on Special-status Species**

*N. Tributaries Restoration Project and Mitigation Reserve Program Phase I*

**Construction Impacts**

Construction would be completed using heavy equipment and would occur during a period of approximately 8 months (see Chapter 2). Construction-related direct impacts on special-status species could include the following. Indirect impacts are discussed under Impact BIO-1.2.

**Aquatic Species**

Santa Ana sucker and arroyo chub sometimes inhabit perennial waters within the limits of disturbance at the Anza Creek and Lower Hole Creek restoration sites, primarily at the confluence with the Santa Ana River. The Old Ranch Creek and Hidden Valley Creek restoration sites lack perennial or intermittent aquatic habitat and are not expected to include construction-related impacts on these species. During construction activities at the Anza Creek and Lower Hole Creek sites, Santa Ana sucker and arroyo chub would be excluded from the work area by placing a barrier at the upstream and downstream limits of work, then removing aquatic species by first chasing fish out a temporary opening then using an electroshocker for the few remaining fish. Native species would be relocated to nearby suitable habitat. Nonnative species would be sacrificed. If individuals remain after the pre-construction removal and exclusion activities, they could be subjected to desiccation, suffocation, and/or predation due to stranding in isolated or dewatered aquatic habitats. Animals could also be harmed during dewatering or diversion activities if entrained in pumping equipment or impinged at intakes if pumping methods are used in the diversions. The barriers may be nets that allow flow to pass but have openings small enough to prevent passage of aquatic species in the stream. The barriers may be made of solid materials, such as sandbags, or a pushed-up soil berm to prevent both fish and flow from entering the construction site.

Solid barriers would also protect water quality downstream of the work site. The length of stream blocked and defished would depend on the amount of work to be done, presence of groundwater, and length of diversion. The length of stream excluded from aquatic species would be shorter when dewatering is required for construction because the smaller area reduces the contribution of
groundwater into the area being dewatered. After construction within the stream channel is completed, the exclusionary barrier would be removed and fish would have access to the restored area's aquatic habitat.

A total of 27.6 acres of Santa Ana sucker Critical Habitat would also be temporarily affected through dewatering and construction activities. Approximately 0.50 acre would be permanently changed to an improved state by the proposed restoration at the Anza Creek, Hidden Valley Creek, and Lower Hole Creek restoration sites.

Substances toxic to Santa Ana sucker and arroyo chub, such as petroleum products, transmission fluid, hydraulic fluid, coolant, and degreaser would be prevented from entering aquatic habitats by implementation of best management practices (BMPs) such as washing equipment prior to entering the work area, inspecting hydraulic fluid hose daily and replacing worn hoses before they leak, and refueling a safe distance away from aquatic habitats. The contractor will develop a Spill Prevention Control and Countermeasures Plan that details specific methods the contractor will use to prevent spills and quickly clean up spills that occur. The Spill Prevention Control and Countermeasures Plan is required to be approved by the Contracting Agency prior to work beginning.

**Semi-aquatic Species**

Southwestern pond turtle, two-striped gartersnake, and south coast gartersnake inhabit emergent vegetation and dense multi-storied riparian vegetation along the fringes of perennial waters at the Anza Creek and Lower Hole Creek restoration sites. The Old Ranch Creek and Hidden Valley Creek restoration sites lack perennial or intermittent aquatic habitat and are not expected to include impacts on these species. During restoration activities, potential habitat would be temporarily blocked in the Anza Creek and Lower Hole Creek sites as part of the exclusion and dewatering, but the animals are expected to return soon after the restored areas are submerged and native vegetation has begun to mature.

Potential impacts on these species from construction activities could include harm and displacement during removal of emergent and woody vegetation, excavation and filling, grading in existing stream channels and riparian areas, and placement of boulders and large woody material along the restored channels. During the construction period, semi-aquatic species could be injured or killed if they are buried or crushed by construction equipment, or could be injured or killed by equipment crossing and working within the streambed and riparian zone. Exclusions and dewatering of work areas, as described in the previous subsection on aquatic species, would minimize the possibility of harming semi-aquatic species.

Additionally, southwestern pond turtles build subterranean nests that could be buried or crushed. The nests are constructed upland of a perennial water source (ranging from 300 feet to 0.5 mile), and staging and construction activities could crush subterranean nests containing eggs or juveniles overwintering in the nest. Accidental burial of turtles and gartersnakes during construction and habitat enhancement activities could injure or kill adults, juveniles, and eggs.

During construction, southwestern pond turtles would be excluded from the work area by placing a barrier at the upstream and downstream limits of work, then removing southwestern pond turtles by first chasing turtles out a temporary opening then using traps for the few remaining turtles. Native turtles would be relocated to nearby suitable habitat. Nonnative turtles would be sacrificed. If individuals remain after the pre-construction removal and exclusion activities, they could be subjected to predation due to stranding in isolated or dewatered aquatic habitats.
Construction could affect special-status semi-aquatic species within existing access roads by hitting or crushing these species. These roads would be graded for construction vehicle traffic to a width of 12 to 15 feet, and staging areas would be improved as necessary to allow vehicles to be parked and materials to be stored, as shown on Figures 3.3-4, 3.3-9, and 3.3-14. Access roads would avoid sensitive areas to the maximum extent practicable. Staging areas would be placed strategically as far away from sensitive areas as practicable, balanced with the need for efficient delivery of materials with the construction sites. Staging areas and construction roads would be restored at the conclusion of construction.

Substances toxic to southwestern pond turtle, two-striped gartersnake, and south coast gartersnake, such as petroleum products, transmission fluid, hydraulic fluid, coolant, and degreaser would be prevented from entering habitats of special-status species by implementation of BMPs as described in the previous subsection on aquatic species.

**Special-status Riparian Bird Species**

Riparian bird species including Clark’s marsh wren and coastal California gnatcatcher inhabit the restoration site year-round, and least Bell’s vireo, white-tailed kite, yellow-breasted chat, and yellow warbler are known, or expected, to nest within the limits of disturbance. In addition, least Bell’s vireo territories and USFWS Critical Habitat for least Bell’s vireo are present within the project sites. These species would experience temporary loss of nesting and foraging opportunities in areas where vegetation is removed, and would likely remain out of these areas until restored vegetation becomes denser and more mature.

These species occur in grassland, scrub, riparian, and wetland habitats. Within the project sites, special-status bird species have potential to nest within the following vegetation communities: Arrow Weed Thickets, Black Willow Thickets, Black Willow/Fremont Cottonwood Forest, California Buckwheat Scrub, California Sycamore Woodlands, Cattail Marshes, Fremont Cottonwood Forest, Fremont Cottonwood/Willow Forest, Fremont Cottonwood/Willow/Mulefat Forest, Fremont Cottonwood/Willow/Wild Grape Forest, Mulefat Thickets, Salt Grass Flats, Sandbar Willow Thickets, California Annual Grassland, Giant Reed Breaks, and Nonnative Riparian. If occupied by sensitive species, construction activities involving removal or modification of vegetation from the riparian, grassland, scrub, forest, woodland, and/or wetland plant communities could disturb, injure, or kill individuals or cause nest failure. All vegetation communities within the limits of disturbance and adjacent buffer areas also have the potential to support nesting birds protected under the MBTA and CFGC.

California gnatcatcher may also be affected by construction as they are resident birds in the region, although suitable habitat for gnatcatcher is limited at the Tributaries Restoration Project sites. Removal of suitable habitat and construction activities adjacent to suitable habitat may affect foraging and sheltering habitat and reduce prey availability. No impacts are expected on nesting California gnatcatcher as construction is expected to occur during the fall or winter months; however, if construction were to occur during the nesting season, direct impacts on California gnatcatcher could occur.

Of particular concern are least Bell’s vireo and white-tailed kite. Active least Bell’s vireo territories were observed at each of the restoration sites, and nesting kite have also been recorded in the general project vicinity, but not at the Tributaries Restoration Project and Mitigation Reserve Program Phase I site. The Tributaries Restoration Project and Mitigation Reserve Program Phase I has the potential to directly affect least Bell’s vireo individuals, nests, and occupied habitat with
active territories during construction in the nesting season. Construction would also affect designated USFWS Critical Habitat for least Bell's vireo. Up to 30.5 acres of USFWS Critical Habitat would be temporarily affected within the limits of disturbance by removal of vegetation and general construction disturbance. In addition, the Tributaries Restoration Project and Mitigation Reserve Program Phase I has the potential to directly affect white-tailed kite individuals, nests, occupied habitat, and foraging habitat during construction. White-tailed kite are fully protected under CESA.

Although construction scheduling is not currently known, it is expected to occur in the summer and early fall months, during periods of low flow in the streams. The timing of construction will help to avoid impacts on nesting special-status birds within and adjacent to the limits of disturbance. Any potentially suitable vegetation within the restoration footprint would be removed prior to bird nesting season in order to avoid the habitat becoming occupied by nesting birds prior to construction. If construction occurs during the nesting season, nest abandonment could result in egg failure and/or the death of nestlings as well as loss of energy related to nest building, feeding, and territorial defense. Physiological stressors could lead to energetic losses and increased stressors to the body, potentially resulting in lowered reproductive performance, increased susceptibility to diseases and predation, inability to successfully forage and feed young, and death of both adults and nestlings. All life stages could be exposed to these stressors during the nesting period. Outside of the nesting season, construction would remove or modify suitable or potentially suitable habitat. This would result in a temporal loss of habitat for the species during construction and until the replanted vegetation becomes mature and dense enough to provide the requisite functions for each special-status riparian bird species.

**Special-status Riparian Bat Species**

The Tributaries Restoration Project and Mitigation Reserve Program Phase I has the potential to directly affect foliage and/or crevice dwelling bat species, including western yellow bat and pocketed free-tailed bat individuals and roosting habitat. Although construction scheduling is not currently known, it is expected to occur in the fall and winter months, when bats may be hibernating. Removal or trimming of suitable roost trees for foliage and/or crevice dwelling bats could directly harm roosting or hibernating bats and would reduce potential roosting habitat for these species, such as western yellow bat or crevice dwelling species roosting in any trees containing snags, crevices, or peeling bark. If construction occurs during the maternity season (typically March 1–August 31 in Southern California), young, flightless bats could be particularly susceptible to harm. Physiological stressors could lead to energetic losses and increased stressors to the body, potentially resulting in lowered reproductive performance, increased susceptibility to diseases and predation, and inability to successfully forage and feed young. Depending on whether individuals are foraging or roosting within the limits of disturbance, all life stages of special-status bats associated with the maternity season could be exposed to these stressors. The temporary removal of riparian habitat along the waterway of the Santa Ana River would also reduce the amount of available foraging habitat for bats that may or may not roost in the area until the restored vegetation becomes dense and mature.

**Special-status Terrestrial Wildlife Species**

Special-status terrestrial species—including coastal whiptail, coast horned lizard, San Diego black-tailed jackrabbit, Southern California legless lizard, and western burrowing owl—may inhabit the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites and vicinity. These special-status terrestrial species would not have access to sheltering, foraging, or breeding...
opportunities in areas where vegetation is modified or removed, and would likely remain out of these areas for at least a year as restored vegetation matures.

Impacts on special-status terrestrial wildlife species could result from the following construction activities: vegetation removal, excavation and filling, grading in existing stream channels and riparian areas, and placement of boulders and large woody material in and along the restored channels. Burial or crushing of special-status terrestrial wildlife species could occur during all stages of construction, including during grading bank slopes and streambed contouring; excavation in streambed, riparian, and upland areas; or placement of substrate during creation of habitat enhancement features.

Western burrowing owl is of particular concern as this species builds subterranean nests that could be buried or crushed with individuals and/or eggs inside. Although suitable habitat is limited at the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites, western burrowing owl nests are often located within low grassland, ruderal, and barren upland habitats containing burrows or burrow surrogates (e.g., debris piles, open pipes) where staging, access, and construction activities could crush subterranean nests containing eggs or juveniles that overwinter in the nest. Accidental burial of owls during construction and habitat enhancement activities could injure or kill adults, juveniles, and eggs. Construction in these areas could also directly affect owls adjacent to the work areas.

Outside the limits of disturbance, construction could affect special-status terrestrial wildlife species within existing access roads by hitting or crushing these species. These roads would be bladed for construction vehicle traffic to a width 14 feet, and staging areas would also be bladed, as shown on Figures 3.3-4, 3.3-9, and 3.3-14. Access roads would avoid sensitive areas to the maximum extent practicable. Staging areas would be placed strategically as far away from sensitive areas as practicable, balanced with the need for efficient construction sites, and would be restored at the conclusion of construction.

Special-status Plant Species

Special-status plants—including smooth tarplant, paniculate tarplant, Santa Ana River woolly-star, Southern California black walnut, Robinson’s pepper-grass, and Brand’s star phacelia—inhabit or have the potential to occur at the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites. Impacts on special-status plant species could result from construction activities such as vegetation removal, excavation and filling, grading in existing stream channels and riparian areas, and placement of boulders and large woody material in and along the restored channels. Special-status plant species could be destroyed if they are buried or crushed by construction equipment during clearing, grading, and restoration or crushed during stream bank grading and placement of habitat structures such as large boulders and woody debris.

Outside the limits of disturbance, construction could impact special-status plant species within existing access roads by destroying or crushing these species. These roads would be cleared and graded for construction vehicle traffic to a width of 12 to 15 feet, and staging areas would also be cleared and graded, as shown on Figures 3.3-4, 3.3-9, and 3.3-14. Access roads would be avoid sensitive areas to the maximum extent practicable. Staging areas would be placed strategically as far away from sensitive areas as practicable, balanced with the need for efficient construction sites, and would be restored at the conclusion of construction.
**Operational and Maintenance Impacts**

**Aquatic Species**

Direct impacts on the aquatic species present or potentially present could occur during post-construction maintenance activities when crews are performing invasive removal, weeding, planting, or other restoration monitoring and maintenance activities along the shores of water bodies. Impacts could include temporarily inhibiting or disturbing aquatic species and disturbing their refuge habitat. Minimal disturbance or impacts could also occur when overall site maintenance activities are performed, which are expected in perpetuity during implementation of a long-term management plan.

**Semi-aquatic Species**

Direct impacts on the semi-aquatic species present or potentially present could occur during post-construction maintenance activities when crews are performing invasive removal, weeding, planting, or other restoration monitoring and maintenance activities. Impacts could include temporarily inhibiting, or disturbing, foraging and breeding behavior of semi-aquatic species and disturbing their refuge habitat. Minimal disturbance or impacts could also occur when overall site maintenance activities are performed, which are expected in perpetuity during implementation of a long-term management plan, such as homeless encampment removal, signage and fencing maintenance, unauthorized trail removal, targeted invasive weed removal, or other long-term maintenance work.

Following construction, patrol vehicles and/or equipment could affect semi-aquatic species within existing access roads during maintenance activities, hitting, crushing, or destroying these species. It is expected that access roads would not be bladed during operations and would be allowed to grow over with vegetation; impassable locations would be spot-repaired and roads would avoid sensitive areas to the maximum extent practicable. Operations and maintenance work are not expected to require large-scale equipment deployment and would be staged in existing roadways.

**Special-status Riparian Bird Species**

Direct impacts on the special-status riparian bird species present or potentially present could occur during post-construction maintenance activities when crews are performing invasive removal, weeding, planting, or other restoration monitoring and maintenance activities. Impacts could include temporarily inhibiting, or disturbing, foraging and breeding behavior of special-status riparian bird species and disturbing their refuge habitat.

Following construction, patrol vehicles and/or equipment could affect special-status riparian bird species within existing access roads during maintenance activities, hitting, crushing, or destroying these species. It is expected that access roads would not be bladed during operations and would be allowed to grow over with vegetation; impassable locations would be spot-repaired and roads would avoid sensitive areas to the maximum extent practicable. Operations and maintenance work are not expected to require large-scale equipment deployment and would be staged in existing roadways.

**Special-status Riparian Bat Species**

Direct impacts on the special-status riparian bat species present or potentially present could occur during post-construction maintenance activities when crews are performing invasive removal, weeding, planting, or other restoration monitoring and maintenance activities. Impacts could
include temporarily inhibiting, or disturbing, foraging and breeding behavior of special-status riparian bat species and disturbing their refuge habitat.

Following construction, patrol vehicles and/or equipment could affect special-status bat species within existing access roads during maintenance activities, hitting, crushing, or destroying these species. It is expected that access roads would not be bladed during operations and would be allowed to grow over with vegetation; impassable locations would be spot-repaired and roads would avoid sensitive areas to the maximum extent practicable. Operations and maintenance work are not expected to require large-scale equipment deployment and would be staged in existing roadways.

**Special-status Terrestrial Wildlife Species**

Direct impacts on the terrestrial wildlife species present or potentially present could occur during post-construction maintenance activities when crews are performing invasive removal, weeding, planting, or other restoration monitoring and maintenance activities. Impacts could include temporarily inhibiting, or disturbing, foraging and breeding behavior of wildlife species and disturbing their refuge habitat.

Following construction, patrol vehicles and/or equipment could affect terrestrial wildlife species within existing access roads during maintenance activities, hitting, crushing, or destroying these species. It is expected that access roads would not be bladed during operations and would be allowed to grow over with vegetation; impassable locations would be spot-repaired and roads would avoid sensitive areas to the maximum extent practicable. Operations and maintenance work are not expected to require large-scale equipment deployment and would be staged in existing roadways.

**Special-status Plant Species**

Direct operational impacts on special-status plants are expected to be negligible or nonexistent, as the species would be identifiable by regular monitoring surveys and avoidance measures would be in place to reduce impacts on the species as part of long-term maintenance and monitoring. Impacts would likely be more intense in the early phases of restoration when vegetation is young and sparse and rigorous and frequent weed control is required; as native vegetation becomes denser and weeds become more controlled and limited, these impacts are anticipated to lessen over time as the restoration plantings mature.

Minimal disturbance or impacts could also occur when overall site maintenance activities are performed, which are expected in perpetuity during implementation of a long-term management plan, such as homeless encampment removal, signage and fencing maintenance, unauthorized trail removal, targeted invasive weed removal, or other long-term maintenance work.

Following construction, patrol vehicles and/or equipment could affect special-status species within existing access roads during maintenance activities, hitting, crushing, or destroying these species. It is expected that access roads would not be bladed during operations and would be allowed to grow over with vegetation; impassable locations would be spot-repaired and roads would avoid sensitive areas to the maximum extent practicable. Operations and maintenance work are not expected to require large-scale equipment deployment and would be staged in existing roadways.

Post-construction restoration monitoring and maintenance is expected to occur regularly over a period of 5 to 10 years to ensure the project achieves the objectives of performance success.
Based on the above construction and operational impact analysis, direct impacts including physical injury, physiological impairment, or mortality of special-status plant or wildlife species as a result of construction and operational activities would be significant within the areas identified for channel excavation and floodplain grading.

Implementation of mitigation measures BIO-1 through BIO-17 would reduce these impacts to a less-than-significant level.

**Significance Determination Prior to Mitigation:** Potentially significant.

**Mitigation Measures**

**Mitigation Measure BIO-1: Consult with Agencies Regarding ESA and CESA Permitting**

The ESA provides regulatory protection for species listed as “threatened” or “endangered.” The Tributaries Restoration Project and Mitigation Reserve Program Phase I shall obtain federal and state incidental take authorization as necessary for all federally listed species identified as potentially being adversely affected from the construction, operations, and/or maintenance of the Tributaries Restoration Project and Mitigation Reserve Program Phase I. The project shall require a permit from USACE in order to construct within waters of the United States. As required by Section 7 of the ESA, USACE analyzes the potential direct, indirect, and cumulative effects associated with the proposed project and makes determinations on each federally protected species that may be affected. We anticipate that USACE will likely initiate consultation with USFWS in order to receive a Biological Opinion and incidental take coverage for least Bell’s vireo, Santa Ana sucker, and potentially Santa Ana River woolly-star, as adverse impacts on these species may be unavoidable. Therefore, formal consultation shall occur between the federal action agency, USACE, and USFWS in order to ensure the Tributaries Restoration Project and Mitigation Reserve Program Phase I is not likely to jeopardize the continued existence of any threatened or endangered species or result in the adverse modification of critical habitat. USFWS will issue a Biological Opinion, including terms and conditions, which shall then be included as terms and conditions of the USACE permit issued to the Applicant, Valley District. These terms and conditions may include, for example, ensuring that an authorized and approved biological monitor is in place during construction and that any incidental take in excess of the authorized amount stated in the Biological Opinion is reported immediately to USFWS. The mitigation measures included in this EIR are intended to avoid and minimize harm to the species and will be included in the application to USACE and in the Biological Assessment submitted to USFWS for consultation.

In order to receive incidental take coverage for the state-listed species for least Bell’s vireo and potentially Santa Ana River woolly-star, it is anticipated that the Biological Opinion will provide the description and mitigation measures required for CDFW to issue a consistency determination, which states that the federal incidental take authorization is “consistent” with CESA under CFGC Section 2080.1. Expected terms and conditions may address take avoidance, habitat restoration and conservation, construction monitoring, and project operations for federally listed species identified or expected to occur within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits.
Mitigation Measure BIO-2: Conduct Pre-Construction Biological Clearance Surveys to Avoid and Minimize Direct Impacts on Special-status Terrestrial Species From Construction Activities

To avoid or minimize direct impacts on special-status species from construction activities, a qualified biologist approved by USFWS and/or CDFW shall conduct preconstruction clearance surveys at all Tributaries Restoration Project and Mitigation Reserve Program Phase I sites for special-status species prior to any ground-disturbing and/or dewatering activities. During these surveys, the biologist shall inspect the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites prior to earthwork or other disturbance for any special-status wildlife species listed in Table 3.3-3 and prepare a list of species observed and record their activity before and during construction. Prior to construction each day, biological construction monitors will sweep survey at a reconnaissance level all areas scheduled for construction to confirm that special-status species are not present. Any species found shall be captured and relocated to an approved location in consultation with USFWS and/or CDFW by a biologist having appropriate permits, if required, and in compliance with regulatory permits and authorizations issued.

Mitigation Measure BIO-3: Conduct Preconstruction Nesting Bird Surveys Within 300 Feet of the Limits of Disturbance

Vegetation clearing within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance shall be completed prior to bird nesting season to the maximum extent possible. Impacts on nesting birds will be avoided through the implementation of preconstruction surveys, ongoing monitoring, and, if necessary, establishment of minimization measures. Specific avoidance and minimization measures for nesting birds methods may include specific procedures as recommended by the CDFW and detailed below.

BIO-3.1: Designated Biologist and Survey Protocols – Valley District shall designate a biologist experienced in: identifying local and migratory bird species; conducting bird surveys using appropriate survey methodology (e.g., Ralph et al. 1993 and USFWS and/or CDFW-accepted species-specific survey protocols, available here: https://www.wildlife.ca.gov/conservation/survey-protocols); nesting surveying techniques, recognizing breeding and nesting behaviors, locating nests and breeding territories, and identifying nesting stages and nest success (e.g., Martin and Geupel 1993); determining/establishing appropriate avoidance and minimization measures; and monitoring the efficacy of implemented avoidance and minimization measures.

BIO-3.2: Pre-construction Surveys – Surveys shall be conducted by the designated biologist at the appropriate time of day/night, during appropriate weather conditions, no more than 3 days prior to the initiation of project activities. Surveys shall encompass all suitable areas including trees, shrubs, bare ground, burrows, cavities, and structures. Survey duration shall take into consideration the size of the property, density and complexity of the habitat, number of survey participants, and survey techniques employed; and shall be sufficient to ensure the data collected are complete and accurate. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior (e.g., copulation, carrying of food or nest materials, nest building, removal of fecal sacks, flushing suddenly from atypically close range, agitation, aggressive interactions, feigning injury or distraction displays, or other behaviors).
If a nest is suspected, but not confirmed, the designated biologist shall establish a
disturbance-free buffer until additional surveys can be completed, or until the location
can be inferred based on observations. Surveyors shall not risk failure of the nest to
determine the exact location or status and will make every effort to limit the nest to
potential predation as a result of the survey/monitoring efforts (e.g., limit number of
surveyors, limit time spent at/near the nest, scan the site for potential nest predators
before approaching, immediately depart nest area if indicators of stress or agitation are
displayed).

If a nest is observed, but thought to be inactive, the designated biologist shall monitor
the nest for 1 hour (4 hours for raptors during the non-breeding season) prior to
approaching the nest to determine status. The designated biologist shall use their best
professional judgment regarding the monitoring period and whether approaching the
nest is appropriate. Results of pre-construction surveys shall be provided to CDFW.

**BIO-3.3: Establishment of Buffers** – When an active nest is confirmed, the designated
biologist shall immediately establish a conservative buffer surrounding the nest based
on their best professional judgment and experience. The buffer shall be delineated to
ensure that its location is known by all persons working within the vicinity, but shall not
be marked in such a manner that it attracts predators. Once the buffer is established, the
designated biologist shall document baseline behavior, stage of reproduction, and
existing site conditions, including vertical and horizontal distances from proposed work
areas, visual or acoustic barriers, and existing level of disturbance. Following
documentation of baseline conditions, the designated biologist may choose to make
adjustments to the buffer based on site characteristics, stage of reproduction, and types
of project activities proposed at/near that location. The designated biologist shall
monitor the nest at the onset of project activities and at the onset of any changes in
project activities (e.g., increase in number or type of equipment, change in equipment
usage) to determine the efficacy of the buffer. If the designated biologist determines that
project activities may be causing an adverse reaction, the designated biologist shall
adjust the buffer accordingly.

**BIO-3.4: Deterrents** – Valley District, under the direction of the designated biologist,
may also take steps to discourage nesting on the project site, including moving
equipment and materials daily, covering material with tarps or fabric, and securing all
open pipes and construction materials. The designated biologist shall ensure that none
of the materials used pose an entanglement risk to birds or other species.

**BIO 3.5: Reporting** – The designated biologist shall be responsible for providing
summary reports, where relevant, to CDFW no less than once weekly regarding the
nesting species identified on site, discovery of any of new nests, the status/outcome of
any previously identified nest, buffer distances established for each nest, and any
adjustments made to established buffers. If the project results in the abandonment of, or
damage to, a nest, CDFW shall be notified within 24 hours.
Mitigation Measure BIO-4: Conduct Pre-construction Surveys for Coastal California Gnatcatcher

A qualified biologist shall conduct preconstruction surveys for coastal California gnatcatcher no more than 7 days prior to the start of ground-disturbing activities if work would occur between February 15 and August 31. Surveys for coastal California gnatcatcher shall be conducted in suitable habitat within 500 feet of the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance. If a breeding territory or nest is confirmed, USFWS shall be notified and, in coordination with USFWS, an exclusionary buffer shall be established around the nest. Construction activities in occupied coastal California gnatcatcher habitat shall be by a USFWS-approved qualified biologist at a frequency specified by USFWS. Unless otherwise authorized by USFWS, no proposed activities shall occur within the Tributaries Restoration Project and Mitigation Reserve Program Phase I established buffer until it is determined by the qualified biologist that the young have left the nest.

Mitigation Measure BIO-5: Conduct Pre-construction Surveys for Least Bell’s Vireo Within 500 Feet of the Limits of Disturbance

A qualified biologist shall conduct preconstruction surveys for least Bell’s vireo no more than 7 days prior to the start of ground-disturbing activities if work is to occur between March 15 and August 31. Surveys for least Bell’s vireo shall be conducted in suitable habitat within 500 feet of the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance. If a breeding territory or nest is confirmed, USFWS shall be notified and, in coordination with USFWS, an exclusionary buffer shall be established around the nest. Construction activities in occupied least Bell’s vireo habitat shall be monitored by a USFWS-approved qualified biologist at a frequency specified by USFWS. Unless otherwise authorized by USFWS, no proposed activities shall occur within the Tributaries Restoration Project and Mitigation Reserve Program Phase I established buffer until it is determined by the qualified biologist that the young have left the nest.

Mitigation Measure BIO-6: Conduct Protocol Pre-construction Western Burrowing Owl Surveys Within 500 Feet of the Limits of Disturbance

Vegetation clearing within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance shall be completed during the non-nesting season to the extent feasible. If ground-disturbing activities or removal of any trees, shrubs, or any other suitable nesting or foraging habitat are scheduled within the western burrowing owl nesting season (February 1 to August 31), a protocol preconstruction clearance survey for western burrowing owl shall be conducted in accordance with CDFW guidelines. If potential western burrowing owl burrows are found during non-nesting season, the occupiable areas of those burrows will be examined, with a burrow scope if needed, and collapsed if not occupied. If active burrows are found during nesting season, an avoidance buffer shall be established through consultation with CDFW and in accordance with CDFW guidelines and remain around the occupied nest(s) until all young have fledged and the nest is confirmed by the qualified biologist to be no longer active. If active burrows are found outside of the nesting season, then CDFW will be consulted for avoidance and minimization methods. Specific avoidance and minimization measures for burrowing owl may include the following procedures as recommended by CDFW and detailed below.
**BIO 6.1: Habitat Assessments** – Burrowing owl habitat assessments, surveys, impact assessments, and associated reports shall be completed. Methodology shall follow the recommendations and guidelines provided within the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

Prior to the initiation of project activities, a burrowing owl habitat assessment shall be conducted by a biologist knowledgeable of burrowing owl habitat, ecology, and field identification of the species and burrowing owl sign and in accordance with the *Staff Report on Burrowing Owl Mitigation*. The assessment shall consist of walking all areas subject to project activities and adjoining areas within 150 meters (approximately 500 feet). If no suitable habitat is found on site (i.e., if the site is completely covered in chaparral habitat, cement, or asphalt), no additional surveys are necessary. A report summarizing the results of the habitat assessment shall be submitted to CDFW.

**BIO 6.2: Surveys** – If suitable habitat is found on site within areas subject to project activities, burrowing owl surveys shall be conducted by a qualified biologist in accordance with the *Staff Report on Burrowing Owl Mitigation*. As such, the Designated Biologist(s) shall conduct four survey visits: (1) at least one site visit between February 15 and April 15, and (2) a minimum of three survey visits, at least 3 weeks apart between April 15 and July 15, with at least one visit after June 15.

**BIO 6.3: CDFW Coordination** – If breeding season surveys confirm occupied burrowing owl habitat in or adjoining areas subject to project activities, Valley District shall contact CDFW and conduct an impact assessment, in accordance with the *Staff Report on Burrowing Owl Mitigation*, prior to commencing project activities, to assist in the development of avoidance, minimization, and mitigation measures.

**Mitigation Measure BIO-7A: Conduct Preconstruction Surveys and Minimization Measures Within the Limits of Disturbance for Sensitive Mammal Species**

No greater than 48 hours prior to initiation of ground disturbance, including vegetation-clearing activities, within suitable habitat, the limits of disturbance shall be surveyed for sensitive mammal species, including northwestern San Diego pocket mouse, SKR, San Diego black-tailed jackrabbit, San Diego desert woodrat, and Los Angeles pocket mouse.

If sensitive mammal species are observed within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance and do not self-relocate out of the area by the start of scheduled construction, a qualified biologist may opt to relocate the species to a suitable area out of the construction impact zone. Any capture and relocation shall occur in coordination with USFWS and/or CDFW and be implemented by a by a biologist having appropriate permits, if required, and in compliance with regulatory permits and authorizations issued.

**Mitigation Measure BIO-7B: Conduct Preconstruction Surveys Within the Limits of Disturbance for Sensitive Bat Species**

To mitigate for potential construction-related impacts on special-status bats and maternity roosts during construction activities, the following measures shall be implemented prior to the commencement of construction activities at all Tributaries Restoration Project and Mitigation Reserve Program Phase I sites. A combination, as required by specific site conditions, of habitat
suitability assessments, acoustic surveys of habitat around construction sites, nighttime surveys, maternity colony assessments, and exit counts shall be used to survey the area that may be directly or indirectly affected by the Tributaries Restoration Project and Mitigation Reserve Program Phase I. Avoidance and minimization measures for bats may include specific procedures as recommended by CDFW and detailed below.

**BIO-7B.1: Roosting Habitat Suitability Assessment** – Prior to commencement of project activities, a CDFW-approved bat biologist shall conduct a bat roosting habitat suitability assessment of the structures and trees that may be removed, altered, or indirectly affected by the proposed project activities. As bats may utilize dense tree canopies, snags, rock crevices, or built structures over creeks/water, these habitat types shall be surveyed. Foraging areas and specific flight routes to those foraging areas shall be documented, as well.

If bat roosting habitat is detected during the pre-construction surveys, Valley District will implement a Bat Protection Plan. All contractors, subcontractors, and employees shall also comply with these measures and it shall be the responsibility of the Permittee to ensure compliance. Valley District shall submit to CDFW for review and approval a Bat Avoidance, Monitoring, and Protection Plan (BAMPP). The BAMPP shall include project-specific avoidance and minimization measures to ensure that impacts on bats are avoided or minimized. The BAMPP shall be created and be implemented by the CDFW-approved bat biologist. The BAMPP shall include: monitoring protocols, survey timing and duration, procedures and frequency of direct reporting to CDFW, and project-specific avoidance and minimization measures that consider, but are not necessarily limited to, project phasing and timing; installation and monitoring of exclusionary materials, where and when appropriate; monitoring of project-related noise, vibration, and lighting; and installation of buffers.

**BIO-7B.2: Nighttime Surveys** – Any locations identified as suitable bat roosting habitat by the CDFW-approved bat biologist shall be subject to additional nighttime surveys during the summer months (i.e., June–August) to determine the numbers and bat species using the roost(s). The information collected during these additional surveys shall be used by the CDFW-approved bat biologist to develop species-specific measures to minimize impacts on roosting bats. The surveys shall be conducted by the CDFW-approved bat biologist using an appropriate combination of structure inspection, sampling, exit counts, and acoustic surveys. If bats are found using any structures or trees within the project area, the biologist shall identify the bats to the species level and evaluate the colony to determine its size and significance.

The bat survey shall include: (1) the exact location of all roosting sites (location shall be adequately described and drawn on a map); (2) the number of bats present at the time of visit (count or estimate); (3) the names of each species of bat present (including how the species was identified); (4) the location, amount, and distribution of all bat guano described and pinpointed on a map; and (5) the type of roost, i.e., a night roost (resting at night while out feeding) versus a day roost (resting during the day), clearly stated. The results of the pre-construction bat surveys shall be submitted to CDFW for review.

**BIO-7B.3: Maternity Colonies Avoidance and Minimization** – If the presence of a maternity colony is confirmed within a structure (e.g., bridge, culvert) during the
maternity season survey and activities involving combustion engines and/or night lighting is deemed necessary during the recognized bat maternity season (April 1 through August 31), avoidance and minimization measures including the designation of buffers shall be developed and submitted to CDFW for review.

**BIO-7B.4 Establishment of Buffer** – If any previously undiscovered roosting bats are discovered during project activities, all work shall stop on, under, around, or within an appropriate buffer as determined by the CDFW-approved bat biologist.

To avoid disturbance of maternity-roosting bats during project-related activities, work activities within a predetermined buffer distance of the maternity roost sites shall avoid the recognized bat maternity season (April 1 through August 31) unless concurrence otherwise has been received from CDFW. The buffer distance shall be determined by a CDFW-approved bat biologist and shall be based upon which bat species are found to compose the maternity colony, because different bat species are known to have different tolerance levels for certain construction activities. Project activities shall not occur at structures housing a maternity colony of bats during the recognized bat breeding season unless concurrence is received from CDFW.

**Mitigation Measure BIO-8: Conduct Preconstruction Surveys Within the Limits of Disturbance for Sensitive Terrestrial Reptile Species**

Not greater than 48 hours prior to initiation of ground disturbance, the work area shall be surveyed for sensitive terrestrial reptile species, including southwestern pond turtle, California legless lizard, California glossy snake, coastal whiptail, red-diamond rattlesnake, coastal horned lizard, and coast patch-nosed snake. If a sensitive reptile species is observed within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance, those reptiles shall be captured and relocated to an approved location in consultation with USFWS and/or CDFW by a biologist having appropriate permits, if required, and in compliance with regulatory permits and authorizations issued.

**Mitigation Measure BIO-9: Conduct Preconstruction Surveys Within the Limits of Disturbance for Special-status Plant Species**

During the appropriate blooming period up to 1 year prior to initiation of ground disturbance, the work area shall be surveyed to confirm the presence/absence of special-status plant species, including: Santa Ana woolly-star, smooth tarplant, Parry’s spineflower, snake cholla, paniculate tarplant, many-stemmed dudleya, Southern California black walnut, Coulter’s goldfield, Robinson’s pepper-grass, chaparral ragwort, San Bernardino aster, as well as WR CMSHP narrow endemic species San Diego ambrosia, Brand’s phacelia, and San Miguel savory. Surveys shall be conducted in accordance with CNPS and CDFW rare plant survey guidelines and shall be conducted during the flowering period when each species is most readily identifiable, if necessary. A botanist shall determine the blooming period for each species and verify blooming during the growing season by visiting a reference site as necessary to observe if the target species is flowering or otherwise identifiable. A species-specific survey may be required for each special-status plant depending upon the blooming period.

Any special-status plant populations shall be mapped. If the presence of any special-status plant species is confirmed, a copy of the survey results shall be forwarded to USFWS and CDFW. If individuals of a sensitive plant species are observed within the Tributaries Restoration Project...
and Mitigation Reserve Program Phase I limits of disturbance, then prior to ground disturbance, the individuals shall be flagged and/or mapped for avoidance. If impacts on non-listed species are unavoidable, minimization measures shall be addressed within a 5-year onsite restoration mitigation and monitoring program developed and implemented for the Tributaries Restoration Project and Mitigation Reserve Program Phase I. If impacts on listed plant species are unavoidable, USFWS and/or CDFW shall be consulted prior to proceeding with the project. The following restoration success criteria shall be required.

1. Establishment of restoration site(s) within the Tributaries Restoration Project and Mitigation Reserve Program Phase I, where plant restoration shall occur. The restoration site shall include a restoration mitigation and monitoring program detailing: (1) a clear description of the restoration activities to be completed, including: (a) any recontouring, (b) methods for de-compacting soils, (c) a planting/seeding plan and plant/seed palette, and (d) an irrigation plan; (2) a comprehensive monitoring and maintenance plan, including: (a) a detailed monitoring and maintenance schedule, (b) a nonnative plant removal plan, including procedures to ensure that nonnative plants are not introduced or allowed to sustain within the restoration areas, (c) success standards (e.g., survival, native plant establishment, diversity, nonnative cover), (d) locations of permanent photo stations, and (e) adaptive management measures; (3) graphics and accompanying geographic information system (GIS) shapefiles of the restoration areas; and (4) a contingency plan (e.g., purchase of additional mitigation credits, mitigation at a different offsite location) in the event that the restoration areas do not meet success criteria.

2. Seed collection/salvage, if feasible.

3. A qualified botanist shall identify and submit for approval an appropriate plant palette and restoration methodology compatible with the specific affected special-status species. Mitigation sites could include existing habitats in the Tributaries Restoration Project and Mitigation Reserve Program Phase I of the same vegetation community type, depending on site conditions and locations of special-status plants found.

4. Topsoil salvage and reapplication.

**Mitigation Measure BIO-10: Designate an Qualified Biologist(s) to Ensure Compliance with Avoidance and Minimization Measures**

A USFWS-approved qualified biologist(s) with knowledge of least Bell’s vireo, coastal California gnatcatcher, Santa Ana sucker, and their habitats shall function as a biological monitor. Prior to initiating Tributaries Restoration Project and Mitigation Reserve Program Phase I activities, the name(s) and resumes of all prospective biological monitors shall be submitted to the appropriate USFWS and CDFW offices. The biological monitor shall ensure compliance with the Tributaries Restoration Project and Mitigation Reserve Program Phase I avoidance and minimization measures. The qualified biologist shall be present on site during construction within and adjacent to occupied least Bell’s vireo habitat to ensure that avoidance and minimization measures are in place according to specifications, and shall monitor construction within the vicinity of the least Bell’s vireo and coastal California gnatcatcher territories at a frequency necessary to ensure that avoidance and minimization measures are properly followed. The qualified biologist shall report any non-compliance within 24 hours to USFWS.
The qualified biologist shall be familiar with other special-status species known, or having the potential to occur, at the restoration sites and shall be present during construction activities involving initial ground disturbance, dewatering, and vegetation removal. If a special-status species is observed within the limits of disturbance, the biologist shall have authority to stop work in order to prevent harm to the individual. The individual animal shall be allowed to leave the site of its own volition; however, should the biologist determine this is not possible, the individual shall be relocated outside of the Tributaries Restoration Project and Mitigation Reserve Program Phase I by the qualified biologist.

**Mitigation Measure BIO-11: Conduct Preconstruction Surveys for Special-Status Semi-Aquatic Species**

Prior to construction activity, a qualified biologist familiar with the special-status species, including southwestern pond turtle, two-striped gartersnake, and south coast gartersnake, and approved by USFWS and/or CDFW, shall conduct a preliminary survey of the affected water body and surrounding suitable habitat, noting habitat present and any special-status semi-aquatic species. If special-status species are present, they shall be captured and relocated by a qualified biologist. A Capture and Relocation Plan shall be prepared, which shall include requirements for qualified biologists, methods for special-status semi-aquatic species capture, requirements for any information to be collected for captured special-status semi-aquatic species, procedures for temporary containment and transport of captured special-status semi-aquatic species, details for approved release locations for special-status semi-aquatic species, and periodic and final reporting requirements for all relocated special-status semi-aquatic species.

**Mitigation Measure BIO-12: Conduct Preconstruction Surveys Within the Limits of Disturbance for Special-Status Aquatic Species**

Prior to construction activity, a USFWS-approved Authorized Biologist (i.e., a biologist approved by USFWS and qualified to survey for and evaluate impacts on specific listed special-status species) familiar with the special-status species, including Santa Ana sucker and arroyo chub, and approved by USFWS and CDFW, shall conduct a preliminary survey of the affected water body and surrounding suitable habitat, noting habitat present and any special-status fishes. If special-status species are present, a capture and relocation plan shall be implemented to safely relocate these species (see mitigation measure BIO-13). This plan shall include requirements for qualified biologists, methods for special-status aquatic species capture, requirements for any information to be collected for captured special-status aquatic species, procedures for temporary containment and transport of captured special-status aquatic species, details for approved release locations for special-status aquatic species, and periodic and final reporting requirements for all relocated special-status aquatic species.

**Mitigation Measure BIO-13: Develop a Tributaries Restoration Project and Mitigation Reserve Program Phase I-Specific Dewatering, Diversion, and Aquatic/Semi-aquatic Species Rescue Plan (Dewatering Plan)**

Prior to dewatering activities, a dewatering plan including site-specific measures shall be developed and submitted to USFWS and CDFW for approval. Dewatering structures may include the use of sand bag, Port-a-dams, water bladder dams, K-rails, or driven sheet metal coffer dams. USFWS and CDFW shall review the proposed water diversion method, to approve the plan or
provide the requirements for that approval. Valley District shall not commence dewatering of a stream/diversion of water without explicit approval from CDFW. A qualified biologist, familiar with the special-status species, and approved by USFWS and CDFW, shall be present during implementation of the dewatering plan. The plan shall include the following standard measures for the avoidance and minimization of impacts on special-status species resulting from dewatering activities.

- Dewater aquatic habitat that shall be disturbed or removed 15 days prior to the initiation of construction activities to allow time for construction areas to dry and management of any deficiencies in the dewatering effort. If complete dewatering is not possible, potential snake prey (i.e., fish and tadpoles) shall be removed so that snakes and other wildlife are not attracted to the construction area.

- Prior to dewatering, blocking nets or other fish barriers shall be installed at the upstream and downstream extents of the reach to be dewatered to prevent aquatic species from entering.

- All aquatic species shall be removed by a team of qualified biologists as the stream is dewatered. Native species shall be relocated to nearby suitable habitat downstream of the project sites. Nonnative species shall be sacrificed.

- Pumps used for flow diversion shall be appropriately screened to prevent entrainment of all life stages of aquatic and semi-aquatic species.

- Diversion outflow structures shall be appropriately placed and silt screens, settling ponds, and other equipment shall be used to minimize erosion, sediment deposition, and increased turbidity at the site of outflow.

- Draw-down rates shall be implemented to maintain water quality, reduce crowding of fish, and prevent stranding.

- Water quality shall be regularly monitored during dewatering to ensure conditions are sufficient for aquatic life.

- Other measures shall be implemented to ensure minimal mortality associated with relocation or holding of captured individuals.

The dewatering plan shall also specify the following:

- The removal methods shall be implemented so as to minimize potential injury or mortality to native fish. All captured native fish shall be placed in ice chests filled with Santa Ana River water. The ice chest shall be kept shaded and aerated at all times. The water temperature in the ice chests and condition of captured native fish shall be closely monitored. Any native fish removed from the site shall be relocated in suitable habitat downstream of the Tributaries Restoration Project and Mitigation Reserve Program Phase I. When handling native fish, the hands of all participants shall be free of sunscreen, lotion, and insect repellent. The qualified biologist shall submit a report to USFWS and CDFW identifying the number of any native fish that were relocated and other measures that were taken to minimize impacts on native fish. The report shall be submitted to USFWS and CDFW no more than 60 days following capture and relocation activities.

- If a southwestern pond turtle nest is found, a 100-foot no-disturbance buffer zone shall be established around the nest using flagging, fencing, and/or signage as appropriate. No
construction activities shall occur within the Tributaries Restoration Project and Mitigation Reserve Program Phase I established buffer until a qualified biologist has determined that the nest is not in use. If an active southwestern pond turtle nest is found, the turtle nest shall be relocated by a qualified biologist, in consultation with CDFW, and in accordance with the aquatic species rescue plan for the project. If a southwestern pond turtle is observed at any time before or during construction, it shall be left alone to move out of the area on its own or may be relocated by a qualified biologist to a suitable aquatic habitat outside of the Tributaries Restoration Project and Mitigation Reserve Program Phase I; translocation of turtles can only be performed in consultation with CDFW, and by an individual possessing a valid scientific collecting permit.

Mitigation Measure BIO-14: Develop a Nesting Bird Management Plan

Construction is likely to occur during nesting bird season. Therefore, the Tributaries Restoration Project and Mitigation Reserve Program Phase I shall develop a nesting bird management plan in consultation with USFWS and CDFW. Approval by both USFWS and CDFW are required before the plan can be implemented. The nesting bird management plan shall include measures, some of which may have been detailed above, and an adaptive management program to avoid and minimize impacts on special-status and MBTA- or CFGC-protected bird species during nesting periods. The qualified biologist shall notify USFWS and CDFW of all Tributaries Restoration Project and Mitigation Reserve Program Phase I-related bird injuries or mortalities within 48 hours of discovery and shall follow the agencies' recommended actions, if any. This plan shall include a description of all federal, state, and local nesting bird policies, biologist qualifications, roles and responsibilities, definitions of active and inactive nest, survey requirements, active nest avoidance, nest buffer reductions, guidelines for working within nest buffers, notification and documentation, inactive nest management, and periodic and final reporting requirements.

Mitigation Measure BIO-15: Delineate Limits or Require Use of GPS-based exclusionary Technology on Construction Equipment to Prevent Encroachment of Construction Activities into Environmentally Sensitive Areas

Before the start of construction activities, including establishment of staging areas, vegetation clearing, and/or grading activities, environmentally sensitive areas shall be mapped and either delineated with flagging or stakes, or the contractor shall be required to use global positioning system (GPS)-based exclusionary technology, along the limits of disturbance at each tributary restoration site to prevent access into non-Tributaries Restoration Project and Mitigation Reserve Program Phase I areas. The limits of work shall be inspected during construction by a qualified biological monitor at a frequency necessary to ensure that protective measures are intact and construction activities are not encroaching into environmentally sensitive areas. Environmentally sensitive area fencing shall be inspected daily by the authorized biologist(s) or project construction personnel working under the direction of the authorized biologist(s). The authorized biologist(s) shall personally inspect the fencing no less than once per week. Environmentally sensitive area fencing shall be maintained in good working order for the duration of project activities.
Mitigation Measure BIO-16: Implement Best Management Practices

The contractor shall implement the following BMPs during construction activities to protect aquatic habitat and other sensitive natural communities that provide habitat for special-status species.

- Reduce the risk of wildfire ignition using spark arresters.
- Limit personnel activities, vehicles, equipment, and construction materials to the designated work area.
- Confine the ingress and egress of construction equipment and personnel to designated access points. Prohibit cross-country travel by vehicles and equipment.
- Leave no open trenches or holes overnight without covering, fencing, or providing escape ramps with a minimum 3:1 slope. If trenches are not covered, they shall be inspected for trapped wildlife by a qualified biologist or biological monitor. Animals found shall be captured and moved to the nearest safe location outside the construction area.
- Develop an integrated weed management plan (IWMP) to minimize the potential introduction of new weeds and to control the spread of weeds resulting from ground disturbance. The IWMP shall be developed within the first year following issuance of the ITP and shall be reviewed and approved by the Wildlife Agencies. The IWMP shall include biologist qualifications, roles, and responsibilities; definitions of noxious weeds and invasive plants; pre-construction, construction, and operations phase weed control methods; and periodic and final reporting requirements.
- Maintain adequate fire suppression capability in active construction areas including having a water tender on site in active construction areas during periods of high fire danger. A water truck or water buffalo with adequate hoses for fire control shall be maintained on the site during all habitat-clearing and construction activities during fire season.
- Implement litter control measures. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness of the area to opportunistic predators.
- Limit vehicle speeds to 15 miles per hour except on paved roads with posted speed limits. If work must take place at night, the speed limit shall be 10 miles per hour.
- Conduct new construction during the daylight hours to the extent feasible.
- Confine the construction site disturbances to the smallest practical area, considering topography, placement of facilities, location of Covered Species habitat, public health and safety, and other limiting factors, and use previously disturbed areas to the extent possible.
- Use secondary containment devices such as drip pans under stationary engines, such as compressors, generators, light plants, etc., to prevent any leakage from entering runoff or receiving waters.
- Inspect all construction equipment for leaks and regularly maintain such equipment to avoid soil contamination. Leaks shall be fixed or the equipment shall be taken out of service until the leak is fixed. Smears of petroleum products shall be cleaned prior to use.
- Clean up any hazardous waste or spills immediately and dispose at an offsite location that receives the required grade of hazardous waste.
Mitigation Measure BIO-17: Implement a Worker Environmental Awareness Training

Prior to construction, a Worker Environmental Awareness Program (WEAP) shall be implemented for work crews by a qualified biologist(s). Training materials and briefings shall include, but not be limited to, discussion of ESA and CESA, the consequences of noncompliance with Tributaries Restoration Project and Mitigation Reserve Program Phase I permitting requirements, identification and values of special-status plant and wildlife species and sensitive natural plant community habitats, fire protection measures, hazardous substance spill prevention, and containment measures.

Level of Significance Following Mitigation: Less than significant.

With implementation of mitigation measures BIO-1 through BIO-17, the Tributaries Restoration Project and Mitigation Reserve Program Phase I would avoid and minimize temporary construction impacts on habitat and species. Operations and maintenance of the project would actually increase the amount and ecological function of native riverine habitat and riparian corridor. Mitigation measure BIO-1 includes terms and conditions that offset the impacts on protected species and ensure that the project does not jeopardize a listed species or adversely modify critical habitat. Therefore, impacts of the Tributaries Restoration Project and Mitigation Reserve Program Phase I would be reduced to a less-than-significant level.

Expanded Mitigation Reserve Program Phase II

As detailed in Section 2.7, the Expanded Mitigation Reserve Program Phase II would result in the development of a combined mitigation/conservation bank and advance mitigation credit program project to secure mitigation values for future waters of the U.S. and state impacts. The Expanded Mitigation Reserve Program Phase II would also secure values for species covered by ESA and CESA and California special-status species, including but not limited to Santa Ana sucker, arroyo chub, western pond turtle, two-striped gartersnake, least Bell’s vireo, southwestern willow flycatcher, yellow-breasted chat, California gnatcatcher, western yellow-billed cuckoo, and Santa Ana River wooly-star. The Expanded Mitigation Reserve Program Phase II could provide functional life to the habitat while generating additional mitigation values for Valley District, or others, to use for future projects’ mitigation. There is no funding currently secured for these additional restoration activities. However, in order to maximize Valley District’s ability to implement restoration activities as funding does become available, this section describes potential impacts associated with these expanded opportunities in a programmatic level of detail. It is not possible at this time to specifically identify where or when potential mitigation site construction or restoration efforts (e.g., enhancement, re-establishment, and creation) may occur; as such, expanded restoration construction activities would depend on actions that may be taken in the future as funding becomes available.

Although special-status species and other sensitive biological resources in the Expanded Mitigation Reserve Program Phase II have been evaluated in Appendix B, no specific construction or restoration details are currently known for implementation of expanded opportunities included in the Expanded Mitigation Reserve Program Phase II. Therefore, impacts on species from an expanded footprint of the Expanded Mitigation Reserve Program Phase II are analyzed at a programmatic level and additional analyses of the additional restoration will be prepared at a project-specific level when specific details are available, such as credit types and location, schedule of credit restoration.
implementation, restoration methods, implementation agreements, long-term management plans, and similar activities.

Construction Impacts

Based on the special-status species present or potentially present in the Expanded Mitigation Reserve Program Phase II limits of disturbance, construction-related direct impacts will likely result. During construction, substances toxic to aquatic species such as Santa Ana sucker and arroyo chub and semi-aquatic species such as southwestern pond turtle, two-striped gartersnake, and south coast gartersnake may be released into aquatic environments from construction equipment. Toxins may include petroleum products, transmission fluid, hydraulic fluid, coolant, and degreaser. Similarly, releases of toxic construction substances could contaminate upland areas affecting sensitive terrestrial bird, mammal (including bats), reptile, amphibian, and plant individuals and populations. Exposure to toxic substances could result in lethal or non-lethal direct effects such as physiological impairment that prevents or interferes with migration, feeding, and reproduction. Exposure to sufficient quantities or for a sufficient duration could cause mortality. Construction in aquatic and terrestrial areas could also cause injury or mortality if individuals are buried or crushed by construction equipment and personnel.

Sensitive bird species, including Clark's marsh wren and coastal California gnatcatcher, may inhabit the restoration sites year-round, and least Bell's vireo, white-tailed kite, yellow-breasted chat, and yellow warbler are known, or expected, to nest within the Expanded Mitigation Reserve Program Phase II limits of disturbance. In addition, least Bell's vireo and USFWS Critical Habitat for least Bell's vireo are present. These species would not have access to nesting and foraging opportunities in or near areas where invasive vegetation is removed, where areas are created, or where restoration efforts are in the early stages of native revegetation, and would likely remain out of these areas for an indeterminate period as native vegetation fills in. If construction occurs during the nesting season, nest abandonment could result in egg failure and/or the death of nestlings as well as loss of energy related to nest building, feeding, and territorial defense. Outside of the nesting season, Expanded Mitigation Reserve Program Phase II construction would remove or alter habitat that has been occupied, and that habitat would not be suitable for nesting and foraging until the restored vegetation becomes dense and mature.

The Expanded Mitigation Reserve Program Phase II has the potential to directly affect foliage and/or crevice dwelling bat species and roosting habitat. If construction were to occur during the maternity season (typically March 1–August 31 in Southern California), then young, flightless bats could be affected. Depending on whether individuals are foraging or roosting within the limits of disturbance, all life stages of special-status bats associated with the maternity season could be affected. The removal of riparian habitat along the waterway of the Santa Ana River would also reduce the amount of available foraging habitat for bats.

Impacts on special-status plant species could result from construction activities such as invasive vegetation removal, excavation and filling, and grading in existing riparian areas. During construction, special-status plant species could be destroyed if they are buried or crushed by construction equipment during movement overland to and from restoration areas, and during clearing, grading, and restoration of upland habitat.

Outside specific Mitigation Reserve site limits of disturbance, construction could affect special-status species within existing access roads, hitting, crushing, or destroying these species. These roads would be bladed for construction vehicle traffic. Staging areas would also be bladed. Access roads
would be bladed only as needed where existing conditions become impassable and would avoid sensitive areas to the maximum extent practicable. Staging areas would be placed strategically as far away from sensitive areas as practicable, balanced with the need for efficient construction sites.

**Operational and Maintenance Impacts**

Direct impacts on each of the special-status species present or potentially present could occur during post-construction Expanded Mitigation Reserve Program Phase II restoration activities when maintenance crews are performing invasive removal, weeding, planting, or other restoration maintenance activities and when biologists are performing restoration success criteria monitoring. Impacts could include temporarily inhibiting or disturbing refuging, foraging, and breeding behavior of wildlife species. Direct operational impacts on special-status plants are expected to be negligible or nonexistent as the species would presumably be identifiable by maintenance crews and included as part of a maintenance area. The duration of restoration site maintenance is uncertain, but would be expected to occur over at least a 5-year period. Also uncertain is the phasing of credit allocation. If a large amount of credit acreage is allotted and maintained at one time, then impacts with the area and adjacent area would temporarily increase but lessen over time as the large area fills in with native vegetation. However, if credits are allocated in smaller acreages and/or dispersed randomly spatially and temporally, then impacts would be expected to be higher through a patchwork effect.

Maintenance weeding would likely occur monthly during the growing season. Impacts would likely be more intense in the early phases of restoration when vegetation is young and sparse and rigorous and frequent weed control is required; as native vegetation becomes denser and weeds become more controlled and limited, these impacts are anticipated to lessen. Once the native vegetation is fully restored, restoration maintenance is expected to be minimal within the mitigation credit areas, and much of the riparian restoration areas would likely be impenetrable for humans. Impacts could also occur when overall site maintenance activities are performed, which are expected to occur in perpetuity, such as homeless encampment removal, signage and fencing maintenance, unauthorized trail removal, or other long-term maintenance work.

Following construction, vehicles could affect special-status species within existing access roads while traveling to the specific Mitigation Reserve sites during maintenance activities, hitting, crushing, or destroying these species. Access roads would not be bladed during operations and would be allowed to grow over with vegetation, impassable locations would be spot-repaired, and roads would avoid sensitive areas to the maximum extent practicable. Operations and maintenance work would not require large-scale equipment deployment and would be staged in existing roadways.

Direct impacts including physical injury, physiological impairment, or mortality of special-status plant or wildlife species as a result of construction and operational activities in the Expanded Mitigation Reserve Program Phase II limits of disturbance, including grading, excavation, vegetation removal, placement of substrate, exposure to toxic substances, and site maintenance would be significant.

**Significance Determination Prior to Mitigation**: Potentially significant.

**Mitigation Measures**

Implementation of mitigation measures BIO-18 through BIO-24 would reduce these impacts to a less-than-significant level. Implementation of these measures is intended for the initial restoration
Mitigation Measure BIO-18: Consult with Agencies Regarding ESA and CESA Permitting Needed for Expanded Mitigation Reserve Program Phase II Restoration Activities

The Expanded Mitigation Reserve Program Phase II shall obtain federal and state incidental take authorization as necessary for all federally listed species identified as potentially being adversely affected by construction, operations, and/or maintenance within the Expanded Mitigation Reserve Program Phase II limits of disturbance. Implementation of the Upper Santa Ana Wash Plan HCP is expected to provide coverage for federally listed and/or state-listed species when it is approved. Specific Expanded Mitigation Reserve Program Phase II projects that predate the approval of the Upper Santa Ana Wash Plan HCP shall require Valley District to initiate Section 7 consultation with the appropriate federal agency for the purpose of insuring that the specific Expanded Mitigation Reserve Program Phase II projects are not likely to jeopardize the continued existence of any threatened or endangered species identified within the Expanded Mitigation Reserve Program Phase II project limits of disturbance, or result in the destruction or adverse modification of critical habitat for these species within the limits of disturbance. Expected terms and conditions may address take avoidance, habitat restoration and conservation, construction monitoring, and project operations for federally listed species identified or expected to occur within the Expanded Mitigation Reserve Program Phase II limits. Furthermore, those specific Expanded Mitigation Reserve Program Phase II projects that predate the approval of the Upper Santa Ana Wash Plan HCP and result in a take of a state-only listed species identified within the project limits shall require Valley District to apply for a take permit under Section 2081(b). Expected terms and conditions may address take avoidance, habitat restoration and conservation, construction monitoring, and project operations for state-listed species identified or expected to occur within the Expanded Mitigation Reserve Program Phase II limits.

Mitigation Measure BIO-19: Conduct Pre-Construction Biological Clearance Surveys to Avoid and Minimize Direct Impacts on Special-Status Wildlife and Plants From Construction Activities

To avoid or minimize direct impacts on special-status species from construction activities, a qualified biologist approved by USFWS and/or CDFW shall conduct appropriate preconstruction clearance surveys of the specific projects of the Expanded Mitigation Reserve Program Phase II for special-status bird species—including nesting bird surveys, coastal California gnatcatcher surveys, least Bell’s vireo surveys, western burrowing owl surveys—special-status mammal species, special-status terrestrial reptile species, special-status semi-aquatic species, and special-status native plants and narrow endemic plants prior to any ground disturbing activities.

Mitigation Measure BIO-20: Designate a Qualified Biologist

A USFWS qualified biologist with knowledge of special-status species and their habitats that may be affected by the construction activities shall function as a biological monitor. The qualified biologist shall ensure compliance with the avoidance and minimization measures of the Expanded Mitigation Reserve Program Phase II.
Mitigation Measure BIO-21: Develop a Nesting Bird Management Plan

To address potential conflicts between construction activities and the activities of nesting birds in the specific projects of the Expanded Mitigation Reserve Program Phase II, the project shall develop a nesting bird management plan in consultation with USFWS and CDFW. Approval by both USFWS and CDFW is required before the plan is implemented. This plan shall include a description of all federal, state, and local nesting bird policies, biologist qualifications, roles and responsibilities, definitions of active and inactive nest, survey requirements, active nest avoidance, nest buffer reductions, guidelines for working within nest buffers, notification and documentation, inactive nest management, and periodic and final reporting requirements.

Mitigation Measure BIO-22: Delineate Limits or Require Use of GPS-Based Exclusionary Technology on Construction Equipment to Prevent Encroachment of Construction Activities into Environmentally Sensitive Areas

Before the start of construction activities, including establishment of staging areas, vegetation clearing, and/or grading activities, environmentally sensitive areas shall be mapped and either delineated with flagging or stakes or the contractor shall be required to use GPS-based exclusionary technology along the specific projects of the Expanded Mitigation Reserve Program Phase II limits of disturbance to prevent access into non-project areas. The limits of work shall be inspected during construction by a qualified biological monitor at a frequency necessary to ensure that protective measures are intact and construction activities are not encroaching into environmentally sensitive areas. Environmentally sensitive area fencing shall be inspected daily by the authorized biologist(s) or project construction personnel working under the direction of the authorized biologist(s). The authorized biologist(s) shall personally inspect the fencing no less than once per week. Environmentally sensitive area fencing shall be maintained in good working order for the duration of project activities.

Mitigation Measure BIO-23: Implement Best Management Practices to Avoid or Minimize Construction-Related Spills or Leaks of Toxic Substances

The contractor shall implement the following BMPs during construction activities to protect aquatic habitat and other sensitive natural communities that provide habitat for special-status species:

- Reduce the risk of wildfire ignition using spark arresters.
- Limit personnel activities, vehicles, equipment, and construction materials to the designated work area.
- Confine the ingress and egress of construction equipment and personnel to designated access points. Prohibit cross-country travel by vehicles and equipment.
- Leave no open trenches or holes overnight without covering, fencing, or providing escape ramps with a minimum 3:1 slope. If trenches are not covered, they shall be inspected for trapped wildlife by a qualified biologist or biological monitor. Animals found shall be captured and moved to the nearest safe location outside the construction area.
- Develop an IWMP to minimize the potential introduction of new weeds and to control the spread of weeds resulting from ground disturbance. The IWMP shall be developed within the first year following issuance of the ITP and shall be reviewed and approved by the
Wildlife Agencies. The IWMP shall include biologist qualifications, roles, and responsibilities; definitions of noxious weeds and invasive plants; pre-construction, construction, and operations phase weed control methods; and periodic and final reporting requirements.

- Maintain adequate fire suppression capability in active construction areas, including having a water tender on site in active construction areas during periods of high fire danger. A water truck or water buffalo with adequate hoses for fire control shall be maintained on the site during all habitat-clearing and construction activities during fire season.

- Implement litter control measures. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness of the area to opportunistic predators.

- Limit vehicle speeds to 15 miles per hour except on paved roads with posted speed limits. If work must take place at night, the speed limit shall be 10 miles per hour.

- Conduct new construction during the daylight hours to the extent feasible.

- Confining the area of construction site disturbances to the smallest practical area, considering topography, placement of facilities, location of Covered Species habitat, public health and safety, and other limiting factors, and locate sites in previously disturbed areas to the extent possible.

- Use secondary containment devices such as drip pans under stationary engines, such as compressors, generators, light plants, etc. to prevent any leakage from entering runoff or receiving waters.

- Inspect all construction equipment for leaks and maintain equipment regularly to avoid soil contamination. Leaks shall be fixed or the equipment shall be taken out of service until the leak is fixed. Smears of petroleum products shall be cleaned prior to use.

- Clean up any hazardous waste or spills immediately and dispose of at an offsite location that receives the required grade of hazardous waste.

- Store spill kits capable of containing hazardous spills on site.

**Mitigation Measure BIO-24: Implement a Worker Environmental Awareness Training**

Prior to construction, a WEAP shall be implemented for work crews by a qualified biologist(s). Training materials and briefings shall include but not be limited to discussion of ESA and CESA, the consequences of noncompliance with specific Expanded Mitigation Reserve Program Phase II project permitting requirements, identification and values of special-status plant and wildlife species and sensitive natural plant community habitats, fire protection measures, hazardous substance spill prevention, and containment measures.

**Level of Significance Following Mitigation:** Less than significant

With implementation of mitigation measures BIO-18 through BIO-24, construction- and operation-related direct impacts described under Impact BIO-1.1 related to the Expanded Mitigation Reserve Program Phase II would be reduced to a less-than-significant level.
Impact BIO-1.2: Construction- and Operation-related Indirect Impacts on Special-status Species

Tributaries Restoration Project and Mitigation Reserve Program Phase I

Construction Impacts

Construction-related indirect impacts on special-status species, such as increased stress or displacement of individuals, could result from increased noise, dust, and vibration; increased suspended sediment and turbidity in aquatic habitat as a result of excavation, vegetation removal, grading, and/or dewatering and diversion activities; increased personnel and equipment presence; temporary loss of aquatic habitats resulting from dewatering and diversion; temporary loss of riparian/wetland and upland habitat at any of the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites; and edge effects of the construction work.

Impacts on special-status aquatic and semi-aquatic species related to increased sedimentation and turbidity resulting from dewatering or diversion would only occur where aquatic habitat is currently available at the Anza Creek and Lower Hole Creek project sites; no impacts related to increased sedimentation or turbidity or resulting from dewatering or diversion would occur at the Hidden Valley Creek and Old Ranch Creek project sites because these channels are dry most of the year and lack suitable aquatic habitat to support special-status aquatic species. Sediment disturbed during excavation and enhancement activities in aquatic habitats would cause increased suspended sediment concentrations and turbidity at the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites and possibly downstream in the Santa Ana River. Sediment could also be delivered to stream habitats during dewatering and diversion activities, particularly at the point of re-entry of diverted water, and can be transported downstream changing bathymetric and hydrological conditions. Erosion of soils may also occur at all Tributaries Restoration Project and Mitigation Reserve Program Phase I sites following precipitation events prior to vegetation replanting or establishment or in the event that erosion control BMPs fail or are ineffective.

High levels of turbidity could trigger avoidance and alarm behavior leading to physical displacement from preferred habitat, which in turn could lead to physiological stress and reduced feeding. This could adversely affect all life stages of special-status aquatic and semi-aquatic species, and could also reduce foraging abilities of these aquatic and semi-aquatic species; such an impact would be significant. Such increases in turbidity could temporarily impair feeding by native fishes or disrupt other behaviors; however, Santa Ana sucker and arroyo chub are adapted to turbid environments and can likely tolerate short-term, minor increases in suspended sediment and turbidity that would occur during construction. As a result, physiological impairment or mortality of native fishes and aquatic species is expected to be minimal from indirect construction impacts.

As described above in Impact BIO-1.1, temporary dewatering of aquatic habitats and diversion of streamflow would be necessary for construction of habitat enhancement and restoration areas. Temporary loss of aquatic habitats during construction could result in indirect impacts on special-status species, such as a temporary loss of essential foraging and sheltering areas for semi-aquatic species and loss of foraging areas and water sources for terrestrial and riparian species. These impacts would be limited to the duration of construction. In addition, the Santa Ana River provides an alternative water source in the vicinity of the Anza Creek and Lower Hole Creek project sites. As a result, adverse effects on special-status species are expected to be minimal.
It is possible that special-status riparian bird and bat species, and terrestrial wildlife species, may be present in or near the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites during construction activities. Noise generated from construction activities has the potential to disturb special-status riparian bird species with moderate or high potential to occur within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance, including coastal California gnatcatcher, Clark’s marsh wren, white-tailed kite, yellow breasted chat, yellow warbler, and least Bell’s vireo. Noise from construction equipment and habitat enhancement activities may disturb essential behaviors of these species, such as feeding, migration, reproduction, and sheltering. Construction-related sound and vibration may also drive individuals away from suitable adjacent habitat or cause breeding species to abandon nest sites, which would disrupt essential behaviors and lead to stress, competition, or predation.

Indirect impacts on special-status plant species are expected to be minor. Airborne sedimentation could settle on special-status plant species outside of the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance and could cause a reduction in photosynthetic output, loss of productivity, and potentially mortality. Downstream sedimentation could cause a change in vegetation communities, indirectly affecting some species. However, with the implementation of mitigation measure BIO-25, indirect impacts on special-status plant species would be less than significant.

**Operational and Maintenance Impacts**

Although indirect impacts would be temporary and generally limited to the construction period, special-status animals could be subject to impacts if they are present during post-construction restoration activities when indirect impacts may occur. Operational impacts may occur when maintenance crews are performing invasive removal, weeding, planting, or restoration activities in or near aquatic habitats and when biologists are performing field surveying of restoration success criteria. Indirect impacts could result in stress, behavioral impairment, and displacement of special-status terrestrial, riparian, aquatic, semi-aquatic, and upland species due to post-construction restoration activities such as ongoing maintenance noise, vibrations, and turbidity.

**Significance Determination Prior to Mitigation:** Potentially significant.

Indirect impacts on special-status species as a result of operations and maintenance-related noise, dust, and vibration would be significant. Effects on special-status aquatic species related to increased suspended sediment and turbidity would be short-term and minor and are considered to be less than significant. The temporary loss of aquatic habitat due to dewatering during Tributaries Restoration Project and Mitigation Reserve Program Phase I construction would be less than significant. Also, implementation of mitigation measure BIO-25 would reduce noise, dust, and vibration impacts to a less-than-significant level.

**Mitigation Measures**

**Mitigation Measure BIO-25: Implement Best Management Practices to Avoid or Minimize Impacts on Special-Status Species From Construction- and Operations-Related Impacts.**

To avoid noise impacts on special-status species from construction and operations activities, the Tributaries Restoration Project and Mitigation Reserve Program Phase I shall include measures necessary to reduce construction noise levels to comply with local noise ordinances. All heavy equipment shall install and maintain mufflers or other noise-reducing features. A biological
monitor shall monitor at the edge of the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance or areas not cleared of vegetation to ensure noise levels do not result in a disruption to nesting birds. If construction noise is negatively affecting nesting birds (e.g., a discernable negative change in behavior is observed, such as nest flushing or adults not returning to the nest with prey) then work shall cease in the immediate area until adequate controls such as noise barriers can be established to reduce noise levels. Noise barriers may include temporary noise blankets or noise shrouds. If construction noise may affect nesting birds, it may be most effective to construct noise barriers well prior to February 15, the start of the nesting season, to ensure construction delays do not occur. All noise barriers shall be constructed within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance.

To control fugitive dust, active construction and operations areas shall be watered regularly to control dust and minimize impacts on adjacent vegetation.

**Level of Significance Following Mitigation:** Less than significant.

With implementation of mitigation measure BIO-25, indirect impacts resulting from temporary construction- and operations-related increases in noise and vibration related to the Tributaries Restoration Project and Mitigation Reserve Program Phase I would be reduced to a less-than-significant level.

**Expanded Mitigation Reserve Program Phase II**

**Construction Impacts**

Construction-related indirect impacts on special-status species, such as increased stress or displacement of individuals, will be analyzed at a project-specific level when specific details of the projects of the Expanded Mitigation Reserve Program Phase II are available. Potential indirect impacts on special-status species could include increased stress or displacement of individuals resulting from increased noise, dust, and vibration; increased personnel and equipment presence; and temporary edge effects at riparian/wetland and upland habitat at all Expanded Mitigation Reserve Program Phase II sites.

**Operational and Maintenance Impacts**

Although the indirect impacts would likely be temporary and generally limited to the construction period, indirect impacts may occur during the post-construction restoration period. Depending on the level of restoration and enhancement work required, special-status animals could be subject to indirect impacts if they are present when maintenance crews are performing invasive removal, weeding, planting, or restoration activities and when biologists are performing field surveying of restoration success criteria. Indirect impacts could result in stress, behavioral impairment, and displacement of special-status terrestrial, riparian, aquatic, semi-aquatic, and upland species due to post-construction restoration activities such as ongoing maintenance noise, vibrations, and turbidity.

**Significance Determination Prior to Mitigation:** Potentially significant.

Indirect impacts on special-status species as a result of construction- and operations-related stress, behavioral impairment, and displacement of special-status terrestrial, riparian, semi-aquatic, and upland species could result. Implementation of mitigation measure BIO-25 would reduce impacts on
special-status species as a result of construction and operational stress, behavioral impairment, and displacement to a less-than-significant level.

**Mitigation Measures**

Implement mitigation measure BIO-25.

**Level of Significance Following Mitigation:** Less than significant.

With implementation of mitigation measure BIO-25, indirect impacts resulting from temporary construction and operational increases in noise and vibration associated with the Expanded Mitigation Reserve Program Phase II would be reduced to a less-than-significant level.

**Impact BIO-1.3: Indirect Impacts on Special-Status Species Resulting from Habitat Modifications**

**Tributaries Restoration Project and Mitigation Reserve Program Phase I**

**Construction Impacts**

As described in Chapter 2, the proposed tributaries restoration sites would be designed to maximize beneficial impacts while minimizing impacts on special-status species. Refer to Chapter 2 for a detailed description of proposed restoration components at each restoration site. The tributaries restoration sites are designed to restore existing channels, restore existing floodplain tributaries, enhance existing riparian and floodplain habitats, reduce the potential human disturbance, and control nonnative invasive species. Although construction may temporarily affect wetland, riparian, and upland habitats in and near the restoration sites that support habitat for special-status species, the net project benefits of restoring and improving habitat quality and extent for these species would outweigh the potential short-term construction and restoration impacts. No net loss of sensitive habitats or jurisdictional aquatic resources would occur.

Outside the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance, habitat modifications could indirectly affect special-status species within existing access roads and staging areas. These roads would be bladed for construction vehicle traffic to a width 14 feet, and staging areas would also be bladed, as shown on Figures 3.3-4, 3.3-9, and 3.3-14. Access roads would avoid sensitive areas to the maximum extent practicable. Staging areas would be placed strategically as far away from sensitive areas as practicable, balanced with the need for efficient construction sites, and would be restored at the conclusion of construction.

Indirect impacts resulting from habitat modifications are discussed below for each of the tributaries restoration sites. Following that discussion, the permanent, yet beneficial, impacts are discussed.

**Summary of Habitat Modifications by Site**

**Anza Creek/Old Ranch Creek**

The proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I at the Anza Creek project site would reconfigure the Anza Creek channel near the confluence, enhance approximately 3,045 feet of the existing channel, establish a new 0.75-acre floodplain, and reconfigure a deep pool. The reconfiguration of Anza Creek would involve narrowing the channel and a deep pool leading to increased flow rates, scouring the channel, and increasing connectivity with the Santa Ana River.
At the Old Ranch Creek project site, 7,045 feet of new and enhanced channel would be created with the installation of a perennial water source. A 100-foot-wide riparian corridor along the entire channel (50 feet on each side of the channel) would also be enhanced. Realignment of Old Ranch Creek would redirect the channel southwest and to an eventual confluence with the Santa Ana River.

Creation and enhancement of aquatic and riparian habitat in Old Ranch Creek, including installation of a perennial water source, would increase the quantity and quality of stream habitat used by special-status fishes, semi-aquatic species, and other riparian species, resulting in long-term benefits to these species. Enhancements of other existing vegetation communities would improve functions and values for other special-status wildlife.

**Lower Hole Creek**

Components of the Lower Hole Creek site would include restoration of 1,845 feet of existing riparian corridor, stabilization of channel bank, and narrowing the downstream channel at the confluence. The restored corridor would extend up to 400 feet downstream of Jurupa Avenue at 50–75 feet wide. Bank stabilization would occur at five sites that exhibit excessive erosion. Bank stabilization at these sites would incorporate bank excavation to reduce steepness and building a narrow bench at the toe to provide a buffer from the active channel. The downstream channel would be narrowed approximately 150 feet and is an effort to promote scouring, increase flow rates, and increase structural complexity. A low floodplain with terrace would be added as well. As with Anza Creek and Old Ranch Creek restoration, creation and enhancement of aquatic and riparian habitat in Lower Hole Creek would increase the quantity and quality of stream habitat used by special-status fishes and semi-aquatic species, and enhancements to existing vegetation communities would result in long-term benefits to other wildlife species.

**Hidden Valley Creek**

The proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I at the Hidden Valley Creek restoration site would enhance 3,320 feet of riparian corridor, and create a new channel and a new perennial groundwater source. The enhanced riparian corridor would extend from the former canal headworks at the eastern end of the site to the Santa Ana River confluence to the west via a newly constructed channel totaling 4,200 feet. A new perennial water source would be sustained by a new groundwater well and pump proposed to be constructed upstream. This proposed source of water would restore hydrology to the floodplain channel. These improvements would provide long-term benefits to special-status and commonly occurring plant and wildlife species.

*Impacts on Special-Status Species from Habitat Modifications*

**Temporary Construction Impacts on Special-Status Species from Habitat Modifications**

Habitat improvements at each restoration site would result in temporary impacts on native vegetation communities, nonnative and invasive vegetation communities, and other land cover types, including open water, disturbed habitat, and urban/developed areas (see Section 3.3.2 for native and nonnative vegetation communities). Temporary impacts are composed of three types of impacts: (1) grading and access, (2) access and staging, and (3) clearing and planting (see Table 3.3-14). Permanent impacts are discussed subsequent to temporary impacts below.
Table 3.3-14. Estimated Temporary and Permanent Impacts on Native Communities, Nonnative Communities, and Land Cover Types at the Tributaries Restoration Project and Mitigation Reserve Program Phase I Sites

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Temporary Grading and Access</th>
<th>Temporary Access and Staging</th>
<th>Temporary Clearing and Planting</th>
<th>Permanent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anza Creek/Old Ranch Creek</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native Communities</td>
<td>4.64</td>
<td>1.82</td>
<td>12.86</td>
<td>0.12</td>
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<tr>
<td>Nonnative Communities</td>
<td>0.92</td>
<td>0.35</td>
<td>2.56</td>
<td>0.00</td>
</tr>
<tr>
<td>Land Cover Types</td>
<td>0.53</td>
<td>3.86</td>
<td>0.16</td>
<td>0.08</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6.09</td>
<td>6.03</td>
<td>15.58</td>
<td>0.20</td>
</tr>
<tr>
<td><strong>Lower Hole Creek</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native Communities</td>
<td>1.94</td>
<td>0.14</td>
<td>2.03</td>
<td>0.15</td>
</tr>
<tr>
<td>Nonnative Communities</td>
<td>0.06</td>
<td>0.15</td>
<td>0.39</td>
<td>-</td>
</tr>
<tr>
<td>Land Cover Types</td>
<td>0.22</td>
<td>2.60</td>
<td>0.47</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2.22</td>
<td>2.89</td>
<td>2.89</td>
<td>0.15</td>
</tr>
<tr>
<td><strong>Hidden Valley Creek</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native Communities</td>
<td>5.21</td>
<td>2.21</td>
<td>12.31</td>
<td>0.28</td>
</tr>
<tr>
<td>Nonnative Communities</td>
<td>0.20</td>
<td>1.12</td>
<td>1.40</td>
<td>-</td>
</tr>
<tr>
<td>Land Cover Types</td>
<td>0.86</td>
<td>6.44</td>
<td>0.37</td>
<td>0.01</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6.27</td>
<td>9.77</td>
<td>14.08</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Source: Appendix B

**Anza Creek/Old Ranch Creek**

Temporary impacts at Anza Creek and Old Ranch Creek would include grading and access (6.09 acres), access and staging (6.03 acres), and clearing and planting (15.58 acres) activities. Temporary access and staging impacts would be concentrated predominantly in urban/developed areas and disturbed habitat (3.86 acres); native vegetation communities would be minimally affected (1.82 acres). Of the temporary grading and access impacts, the majority (4.64 acres) would occur in native vegetation communities. Similarly, temporary clearing and planting impacts would be largest in native vegetation communities (12.86 acres). These impacts are associated with activities that would restore this land cover type to high quality aquatic and riparian habitat for focal, special-status species through channel creation and enhancement, installation of instream habitat features, and riparian vegetation planting. Nevertheless, in their current state, these vegetation communities have the potential to support, or do support, special-status riparian bird species, aquatic and semi-aquatic species, and terrestrial species. Although temporary, the impacts on 19.32 acres of native vegetation would displace special-status species from suitable habitat. As a result, this impact would be potentially significant. However, the impact would be reduced to a less-than-significant level with implementation of mitigation measures BIO-2 through BIO-9, and BIO-11 and BIO-12.

**Lower Hole Creek**

Temporary impacts at Lower Hole Creek would include grading and access (2.22 acres), access and staging (2.89 acres), and clearing and planting (2.89 acres) activities. Similar to the Anza Creek and Old Ranch Creek sites, the majority of impacts on native vegetation communities would result from grading and access (1.94 acres) and clearing and planting (2.03 acres) activities. These vegetation communities have the potential to support, or do support, special-status riparian bird species,
aquatic and semi-aquatic species, and terrestrial species. As at other restoration sites these impacts are associated with conversion to high quality aquatic habitat through channel creation or enhancement, creation of instream habitat features, or riparian vegetation planting. Temporary access and staging impacts would be concentrated in other land cover types (2.60 acres), predominantly urban/developed areas and disturbed habitat, but native vegetation communities would also be minimally affected (0.14 acre). Although temporary, the impacts on 4.11 acres of native vegetation could displace special-status riparian bird species, aquatic and semi-aquatic species, and terrestrial species from suitable habitat. As a result, this impact would be potentially significant. However, the impact would be reduced to a less-than-significant level with implementation of mitigation measures BIO-2 through BIO-9, and BIO-11 and BIO-12.

**Hidden Valley Creek**

Temporary impacts at the Hidden Valley Creek site would include grading and access (6.27 acres), access and staging (9.77 acres), and clearing and planting (14.08 acres). Most impacts on native vegetation communities would result from grading and access (5.21 acres) and clearing and planting (12.31 acres) activities. These vegetation communities have the potential to affect special-status riparian bird species, aquatic and semi-aquatic species, and terrestrial species. These impacts are predominantly associated with conversion to high quality aquatic habitat through riparian planting, creation of instream habitat features, or wetland/channel planting. Temporary access and staging impacts would be concentrated in other land cover types (6.44 acres), predominantly urban/developed areas and disturbed habitat, but native vegetation communities would also be affected (2.21 acres). Although temporary, the impacts on 19.73 acres of native vegetation could displace special-status riparian bird species, aquatic and semi-aquatic species, and terrestrial species from suitable habitat and potentially prevent these species from successfully foraging, seeking cover, and reproducing. As a result, this impact would be potentially significant. However, the impact would be reduced to a less-than-significant level with implementation of mitigation measures BIO-2 through BIO-9, and BIO-11 and BIO-12.

**Permanent Construction Impacts on Special-Status Species from Habitat Modifications**

Habitat improvements at all restoration sites would result in a total of 0.64 acre of permanent impacts on native vegetation communities, nonnative vegetation communities, and other land cover types including open water, disturbed habitat, and urban/developed areas. Permanent impacts would result from conversion of existing vegetation or other land cover types to "hard scape" features such as culverts, weirs, and boulders used in the creation and enhancement of aquatic habitat and riparian habitat. Because of the creation and enhancement of up to 478.90 acres of habitat within the Tributary Restoration Sites, most of which is highly degraded, no net loss of occupied or sensitive habitat would occur as a result of 0.64 acre of hardscape project components; rather a net increase in habitat would occur. Permanent impacts at each Tributaries Restoration Project site are detailed in the following sections.

**Anza Creek/Old Ranch Creek**

Permanent impacts at the Anza Creek/Old Ranch Creek site include impacts on native vegetation communities (0.12 acre), and non-vegetated land cover types (0.08 acre). Permanent impacts on native vegetation communities would occur in Black Willow Thickets, Black Willow/Fremont Cottonwood Forest, Fremont Cottonwood Forest, and Fremont Cottonwood/Willow/Wild Grape Forest. These vegetation communities have the potential to support special-status riparian bird species, aquatic and semi-aquatic species, and terrestrial species. These impacts would result from
stream channel enhancements, installation of lunker structure or boulder terraces, and riparian shrub or wetland/channel planting. Conversion of 0.17 acre of native vegetation to aquatic habitat features is unlikely to adversely affect special-status species, which would continue to have access to the 113 acres of these vegetation communities available at this site.

An additional 0.06 acre of open water habitat would be permanently affected by conversion to a variety of in-water habitat features and channel enhancements. Open water habitat is expected to support special-status aquatic and semi-aquatic species at these restoration sites. Conversion of the existing low quality open water habitat to high quality aquatic habitat elements via channel enhancements, riparian and channel plantings, lunker structure, and angle weirs would not be considered adverse. A total of 1.10 acres of floodplain bench would be created.

**Lower Hole Creek**

Permanent impacts at Lower Hole Creek consist of impacts on native vegetation communities (0.15 acre), including Black Willow Thickets and California Sycamore Woodlands, and a very small area (> 0.01 acre) of urban/developed area. These impacts would result from installation of boulder terraces and aquatic step pool habitat, and bank stabilization activities. These vegetation communities have the potential to support special-status riparian bird species, aquatic and semi-aquatic species, and terrestrial species. However, removal of this acreage represents a relatively small amount of habitat affected/removed compared to the 4.20 acres of these vegetation communities available at the site, most of which would be enhanced from current conditions. A total of 0.50 acre of floodplain bench would be created. Therefore, removal of this amount of habitat would not be considered adverse when compared to the overall net increase in high quality habitat.

**Hidden Valley Creek**

Permanent impacts at the Hidden Valley Creek site consist of impacts on native vegetation communities (0.28 acre) and other land cover types (0.01 acre). Permanent impacts on native vegetation communities would occur in Fremont Cottonwood/Willow Forest, Fremont Cottonwood/Willow/Mulefat Forest, and Mulefat Thickets. These impacts would result from installation of culverts, channel enhancements, and riparian and wetland/channel plantings. These vegetation communities have the potential to support, or do support, special-status riparian bird species, aquatic and semi-aquatic species, and terrestrial species. Removal of this acreage represents a relatively small amount of habitat affected/removed compared to the 47.00 acres of these vegetation communities available at the site. A total of 1.30 acres of floodplain bench would be created. Therefore, removal of this amount of habitat would be considered less than significant.

**Benefits to Special-Status Species from Habitat Modifications**

Existing fish habitat at the Anza Creek and Old Ranch Creek project sites is limited to a portion of the Anza Creek channel that supports perennial flows, with variable habitat quality ranging from poor to high, largely dependent on flow velocity and channel substrate. Existing fish habitat at the Lower Hole Creek site consists of highly degraded perennial stream habitat due to a high level of human disturbance and trash, the presence of invasive species, the presence of a large drop structure (at Jurupa Avenue) that has reduced sediment transport and delivery of coarse sand and gravel substrate, and excessive bank erosion that has contributed fine-grained sediment to the stream. There is currently no existing fish habitat at the Hidden Valley Creek project site due to near-absence of perennial or intermittent surface hydrology, a legacy of damage caused by a 2010 flood, and resultant impairment of channel structure and function.
Creation and enhancement of aquatic and riparian habitat in Anza Creek and Old Ranch Creek and the establishment of a perennial water source in Old Ranch Creek would increase the quantity and quality of stream habitat for special-status fishes and semi-aquatic species, resulting in long-term benefits to those species. Additional benefits to native fish and semi-aquatic species could include reduced risk of predation by nonnative predators (e.g., bass and bullfrogs) that currently use the deep pool in Anza Creek, by recontouring the pool to make it shallower and less suitable for predators. Channel modifications and increased flow could reduce the current risk of suffocation, desiccation, and predation that may occur when fish are stranded or trapped in isolated aquatic habitats during seasonal drying of portions of Anza Creek.

Wetland habitats would be created, enhanced, and/or restored at the Anza Creek, Old Ranch Creek, Lower Hole Creek, and Hidden Valley Creek project sites. Alkali marsh habitat would also be restored at the Old Ranch Creek site. Creation and enhancement of wetland and marsh habitats would benefit sensitive aquatic, semi-aquatic, and riparian species with potential to occur within the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites and that use these habitats during their natural life history.

Creation, restoration, and enhancement of floodplain habitat would occur at the Anza Creek, Old Ranch Creek, Lower Hole Creek, and Hidden Valley Creek project sites. Creating floodplain benches to provide additional areas to where overbank flows can spread is expected to enhance existing riparian zones and improve riparian habitat that would benefit sensitive amphibians, reptiles, and bird species, such as least Bell’s vireo and yellow-breasted chat, breeding, which have been confirmed at the Anza Creek/Old Ranch Creek and Hidden Valley Creek project sites. Suitable habitat for Santa Ana River woolly-star currently occurs at the Anza Creek/Old Ranch Creek and Hidden Valley Creek sites, and suitable habitat for smooth tarplant occurs at the Anza Creek/Old Ranch Creek site. Restoration opportunities to enhance the floodplain and to restore California annual grassland and alkali marsh would improve habitat conditions for Santa Ana River woolly-star and smooth tarplant.

Planting of coastal scrub for revegetation at the Anza Creek/Old Ranch Creek site would benefit sensitive species with potential to occur within the sites that use scrub habitat for breeding and/or foraging, potentially including sensitive and common birds, mammals, and reptiles. Expansion of suitable coastal scrub habitat is expected to benefit northwest San Diego pocket mouse, western mastiff bat, San Diego black tailed jackrabbit, and San Diego desert woodrat, as well as other avian, mammalian, and reptilian species.

Nonnative vegetation removal and replacement with native species is proposed in riparian and California annual grassland habitats at the Anza Creek, Old Ranch Creek, Lower Hole Creek, and Hidden Valley Creek sites. As described above, vegetation removal activities have the potential to temporarily affect nesting birds and other sensitive terrestrial species; however, this restoration activity is expected to have a net benefit to these species by improving the quality and quantity of riparian and California annual grassland habitats. Species potentially benefitting from riparian restoration and grassland habitat improvement include those that may breed, forage, and/or shelter in riparian and upland habitats. These species include, but are not limited to, least Bell’s vireo, grasshopper sparrow, yellow-breasted chat, yellow warbler, western yellow bat, and two-striped gartersnake, all of which rely on riparian and/or grassland habitat.

Human activity in both the buffer and the floodplain degrades conditions as a result of trail creation, trash disposal, vegetation clearing, and human waste. Limiting human disturbance in restored and
enhanced areas would be expected to benefit all special-status species and improve overall wetland conditions. The restoration areas would be delineated and staked, restoration signage would be installed, and routine patrols would be conducted. Specific benefits to sensitive species at each of the Tributaries Restoration sites are discussed in the following sections.

**Anza Creek and Old Ranch Creek**

Table 3.3-15 summarizes the sensitive species that would benefit from restoration activities at the Anza Creek/Old Ranch Creek site. Establishment of new floodplain would include the creation of riparian and scrub habitat within the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites. Least Bell’s vireo, willow flycatcher, yellow-breasted chat, and yellow warbler occur on site, and riparian habitat suitable for these species occupies much of the site. Santa Ana River woolly-star was detected on site during a March 12, 2014, site visit. No sensitive plant species were detected during 2016 site visits, but habitat for Santa Ana River woolly-star and smooth tarplant does exist throughout the site (Appendix B). Restoration of the creek, including removal of invasive species and enhancement of the riparian habitat, would benefit these species. The enhancement and creation of wetted channels would create suitable habitat for arroyo chub, Santa Ana sucker, and Santa Ana speckled dace. These species would be able to feed and reproduce in the wetted channels because of increased surface flows. Restoring riparian habitat and controlling invasive species would allow for two-striped gartersnake and southwestern pond turtle to reproduce successfully without disturbance, thereby increasing recruitment.

**Table 3.3-15. Summary of Restoration Design Components and Benefits to Sensitive Species at the Anza Creek/Old Ranch Creek Tributary Restoration Sites**

<table>
<thead>
<tr>
<th>Restoration Opportunities</th>
<th>Santa Ana Sucker</th>
<th>Santa Ana Speckled Dace</th>
<th>Arroyo Chub</th>
<th>Southwestern Pond Turtle</th>
<th>Two-Striped Gartersnake</th>
<th>Least Bell’s Vireo</th>
<th>Yellow-Breasted Chat</th>
<th>California Gnatcatcher</th>
<th>Western Yellow-Billed Cuckoo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehabilitate Existing Channel</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Establish New Floodplain</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>Construct New, and Enhance Existing, Channels</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Control Invasive Wildlife Species</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
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<td>✓</td>
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<td>✓</td>
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<tr>
<td>Construct Rock and Woody Debris Structures</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Source: Appendix B
Table 3.3-16 summarizes the sensitive species that would benefit from restoration activities at the Lower Hole Creek. Channel enhancement and construction of rock and woody debris structures would contribute to increased ecosystem functions and benefits for aquatic and semi-aquatic species within the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites. Stabilization of channel banks would increase the amount of suitable habitat along the channel's margin and decrease the rate of siltation, maintaining the appropriate substrate structure for Santa Ana sucker and Santa Ana speckled dace to forage and reproduce. Restoration activities that enhance riparian conditions at the site—including creating floodplain bench area and vegetation to increase native shrub density and vegetation strata and limiting human disturbance—would increase habitat quality for sensitive riparian bird species including least Bell’s vireo, southwestern willow flycatcher, and yellow-breasted chat.

### Table 3.3-16. Summary of Restoration Design Components and Benefits to Sensitive Species at the Lower Hole Creek Tributary Restoration Site

<table>
<thead>
<tr>
<th>Restoration Opportunities</th>
<th>Santa Ana Sucker</th>
<th>Santa Ana Speckled Dace</th>
<th>Arroyo Chub</th>
<th>Southwestern Pond Turtle</th>
<th>Two-Striped Garter Snake</th>
<th>Least Bell's Vireo</th>
<th>Southwestern Willow Flycatcher</th>
<th>Yellow-Breasted Chat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restore Riparian Corridor</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Enhance Channel</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Construct Rock and Woody Debris Structures</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Re-establish Floodplain</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Stabilize Channel Banks</td>
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<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
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<tr>
<td>Restore Tributary East of Lower Hole Creek Channel</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Narrow Lower Hole Creek Channel and Create Terrace at Downstream End</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Control Nonnative Invasive Wildlife Species</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Control Human Disturbance</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Source: Appendix B

### Hidden Valley Creek

Table 3.3-17 summarizes the sensitive species that would benefit from restoration activities at the Hidden Valley Creek site. Provision of a perennial water source, restoration of channel complexity and the addition of rock and wooded structures would provide aquatic and semi-aquatic species with suitable habitat to forage and reproduce. Restoration activities that enhance riparian
conditions at the site, creating a stream channel in the old canal reach or an oxbow feature and enhancing native riparian vegetation, would further increase habitat quality for covered riparian bird species, including least Bell’s vireo, southwestern willow flycatcher, and yellow-breasted chat. Controlling invasive species, such as brown-headed cowbird, and limiting human disturbance would also result in long-term benefits to covered bird species.

Table 3.3-17. Summary of Restoration Design Components and Benefits to Sensitive Species at the Hidden Valley Creek Tributary Restoration Site

<table>
<thead>
<tr>
<th>Restoration Opportunities</th>
<th>Santa Ana Sucker</th>
<th>Santa Ana Speckled Dace</th>
<th>Arroyo Chub</th>
<th>Southwestern Pond Turtle</th>
<th>Two-Striped Gartersnake</th>
<th>Least Bell’s Vireo</th>
<th>Southwestern Willow Flycatcher</th>
<th>Yellow-Breasted Chat</th>
<th>Santa Ana River Woolly-Star</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restore Channel Structural Complexity</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Provide a Perennial Water Source</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Enhance Native Riparian Vegetation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Construct Rock and Woody Debris Structures</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>Enhance Floodplain Habitat</td>
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<td>✓</td>
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<tr>
<td>Control Invasive Wildlife Species</td>
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<td></td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
</tr>
<tr>
<td>Limit Human Disturbance</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Source: Appendix B

Operational and Maintenance Impacts

Direct and indirect temporary impacts on special-status species resulting from habitat modification could occur during post-construction Tributaries Restoration Project and Mitigation Reserve Program Phase I activities when maintenance crews are performing invasive removal, weeding, planting, or other restoration maintenance activities. Maintenance weeding would likely occur monthly during the growing season. Impacts would likely be more intense in the early phases of restoration when vegetation is young and sparse and rigorous and frequent weed control is required; as native vegetation becomes denser and weeds become more controlled and limited, these impacts are anticipated to lessen. Once the native vegetation is fully established, restoration maintenance is expected to be minimal, and much of the restoration area would likely be impenetrable for humans. Impacts could also occur when overall site maintenance activities are performed, which are expected to occur in perpetuity, such as homeless encampment removal, signage and fencing maintenance, unauthorized trail removal, or other long-term maintenance work. However, operational impacts on special-status species through habitat modification are expected to be negligible or nonexistent.
Following construction, habitat modifications caused by maintenance vehicles traveling on access roads could temporarily affect special-status species. Access roads are not expected to be bladed during operations and would be allowed to grow over with vegetation, impassable locations would be spot-repaired, and access roads would avoid sensitive areas to the maximum extent practicable. Operations and maintenance work would not require large-scale equipment deployment and would be staged in existing roadways.

In summary for Impact 1.3, among all Tributaries Restoration Project and Mitigation Reserve Program Phase I sites, a total of 0.64 acre of habitat would be permanently affected by hardscape installation; however, new floodplain bench habitat would be created and the quality of habitat would be enhanced at each Tributaries Restoration Project and Mitigation Reserve Program Phase I site, largely through activities to restore hydrological functioning, controlling invasive wildlife species, and limiting human disturbance. As described above, creation and enhancements are expected to have an overall benefit to many special-status species with no net loss of habitat resulting from permanent design components. Nonetheless, the Tributaries Restoration Project and Mitigation Reserve Program Phase I would require mitigation measures to avoid and minimize impacts. Restoration of degraded habitats with higher quality habitat, long-term management and protection of restored sites, and implementation of mitigation measures BIO-1 through BIO-17 would reduce this impact to less-than-significant levels.

**Significance Determination Prior to Mitigation:** Potentially significant.

As described above, indirect impacts on special-status species resulting from habitat modifications would be considered significant under CEQA. With implementation of mitigation measures BIO-1 through BIO-17, indirect impacts from habitat modifications would be avoided and/or minimized to the maximum extent feasible. By design, the proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I would: increase the amount and quality of habitat for the Santa Ana sucker and other sensitive native species and enhance jurisdictional aquatic resources, restore existing channels and an existing floodplain tributary, enhance existing riparian and floodplain habitats, limit human disturbance, and control nonnative invasive species. Therefore, considering the overwhelming long-term benefits of the proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I for sensitive species and their habitats relative to impacts resulting from construction activities and habitat modifications, Impact BIO-1.3 would be reduced to a less-than-significant level with implementation of mitigation measures BIO-1 through BIO-17.

**Mitigation Measures**

Implement mitigation measures BIO-1 through BIO-17.

**Level of Significance Following Mitigation:** Less than significant.

With implementation of mitigation measures BIO-1 through BIO-17, impacts resulting from indirect impacts on special-status species resulting from habitat modifications within the Tributaries Restoration Project and Mitigation Reserve Program Phase I would be reduced to a less-than-significant level.
Expanded Mitigation Reserve Program Phase II

Construction Impacts

Project-specific construction-related indirect impacts on special-status species resulting from habitat modifications will be analyzed when specific details of the projects of the Expanded Mitigation Reserve Program Phase II are available. Although the indirect impacts would likely be temporary and generally limited to the construction period, special-status species could be subject to temporary indirect impacts as habitats are enhanced and created during construction. Construction-related stress, behavioral impairment, and displacement of special-status terrestrial, riparian, semi-aquatic, and upland species could result.

Outside specific Mitigation Reserve site limits of disturbance, habitat modifications caused by vehicles could affect special-status species within existing access roads. These roads would be bladed for construction vehicle traffic, but only as needed when existing conditions become impassable, and they would avoid sensitive areas to the maximum extent practicable. Staging areas would be placed strategically as far away from sensitive areas as practicable, balanced with the need for efficient construction sites.

Operational and Maintenance Impacts

Project-specific operations-related indirect impacts on special-status species resulting from habitat modifications will be analyzed when specific details of the projects of the Expanded Mitigation Reserve Program Phase II are available. Creation and enhancement of aquatic and riparian habitat for the Expanded Mitigation Reserve Program Phase II would increase the quantity and quality of existing vegetation communities and would improve functions and values for other special-status wildlife.

Following construction, maintenance vehicles could affect special-status species while traveling on access roads to the specific Expanded Mitigation Reserve Program Phase II sites, potentially hitting, crushing, or destroying these species. However, access roads would not be bladed during operations and would be allowed to grow over with vegetation, impassable locations would be spot-repaired, and roads would avoid sensitive areas to the maximum extent practicable. Operations and maintenance work would not require large-scale equipment deployment, and would be staged in existing roadways. Nonetheless, the benefits to special-status species, in general, from low quality habitat conversion to high quality habitat for special-status species far outstrips the habitat lost, but this indirect impact would be considered significant.

Significance Determination Prior to Mitigation: Potentially significant.

As described above, indirect impacts on special-status species resulting from habitat modifications could be considered significant under CEQA. With implementation of mitigation measures BIO-18 through BIO-24 direct impacts from habitat modifications would be minimized to the maximum extent feasible. Construction-related direct impacts on special-status species resulting from habitat modifications will be analyzed when specific details of the projects of the Expanded Mitigation Reserve Program Phase II are available.
Mitigation Measures

Implement mitigation measures BIO-18 through BIO-24.

Level of Significance Following Mitigation: Less than significant.

With implementation of mitigation measures BIO-18 through BIO-24, impacts resulting from indirect impacts on special-status species resulting from habitat modifications within the Expanded Mitigation Reserve Program Phase II would be reduced to a less-than-significant level.

Impact BIO-2: Potential to result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service (Less than significant with mitigation incorporated.)

Tributaries Restoration Project and Mitigation Reserve Program Phase I

As described in Chapter 2, the proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I would create or enhance ecologically important riparian, floodplain, and alkali meadow habitat through restoration of four Santa Ana River tributaries sites. Although the proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I would result in a net gain in these habitat types, construction would cause the temporary loss or degradation of habitat potentially used by native species. Construction would take approximately 4 months at each restoration site and the natural revegetation of the affected areas would likely take several years to become dense, mature native vegetation stands.

Impacts on Riparian Habitat or Other Sensitive Natural Communities

Construction Impacts

Temporary construction-related impacts would affect riparian and other sensitive natural communities. Construction activities would include clearing, grubbing, excavation, and grading during streambed, floodplain, riparian creation and enhancement activities, as well as creation, use, and maintenance of temporary access roads for heavy equipment and revegetation.

Permanent effects from channel and floodplain creation, enhancement, and restoration activities would include physical design structures such as boulders, gravel bars, and culverts, resulting in small, but adverse, permanent impacts due to reductions in habitat quantity or suitability for native species. Construction could affect riparian habitat or other sensitive natural communities within or adjacent to existing access roads. These roads would be bladed for construction vehicle traffic to a width of 14 feet and staging areas would also be bladed, as shown on Figures 3.3-4, 3.3-9, and 3.3-14. Access roads would avoid sensitive areas to the maximum extent practicable, and staging areas would be placed strategically as far away from sensitive areas as practicable, balanced with the need for efficient construction sites. Staging areas would be restored at the conclusion of construction.

Table 3.3-18 shows the acreages of estimated impacts on each natural community within the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites. Impacts on waters of the U.S. and state, including protected wetlands and other jurisdictional resources, are evaluated separately in Impact BIO-3. As noted in Table 3.3-18, permanent impacts would represent a minor component of the overall Tributaries Restoration Project and Mitigation Reserve Program Phase I impacts.
### Table 3.3-18. Acres of Temporary and Permanent Impacts on Natural Communities at Each Tributary Restoration Project and Mitigation Reserve Program Phase I Site

<table>
<thead>
<tr>
<th>Natural Community Name</th>
<th>Temporary Grading and Access</th>
<th>Temporary Access and Staging</th>
<th>Temporary Clearing and Planting</th>
<th>Permanent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anza Creek/Old Ranch Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrow Weed Thickets</td>
<td>0.22</td>
<td>0.25</td>
<td>0.67</td>
<td>--</td>
</tr>
<tr>
<td>Black Willow Thickets</td>
<td>0.06</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Black Willow/Fremont Cottonwood Forest</td>
<td>3.03</td>
<td>0.47</td>
<td>6.38</td>
<td>0.01</td>
</tr>
<tr>
<td>Cattail Marshes</td>
<td>0.04</td>
<td>--</td>
<td>0.02</td>
<td>--</td>
</tr>
<tr>
<td>Fremont Cottonwood Forest</td>
<td>0.35</td>
<td>0.30</td>
<td>0.12</td>
<td>0.04</td>
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<tr>
<td>Fremont Cottonwood/Willow/Wild Grape Forest</td>
<td>1.44</td>
<td>0.27</td>
<td>5.43</td>
<td>0.07</td>
</tr>
<tr>
<td><strong>Total – Anza Creek/Old Ranch Creek</strong></td>
<td>5.14</td>
<td>1.29</td>
<td>12.62</td>
<td>0.12</td>
</tr>
<tr>
<td>Lower Hole Creek</td>
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</tr>
<tr>
<td>Black Willow Thickets</td>
<td>0.32</td>
<td>0.01</td>
<td>0.78</td>
<td>--</td>
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<tr>
<td>California Buckwheat Scrub</td>
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<td>--</td>
<td>0.05</td>
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<tr>
<td>California Sycamore Woodlands</td>
<td>1.62</td>
<td>0.07</td>
<td>1.08</td>
<td>0.15</td>
</tr>
<tr>
<td><strong>Total – Lower Hole Creek</strong></td>
<td>1.95</td>
<td>0.08</td>
<td>1.91</td>
<td>0.15</td>
</tr>
<tr>
<td>Hidden Valley Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black Willow Thickets</td>
<td>1.94</td>
<td>1.51</td>
<td>8.75</td>
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<tr>
<td>Fremont cottonwood/Willow Forest</td>
<td>0.72</td>
<td>0.57</td>
<td>0.91</td>
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</tr>
<tr>
<td>Fremont Cottonwood/Willow/Mulefat Forest</td>
<td>1.01</td>
<td>--</td>
<td>1.08</td>
<td>0.25</td>
</tr>
<tr>
<td>Fremont Cottonwood/Willow/Wild Grape Forest</td>
<td>0.03</td>
<td>--</td>
<td>0.25</td>
<td>--</td>
</tr>
<tr>
<td>Mulefat Thickets</td>
<td>1.51</td>
<td>0.03</td>
<td>1.24</td>
<td>0.03</td>
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<tr>
<td><strong>Total – Hidden Valley Creek</strong></td>
<td>5.21</td>
<td>2.11</td>
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</tr>
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<td><strong>Grand Total</strong></td>
<td><strong>7.10</strong></td>
<td><strong>3.50</strong></td>
<td><strong>26.76</strong></td>
<td><strong>0.55</strong></td>
</tr>
</tbody>
</table>

-- = no impacts

**Anza Creek and Old Ranch Creek**

At the Anza Creek and Old Ranch Creek sites approximately 1.70 acres of new floodplain bench would be created by excavating the high ground adjacent to the low-flow channel. A 580-foot-long section of Anza Creek’s left bank adjacent to the bicycle trail at Martha McLean-Anza Narrows Park is steep, unvegetated, up to 25 feet tall, and actively eroding into Anza Creek. The bank would be excavated to reduce its steepness, and 0.80 acre would be revegetated with a mixture of riparian plants near the base. An additional 2.10 acres of coastal scrub would be planted upstream of the eroding bank in an unvegetated and sloping area of the site between the bicycle trail and the Anza Creek channel. A new riparian corridor would be created, adjacent to which nonnative plants would be removed and new native vegetation would be planted. The riparian corridor would be
approximately 100 feet wide (50 feet on either side of the channel); approximately 2.50 acres would be planted with native vegetation. Approximately 15.58 acres would have selective clearing and planting, of which 12.62 acres would occur within native communities.

At the Anza Creek and Old Ranch Creek sites, 0.12 acre of riparian or sensitive natural communities would be permanently affected by project activities (Table 3.3-18). These communities include Black Willow/Fremont Cottonwood Forest, Fremont Cottonwood Forest, and Fremont Cottonwood/Willow/Wild Grape Forest. A total of 19.05 acres of riparian or sensitive natural communities would experience temporary construction impacts.

**Lower Hole Creek**

At the Lower Hole Creek site, approximately 2.62 acres would have selective clearing and planting to create a floodplain bench. See Figure 2-8 for details of floodplain creation. The establishment of a new floodplain is expected to permanently affect 0.15 acre of California Sycamore Woodlands. Construction activities would temporarily affect 3.94 acres of natural communities, which includes temporary clearing, grading, staging, and planting within 1.11 acres of Black Willow Thickets, 0.06 acre of California Buckwheat Scrub, and 2.77 acres of California Sycamore Woodlands.

**Hidden Valley Creek**

Construction activities at the Hidden Valley Creek site would permanently affect 0.25 acre of Fremont Cottonwood/Willow/Mulefat Forest and 0.03 acre of Mulefat Thickets, totaling 0.28 acre of permanently affected natural communities. A total of 19.55 acres of riparian and sensitive natural communities would experience temporary impacts during project construction due to grading, staging, and temporary clearing and planting. These communities include Black Willow Thickets, Fremont Cottonwood/Willow/Mulefat Forest, Fremont Cottonwood/Willow/Wild Grape Forest, and Mulefat Thickets.

**Benefits to Riparian Habitat or Other Sensitive Natural Communities**

The proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I would result in an overall improvement to riparian habitat and other sensitive natural communities within the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites. Activities at each site include restoration of riparian habitat through removal of nonnative vegetation, planting new native vegetation, limiting human disturbance, and controlling invasive wildlife species. Each of these restoration opportunities would enhance the quality and quantity of riparian habitat and other natural communities.

**Anza Creek and Old Ranch Creek**

The Anza Creek and Old Ranch Creek site currently supports a variety of native floodplain habitats, including Black Willow Cottonwood Riparian Forest, Arrow Weed Thickets, and Salt Grass Flats. Extensive nonnative plant communities found on site include nonnative grassland and nonnative riparian habitat, dominated by palms. Control of nonnative species will benefit riparian and other native communities. Areas within the upper floodplain that historically supported alkali meadow habitat that are now disturbed and degraded will be restored. Channel reconfiguration to enhance hydrological performance and the establishment of 1.70 acres of new floodplain would improve ecological functioning of riparian communities within the Anza Creek and Old Ranch Creek site. Lower Hole Creek supports dense riparian vegetation along most of the upstream half of Lower Hole Creek, which becomes less abundant along the downstream reach. Riparian habitat is
dominated by black willows as well as many invasive species. There are fringing wetlands dominated by emergent species present along portions of the creek, with more substantial emergent wetlands present at the confluence with the creek and the floodplain of the Santa Ana River. Upland areas consist mostly of California annual grassland that is dominated by nonnative grasses.

The riparian corridor would be restored by removing nonnative vegetation and planting new native vegetation. The total width of the corridor would range from 50 to 75 feet but would extend up to over 400 feet in a pocket downstream of Jurupa Avenue where runoff from Van Buren Boulevard enters the site though a culvert. A total of 5.50 acres of riparian vegetation would be restored downstream of Jurupa Avenue. Approximately 1 acre of new floodplain would be created, spread out over nine different areas, by excavating the high ground adjacent to the low-flow channel. The typical width of the inset floodplain areas would be 25–75 feet, and the average excavation depth would be 3–4 feet. Additionally, improvements in upland, nonnative grassland habitat to coastal scrub habitat would provide a buffer to wetland and riparian areas. Limiting human disturbance to this site would maximize ecological functioning of restored habitat. Bank stabilization and channel enhancement would restore hydrological functioning to the site, which in turn would positively affect wetland, riparian, and floodplain habitats within the Anza Creek and Old Ranch Creek sites.

Hidden Valley Creek

The Hidden Valley Creek site is dominated by a series of native riparian and floodplain vegetation communities. In addition, a large portion of the site (eastern end) supports nonnative California annual grassland with an often monotypic cover of nonnative (locally invasive) sunflower. This habitat would be treated for nonnative species and revegetated with a series of appropriate vegetation communities including Fremont Cottonwood/Willow Forest, Alkali Marsh, Arrow Weed Thicket, and Mulefat Scrub. Restoration of a floodplain tributary at this site would include the restoration of riparian habitat surrounding the restored floodplain. The riparian corridor extends along the length of a 3,320-foot channel, and enhancement through nonnative species removal would target the entire area. Limiting human disturbance to this site would maximize ecological functioning of restored habitat.

Operational and Maintenance Impacts

Direct impacts on riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations, or CDFW or USFWS could occur during post-construction restoration activities when maintenance crews are performing invasive species removal, weeding, planting, or other restoration maintenance and when biologists are performing field analysis related to restoration success criteria. Impacts could include temporarily inhibiting or disturbing, crushing, or destroying minor areas of riparian habitat or other sensitive natural communities. Direct operational impacts on constituent special-status plants within these habitats or communities are expected to be negligible or nonexistent as the species would presumably be identifiable by maintenance crews. Restoration site maintenance is expected to occur over a period of 5-10 years, and maintenance weeding would likely occur monthly during the growing season. Impacts would likely be more intense in the early phases of restoration when vegetation is young and sparse and rigorous and frequent weed control is required; as native vegetation becomes denser and weeds become more controlled and limited, these impacts are anticipated to lessen. Once the native vegetation is fully established, restoration maintenance is expected to be minimal, and much of the restoration area would likely be impenetrable for humans. Impacts could also occur when overall site maintenance activities are performed, which are expected in perpetuity, such as homeless
Summary of Impacts and Benefits

Despite an expected overall increase in the amount and quality of riparian habitat and sensitive natural vegetation communities, the Tributaries Restoration Project and Mitigation Reserve Program Phase I would result in permanent loss of approximately 0.55 acre of native vegetation communities. In addition, approximately 31.3 acres of native vegetation communities are expected to be temporarily degraded through construction activities within all Tributaries Restoration Project and Mitigation Reserve Program Phase I sites. This impact would be significant. However, with restoration of channel morphology and hydrologic functioning of the Santa Ana River tributaries, limiting human disturbance, and removal of nonnative invasive species, the quality and quantity of riparian and other natural habitats within the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites would improve.

Significance Prior to Mitigation: Potentially significant.

Implementation of mitigation measures BIO-16 (see Impact BIO-1.1) and BIO-26 would reduce this impact to less-than-significant levels. Mitigation measure BIO-16 outlines construction activity BMPs to minimize degradation of adjacent natural communities. Mitigation measure BIO-26 describes a revegetation plan for temporarily affected riparian habitat or other sensitive natural community.

Mitigation Measures

Mitigation Measure BIO-26: Restore Temporarily Affected Riparian Habitat or Other Sensitive Natural Communities

Prior to any ground disturbances a site-specific revegetation plan shall be prepared by a qualified restoration ecologist that includes a description of existing conditions for each area, disturbances, site preparation, revegetation methods, maintenance and monitoring criteria, performance standards, and adaptive management practices. The plan shall identify cover standards that shall be developed for each plant community target, and cover values established for each layer (shrub, herb, and/or tree layers). The restoration plan shall include a restoration mitigation and monitoring program detailing: (1) a clear description of the restoration activities to be completed, including: (a) any recontouring, (b) methods for de-compacting soils, (c) a planting/seeding plan and plant/seed palette, and (d) an irrigation plan; (2) a comprehensive monitoring and maintenance plan, including: (a) a detailed monitoring and maintenance schedule, (b) a nonnative plant removal plan, including procedures to ensure that nonnative plants are not introduced or allowed to sustain within the restoration areas, (c) success standards (e.g., survival, native plant establishment, diversity, nonnative cover), (d) locations of permanent photo stations, and (e) adaptive management measures; (3) graphics and accompanying GIS shapefiles of the restoration areas; and (4) a contingency plan (e.g., purchase of additional mitigation credits, mitigation at a different offsite location) in the event that the restoration areas do not meet success criteria. Revegetation shall be implemented immediately following construction activities to ensure no permanent net loss of sensitive habitats would occur. Seeds and container stock shall be from regional stock.

Level of Significance Following Mitigation: Less than significant.
With the implementation of mitigation measures BIO-16 and BIO-26, impacts resulting from substantial adverse effects on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS within the Tributaries Restoration Project and Mitigation Reserve Program Phase I would be reduced to a less-than-significant level.

**Expanded Mitigation Reserve Program Phase II**

*Construction Impacts*

As described in Chapter 2, the proposed Expanded Mitigation Reserve Program Phase II would create or enhance ecologically important riparian, floodplain, and alkali meadow habitat. Although the proposed Expanded Mitigation Reserve Program Phase II would result in a net gain in these habitat types, construction would cause the temporary modification of habitat potentially used by native species. Outside specific Mitigation Reserve site limits of disturbance, habitat modifications caused by vehicles could affect riparian habitat or other sensitive natural communities within or adjacent to existing access roads. These roads would be bladed for construction vehicle traffic, but only as needed where existing conditions become impassable, and would avoid sensitive areas to the maximum extent practicable. Staging areas would be placed strategically as far away from sensitive areas as practicable, balanced with the need for efficient construction sites. Construction-related substantial adverse effects on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS will be analyzed at a project-specific level when specific details of the projects within the Expanded Mitigation Reserve Program Phase II are available.

*Operational and Maintenance Impacts*

Direct impacts on riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS could occur during post-construction restoration activities when maintenance crews are performing invasive species removal, weeding, planting, or other restoration maintenance and when biologists are performing field surveys of restoration success criteria. Impacts could include temporarily inhibiting or disturbing, crushing, or destroying minor areas of riparian habitat or other sensitive natural communities. Following construction, habitat modifications caused by vehicles could affect riparian habitat or other sensitive natural communities within or adjacent to existing access roads while traveling during maintenance activities, potentially hitting, crushing, or destroying species. Access roads would not be bladed during operations and would be allowed to grow over with vegetation, impassable locations would be spot-repaired, and roads would avoid sensitive areas to the maximum extent practicable. Operations and maintenance work would not require large-scale equipment deployment, and would be staged in existing roadways. Direct operational impacts on constituent special-status plants within these habitats or communities are expected to be negligible or nonexistent as the species would presumably be identifiable by maintenance crews. Though specific Expanded Mitigation Reserve Program Phase II details are not known, the revegetation of the affected areas would likely take several years to become dense, mature native vegetation stands.

**Significance Determination Prior to Mitigation:** Potentially significant.

Implementation of mitigation measure BIO-27 would reduce this impact to less-than-significant levels.
Mitigation Measures

Mitigation Measure BIO-27: Restore Temporarily Affected Riparian Habitat or Other Sensitive Natural Communities

Prior to any ground disturbances a site-specific revegetation plan shall be prepared by a qualified restoration ecologist that includes a description of existing conditions for each area, disturbances, compensation mitigation, site preparation, revegetation methods, maintenance and monitoring criteria, performance standards, and adaptive management practices. The plan shall identify cover standards that shall be developed for each plant community target, and cover values established for each layer (shrub, herb, and/or tree layers). The restoration plan shall include a restoration mitigation and monitoring program detailing: (1) a clear description of the restoration activities to be completed, including: (a) any recontouring, (b) methods for de-compacting soils, (c) a planting/seeding plan and plant/seed palette, and (d) an irrigation plan; (2) a comprehensive monitoring and maintenance plan, including: (a) a detailed monitoring and maintenance schedule, (b) a nonnative plant removal plan, including procedures to ensure that nonnative plants are not introduced or allowed to sustain within the restoration areas, (c) success standards (e.g., survival, native plant establishment, diversity, nonnative cover), (d) locations of permanent photo stations, and (e) adaptive management measures; (3) graphics and accompanying GIS shapefiles of the restoration areas; and (4) a contingency plan (e.g., purchase of additional mitigation credits, mitigation at a different offsite location) in the event that the restoration areas do not meet success criteria. Revegetation shall be implemented immediately following construction activities to ensure no permanent net loss of sensitive habitats would occur. Seeds and container stock shall be from regional stock.

Level of Significance Following Mitigation: Less than significant

With the implementation of mitigation measure BIO-27, impacts resulting from substantial adverse effects on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS within the Expanded Mitigation Reserve Program Phase II would be reduced to a less-than-significant level.

Impact BIO-3: Potential to result in a substantial adverse effect on state or federally protected wetlands (e.g., marshes, vernal pools, coastal wetlands) through direct removal, filling, hydrological interruption, or other means (Less than significant with mitigation incorporated)

Tributaries Restoration Project and Mitigation Reserve Program Phase I

Construction Impacts

As described in Section 3.3.2, the tributaries restoration sites support aquatic resources. This includes waters of the U.S. and state consisting of non-wetland and wetland waters subject to the jurisdiction of USACE and RWQCB under Sections 404 and Section 401 of the CWA, respectively, and streambed and associated riparian (contiguous with the streambed) subject to regulation by CDFW under CFGC Section 1602. Impacts on aquatic resources would be potentially significant and would require mitigation.
Impacts on Jurisdictional Waters and Wetlands and CDFW Jurisdictional Streambed and Associated Riparian

Table 3.3-19 shows the acreages of estimated impacts on wetlands and non-wetland waters of the U.S. and state at each restoration site within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance. For the purposes of this analysis, impacts on individual jurisdictional features have been summarized for each restoration site. An impact analysis is not included for each feature. Figures 3.3-7, 3.3-12, and 3.3-17 show the USACE/RWQCB jurisdictional aquatic features at the respective sites.

Impacts have been considered permanent if they result in irreversible effects or removal of resources. Examples of permanent impacts include the installation of culverts and hardened structures for bank stabilization or to address potential erosion, or the direct loss of a feature, such as through the direct and permanent placement of fill into the feature, permanently removing its ability to convey flow and the functions it previously provided. Temporary impacts are characterized as effects that are reversible and include access, staging, cut, temporary fill (when removed in a timely manner), grading, and temporary clearing and planting efforts.

In addition to the impacts described above and detailed for each site below, the proposed improvements include the installation of substrate such as gravel or cobble in the channel to support the necessary hydrology, substrate, and microhabitat for the Santa Ana sucker, which may result in the wetland areas becoming non-wetlands. However, these wetlands would be relocated on site through the creation of new floodplain benches by excavating the high ground adjacent to the low-flow channel, the creation of new channel lengths, and a greater distribution of hydrology through the site. In addition, fringe wetlands are expected to establish along the channels. With project implementation, the resulting wetlands would be more hydrologically connected through riverine flows and flooding, would be surrounded by more natural topography, would support native emergent and alkali marsh, and would be adjacent to native riparian vegetation, providing a net increase in aquatic resource functions and services at each site.

Table 3.3-19. Impacts on Waters of the U.S. and State

<table>
<thead>
<tr>
<th>Jurisdictional Feature Type</th>
<th>Impacts (acres)</th>
<th>Temporary (acres)&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Permanent (acres)&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anza Creek/Old Ranch Creek Site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-wetland waters</td>
<td>0.38</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>Wetland waters</td>
<td>11.51</td>
<td>0.09</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11.89</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>Lower Hole Creek Site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-wetland waters</td>
<td>1.65</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td>Wetland waters</td>
<td>0.70</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.35</td>
<td>0.11</td>
<td></td>
</tr>
</tbody>
</table>
There is complete overlap between waters of the U.S. and waters of the state.

Total acreage may not sum to the total shown; total is reflective of rounding geographic information system raw data in each category.

Table 3.3-20 shows the acreages of expected impacts on streambed and associated riparian subject to the jurisdiction of CDFW at each restoration site within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance. For the purposes of this analysis, impacts on individual jurisdictional features have been summarized for each restoration site. An impact analysis is not included for each feature. Figures 3.3-8, 3.3-13, and 3.3-18 show the CDFW jurisdictional aquatic features at the respective sites.

Table 3.3-20. Impacts on CDFW Jurisdictional Resources

<table>
<thead>
<tr>
<th>Jurisdictional Feature Type</th>
<th>Temporary (acres)</th>
<th>Permanent (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anza Creek/Old Ranch Creek Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Streambed</td>
<td>4.37</td>
<td>0.08</td>
</tr>
<tr>
<td>Associated Riparian</td>
<td>20.4</td>
<td>0.12</td>
</tr>
<tr>
<td>Total</td>
<td>24.8</td>
<td>0.20</td>
</tr>
<tr>
<td>Lower Hole Creek Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Streambed</td>
<td>1.66</td>
<td>0.11</td>
</tr>
<tr>
<td>Associated Riparian</td>
<td>2.32</td>
<td>0.02</td>
</tr>
<tr>
<td>Total</td>
<td>3.98</td>
<td>0.13</td>
</tr>
<tr>
<td>Hidden Valley Creek Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Streambed</td>
<td>2.88</td>
<td>0.29</td>
</tr>
<tr>
<td>Associated Riparian</td>
<td>19.6</td>
<td>&gt;0.01</td>
</tr>
<tr>
<td>Total</td>
<td>22.5</td>
<td>0.29</td>
</tr>
<tr>
<td>Grand Total</td>
<td>51.2</td>
<td>0.62</td>
</tr>
</tbody>
</table>

1 Total acreage may not sum to the total shown; total is reflective of rounding geographic information system raw data in each category.

Anza Creek/Old Ranch Creek

The proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I at the Anza Creek/Old Ranch Creek sites would result in permanent impacts on 0.03 acre of non-wetland and 0.09 acre of wetland waters, and temporary impacts on 0.38 acre of non-wetland and 11.5 acres of wetland waters of the U.S. and state (Figure 3.3-17 and Table 3.3-19). The proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I at the Anza Creek/Old Ranch Creek sites would result in permanent impacts on 0.08 acre of streambed and 0.12 acre of associated
riparian, and temporary impacts on 4.37 acres of streambed and 20.48 acres of associated riparian subject to CDFW jurisdiction (Figure 3.3-18 and Table 3.3-20).

Permanent impacts would result from the installation of two culverts and a boulder bar in Old Ranch Creek channel and bank stabilization and a boulder bar in Anza Creek. Temporary impacts within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance would result from access, staging, grading, temporary clearing, and planting efforts.

Lower Hole Creek

The proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I at the Lower Hole Creek site would result in permanent impacts on 0.11 acre of non-wetland and >0.01 acre of wetland waters, and temporary impacts on 1.65 acres of non-wetland and 0.70 acre of wetland waters of the U.S. and state (Figure 3.3-12 and Table 3.3-19). The proposed project would result in permanent impacts on 0.11 acre of streambed and 0.02 acre of associated riparian, and temporary impacts on 1.66 acres of streambed and 2.32 acres of associated riparian subject to CDFW jurisdiction (Figure 3.3-13 and Table 3.3-20).

Permanent impacts would result from the installation of bank stabilization and a boulder terrace in Hole Creek and boulder steps in Drainage 1. Temporary impacts within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance would result from access, staging, grading, temporary clearing, and planting efforts. Temporary impacts outside the limits of disturbance would consist of access and staging.

Hidden Valley Creek

The proposed project at the Hidden Valley Creek site would result in permanent impacts on 0.29 acre of wetland waters, and temporary impacts on 0.32 acre of non-wetland and 8.56 acres of wetland waters of the U.S. and state (Figure 3.3-7 and Table 3.3-19). Permanent impacts on non-wetland waters of the U.S. and state are not expected. The proposed project would result in permanent impacts on 0.29 acre of streambed and >0.01 acre of associated riparian, and temporary impacts on 2.88 acres of streambed and 19.6 acres of associated riparian subject to CDFW jurisdiction (Figure 3.3-8 and Table 3.3-20).

Permanent impacts would result from the installation of a culvert at Drainage 1 and the partial fill of Drainage 1. Temporary impacts within the Tributaries Restoration Project and Mitigation Reserve Program Phase I limits of disturbance would result from access, staging, grading, temporary clearing, and planting efforts. Temporary impacts outside the limits of disturbance would consist of access and staging.

Benefits expected from implementation of the proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I to wetland and non-wetland waters of the U.S. and state and CDFW riparian and streambed jurisdictional resources are described below, by site.

Anza Creek/Old Ranch Creek

The Anza Creek/Old Ranch Creek tributaries restoration sites support a variety of wetland conditions ranging in quality from low to moderate. The primary factors adversely affecting existing wetland quality include the presence of invasive species, adjacent land uses, limited surface...
hydrology, and human disturbance. Although the sites have a high diversity of native vegetation communities, including alkali marsh and riparian habitat, they also support several expansive nonnative vegetation communities and invasive species.

The primary invasive species in the jurisdictional features are palms and giant reed, while the scrub habitat contains perennial pepperweed and nonnative grasses. The removal and control of invasive species and ongoing management of the sites would allow for native species establishment and recovery. In addition, human activity in the jurisdictional resources, as well as the buffer and floodplain, degrades conditions as a result of trail creation, trash disposal, vegetation clearing, and human waste. The restoration activities described in Section 2.6 would facilitate improvements to overall site conditions, including wetland and non-wetland, riparian, and streambed conditions.

There are various components of the proposed project at the Anza Creek/Old Ranch Creek sites that would benefit and provide a net increase of USACE/RWQCB jurisdictional wetlands and other waters. The removal of fill material and expansion of the floodplain in the upstream portion of the site and treatment and planting of the alkali meadow in the southeastern portion of the site, along with select grading and hydrology improvements, would result in the creation of additional non-wetland or wetland waters of the U.S. and state subject to USACE/RWQCB jurisdiction. Treatment and revegetation of the degraded scrub habitat would improve the quality and quantity of riparian areas. Removal of the larger invasive species (primarily palms) would also increase quality. The proposed restoration of Anza Creek and Old Ranch Creek would improve stream hydrology and structure in addition to increasing the native vegetation community and jurisdictional acreage to offset impacts.

The CDFW jurisdictional resources would benefit in a similar manner to the waters of the U.S. and state, resulting in a net increase in acreage as well as improvement in the functions and values for fish and wildlife species. In addition, the CDFW riparian resources that extend outside the limits of waters of the U.S. and state would benefit from restoration activities such as removal of invasive species, revegetation of native species, and control of human impacts.

**Lower Hole Creek**

Lower Hole Creek and its associated wetlands are degraded as a result of multiple stressors. One of the primary stressors is human activity in both the buffer and the wetlands, including channel manipulation, substantial trash disposal, vegetation clearing for encampments, and human waste. In addition, the channel is experiencing excess erosion from high flows through the unnamed tributary that enters from the east, resulting in steep channel banks, high scour zones (no understory vegetation), and deposition downstream. The creek is experiencing further stress as a result of invasive species encroachment, with multiple species invading the floodplain including palms, ash, castor bean, and giant reed. The restoration activities described in Section 2.6 would facilitate improvements to wetland/riparian conditions overall and would result in a net increase in wetlands and waters and functions and values for fish and wildlife resources.

There are components of the proposed project within Lower Hole Creek that would benefit and increase USACE/RWQCB jurisdictional wetlands and other waters. Expansion of the floodplain and recontouring of the banks to create benches in the upstream portion of the site would result in increased jurisdictional acreage as well as improved conditions for the existing wetlands that would experience increased structural complexity and hydrological connectivity. In-stream structural enhancements and natural slope stabilization would increase topographic complexity within the existing and expanded channel. Invasive species removal and revegetation would improve wetland
conditions. Revegetation of the upland buffer habitat and exclusion of human visitation would provide protection to the wetland and result in improved wetland buffer acreage.

The CDFW jurisdictional streambed and riparian would benefit in a similar manner as USACE/RWQCB resources. In addition, the CDFW riparian habitat that extends outside the channel and primary floodplain would benefit from restoration activities, in particular control of human use, removal of invasive species, revegetation of native species, and buffer revegetation.

**Hidden Valley Creek**

Much of the Hidden Valley Creek site is CDFW riparian habitat with a few areas also falling under USACE jurisdiction (canal and depressions). The site supports a variety of riparian/wetland conditions ranging from low to moderate quality. The primary stress to the site is associated with invasive species and limited surface hydrology in the canal. Although the site has a high diversity of native species (including Fremont cottonwood/willow forest, mulefat scrub, and willow scrub), there is also a large component of nonnative and invasive species. Previously, the site supported dense thickets of giant reed; however, the area has since recovered as a result of treatment following a 2010 flood. The presence of a perennial pond in the western portion of the site is an indication of potential conditions that could be replicated on the eastern end, which would increase the overall ecological complexity of the site and provide a unique resource. All restoration activities described above would facilitate improvements to overall wetland conditions.

There are select opportunities within the Hidden Valley Creek site to benefit USACE-jurisdictional resources. The improvement to the tributary channel structure and restored hydrology would facilitate improved wetland condition and increased acreage. Within the existing channel, construction methods would be sensitive to the presence of existing resources to limit temporary impacts. Invasive species removal in the riparian habitat and treatment of the grassland habitat would result in buffer acreage. The establishment of an oxbow in the eastern end of the site would increase the overall ecological complexity of the site and provide a unique resource. Of all the tributary restoration sites, the Hidden Valley Creek site has the greatest amount of CDFW jurisdictional resources; in addition, the restoration efforts would produce the greatest improvements. All wetlands and waters would benefit in the same manner as USACE/RWQCB resources. In addition, the CDFW riparian habitat that extends throughout the wetland would benefit from restoration activities, specifically removal of invasive species and revegetation of native species, including riparian and alkali marsh habitat.

**Operational and Maintenance Impacts**

Direct operational impacts on federally protected wetlands and other waters as well as CDFW streambed and riparian resources at the Tributaries Restoration Project and Mitigation Reserve Program Phase I could occur during post-construction restoration activities when maintenance crews are performing invasive species removal, weeding, planting, or other restoration maintenance. Impacts could include inadvertent travel through protected wetlands, other waters, and CDFW jurisdiction that disturbs, crushes, or destroys small segments of those areas. However, it is anticipated that maintenance crews would utilize existing access roads, and no grading or new access roads is expected for maintenance work. Created jurisdictional aquatic resources could also be affected if any newly established perennial water sources become impeded by unanticipated natural storm flow and sedimentation in the restored stream channel or unanticipated reductions in available groundwater sources.
Significance Determination Prior to Mitigation: Potentially significant.

As described above, the proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I may adversely affect wetland and non-wetland waters of the U.S. and state and CDFW jurisdictional resources by direct modification (i.e., restoration and creation) of these habitats. This direct impact would be considered significant under CEQA. With implementation of mitigation measure BIO-28 adverse effects on federally protected wetlands, non-wetland waters, and state waters (riparian and streambed) would result in a net increase in area as well as functions and values within state and federal jurisdiction following restoration activities. Therefore, Impact BIO-3 would be reduced to a less-than-significant level with mitigation incorporated.

Mitigation Measures

Mitigation Measure BIO-28: Obtain Clean Water Act Section 404 and 401 Authorization and California Fish and Game Code Section 1600 et seq. Authorization

The Tributaries Restoration Project and Mitigation Reserve Program Phase I shall require authorization from USACE pursuant to Section 404 of the CWA, the RWQCB pursuant to Section 401 of the CWA and the Porter-Cologne Water Quality Control Act, and from CDFW pursuant to Section 1602 of the CFGC, as a result of temporary and permanent impacts on jurisdictional aquatic resources. Authorizations from these agencies shall be obtained prior to construction. Terms and conditions may include: compensatory mitigation requirements, aquatic life movement requirements, spawning area requirements, migratory bird breeding area requirements, water flow management requirements, 100-year floodplain requirements, soil erosion and sediment control requirements, water quality requirements, and pre-construction notification and coordination requirements.

Level of Significance Following Mitigation: Less than significant.

Expanded Mitigation Reserve Program Phase II

Construction Impacts

As described in Section 3.3.2, the Expanded Mitigation Reserve Program Phase II sites support jurisdictional aquatic resources. This includes waters of the U.S. and state consisting of wetland and non-wetland waters subject to the jurisdiction of USACE and RWQCB under Sections 404 and Section 401 of the CWA, respectively, and CDFW riparian and streambed subject to regulation by CDFW under CFGC Section 1602. Construction-related impacts on waters of the U.S. and state, which would be potentially significant, will be analyzed at a project-specific level when specific details of the projects of the Expanded Mitigation Reserve Program Phase II are available. Anticipated impacts are presented below.

Anza Creek/Old Ranch Creek: Impacts on Jurisdictional Waters and Wetlands and CDFW Jurisdictional Streambed and Associated Riparian

The proposed Expanded Mitigation Reserve Program Phase II at the Anza Creek/Old Ranch Creek sites would result in impacts on waters of the U.S. and state within a broad range of habitats including but not limited to arrow weed thicket, black willow thicket, sandbar willow thicket, alkali marsh, adjacent uplands, and nonnative riparian. The site currently supports jurisdictional alkali meadow habitat at several locations in the outer floodplains that illustrate near-reference conditions for that vegetation community. There are also areas on site where historic alkali meadow
has become degraded by past human use and an influx of nonnative species. Temporary construction impacts are expected to result from access, staging, grading, temporary clearing, and planting efforts both within the Expanded Mitigation Reserve Program Phase II limits of disturbance and on the access roads and staging areas outside the limits of disturbance. Permanent impacts may include establishment of permanent access roads through some portions of the site to facilitate access, maintenance, and surveying/reporting within interior portions.

**Lower Hole Creek**

The proposed Expanded Mitigation Reserve Program Phase II at the Lower Hole Creek site would not result in impacts on waters of the U.S. and state but may affect CDFW jurisdictional riparian areas. Temporary construction impacts may result from access, staging, grading, temporary clearing, and planting efforts both within the Expanded Mitigation Reserve Program Phase II limits of disturbance and on the access roads and staging areas outside the limits of disturbance. Permanent impacts are not expected.

**Hidden Valley Creek**

The proposed Expanded Mitigation Reserve Program Phase II at the Hidden Valley Creek site may result in temporary and permanent impacts on waters of the U.S. and state, and on CDFW streambed, riparian, and floodplain. Temporary construction impacts may result from access, staging, grading, temporary clearing, and planting efforts both within the Expanded Mitigation Reserve Program Phase II limits of disturbance and on the access roads and staging areas outside the limits of disturbance. Permanent impacts may include establishment of permanent access roads through some portions of the site to facilitate access, maintenance, and surveying/reporting.

**Operational and Maintenance Impacts**

Direct operational impacts on protected wetlands, other waters, and CDFW streambed and riparian habitat could occur during post-construction restoration activities when maintenance crews are performing invasive species removal, weeding, planting, or other restoration maintenance and when biologists are performing field analysis related to restoration success criteria within the Expanded Mitigation Reserve Program Phase II limits of disturbance and within the access roads outside the limits of disturbance. Impacts could include inadvertent travel through jurisdictional areas that disturbs, crushes, or destroys small segments of those areas.

**Significance Determination Prior to Mitigation:** Potentially significant.

As described above, the proposed Expanded Mitigation Reserve Program Phase II may adversely affect wetland and non-wetland waters of the U.S. and state and CDFW jurisdictional resources by direct modification (i.e., restoration and creation) of these habitats. This direct impact would be considered significant under CEQA. With implementation of mitigation measure BIO-28 adverse effects on protected wetlands, other waters, and CDFW riparian and streambed would result in a net increase in area as well as functions and values within state and federal jurisdiction following restoration activities; therefore, Impact BIO-3 would be reduced to a less-than-significant level with mitigation incorporated.

**Mitigation Measures**

Implement mitigation measure BIO-28.
Level of Significance Following Mitigation: Less than significant.

Impact BIO-4: Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites (Less than significant with mitigation incorporated)

Tributaries Restoration Project and Mitigation Reserve Program Phase I

Construction Impacts

The Santa Ana River functions as a major regional wildlife movement corridor and breeding ground for many special-status and common aquatic and terrestrial wildlife species. Species that breed during the winter would be affected by temporary loss of breeding habitat. Water diversion and instream habitat enhancement activities including large woody debris placement, channel contouring, water diversion, and other in-water work is expected to temporarily affect movement patterns or displace special-status fish and sensitive semi-aquatic species. Temporary diversion and dewatering activities may limit the ability of Santa Ana sucker, arroyo chub, and sensitive semi-aquatic species such as southwestern pond turtles and gartersnakes to freely pass through the affected reach of the Santa Ana River during construction. Water diversions would be designed to maintain hydrological connectivity; however, temporary alteration of the natural channel would likely change the velocity, volume, and contours of the channel, presenting abnormal channel conditions for aquatic species. Discharges of sediment and other construction-related turbidity, which would be minimized through avoidance measures and permit conditions, may still occur and could also inhibit movement. Interference with the movement of fish and semi-aquatic species would be temporary over the course of the construction, but overall the Tributaries Restoration Project and Mitigation Reserve Program Phase I is expected to have a permanent benefit for species as it would improve aquatic breeding habitat and habitat connectivity and allow for increased aquatic species movement through channel enhancement actions and flow restoration. Nevertheless, aquatic impacts would be potentially significant during construction and for some time after construction and require mitigation.

Riparian and upland areas within the Tributaries Restoration Project and Mitigation Reserve Program Phase I provide somewhat unconstrained habitat for many special-status birds, terrestrial wildlife species, and semi-aquatic species that inhabit, breed, and disperse through the area. Construction work in these areas would temporarily remove available habitat in the region and potentially cause a movement constraint. Construction noise and increased human activity would also affect an area around the limits of disturbance, further reducing available breeding and movement habitat. However, the Tributaries Restoration Project and Mitigation Reserve Program Phase I would temporarily affect a relatively small portion of the overall reach of the Santa Ana River floodplain in the broader region and is limited to discrete locations that do not completely close off an entire reach. Although habitat in the work areas would be temporarily unavailable and would be temporarily reduced in the region during construction, riparian and upland wildlife species would be able to freely pass around the work areas.

Operational and Maintenance Impacts

Following construction, revegetation efforts would likely take several years to become dense and mature, which, until that time, would have limited cover, foraging, breeding, and dispersal functions
for many special-status and common species. Aquatic species would likely not have adequate aquatic vegetation or overhanging bank vegetation for natural life history requirements, including movement and dispersal, until vegetation fills in. Semi-aquatic and terrestrial species would likely have reduced movement activities in the restoration areas until adequate native vegetation cover is present. Similarly, avian species would have less nesting, foraging, and migrating opportunities until the native vegetation has reestablished at sufficient density to provide the necessary functions and values required for breeding and dispersal. In addition, special-status species could be affected by maintenance crews performing invasive removal, weeding, planting, or other restoration maintenance activities and when biologists are performing field analysis related to restoration success criteria. Maintenance is expected to occur over a 5–10 year period and would likely have a greater impact on wildlife species soon after construction and decrease over time as native vegetation matures and limits invasive establishment and the need for intensive maintenance. Nonetheless, operational impacts would be potentially significant and require mitigation.

**Level of Significance Prior to Mitigation:** Potentially significant.

As described above, impacts from the Tributaries Restoration Project and Mitigation Reserve Program Phase I on the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, and the impedance of the use of native wildlife nursery sites, would be considered significant under CEQA.

**Mitigation Measures**

Implement mitigation measures BIO-2 through BIO-9, BIO 11 and BIO-12, BIO-26, and BIO-28.

**Level of Significance Following Mitigation:** Less than significant.

Implementation of mitigation measures BIO-2 through BIO-9, BIO-11 and BIO-12, BIO-26, and BIO-28 would avoid or minimize environmental effects on migratory fish, wildlife species, established wildlife corridors, and native wildlife nursery sites.

Overall, the Tributaries Restoration Project and Mitigation Reserve Program Phase I would increase the quantity and quality of aquatic habitat, native riparian habitat, native scrub habitat, and grassland habitat, thereby increasing the functions and values related to breeding and connectivity for wildlife movement through the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites and within the larger Santa Ana River floodplain. Considering the benefits of the proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I on the movement of native fishes and wildlife, migratory wildlife corridors, and nursery sites relative to temporary impacts resulting from construction activities and habitat modifications, and with implementation of mitigation measures, interference with the movement of native resident fish or wildlife species or with established native resident or migratory wildlife corridors or impedance of the use of native wildlife nursery sites would be less than significant.

**Expanded Mitigation Reserve Program Phase II**

**Construction Impacts**

As with the Tributary Restoration Project, riparian and upland areas within the Expanded Mitigation Reserve Program Phase II provide relatively unconstrained habitat for many special-status birds, terrestrial wildlife species, and semi-aquatic species that inhabit, breed, and disperse through the area. Construction work associated with restoration activities in these areas would temporarily
remove available habitat in the region and potentially cause a movement constraint. Aquatic habitats would also be affected where restoration efforts are required to remove nonnative and invasive vegetation. Construction noise and increased human activity would also affect an area around the limits of disturbance, further reducing available breeding and movement habitat. Although habitat in the work areas would be temporarily unavailable and overall habitat would be temporarily reduced in the region, riparian and upland wildlife species would be able to freely pass around the work areas. It is also anticipated that restoration efforts would not be required over the entire Expanded Mitigation Reserve Program Phase II area, and as such, much of the area within the Expanded Mitigation Reserve Program Phase II would be available for breeding and dispersal, albeit in reduced quantities during restoration work.

**Operational and Maintenance Impacts**

Following construction, natural revegetation would likely take several years to become dense and mature, which, until that time, would offer limited cover, foraging, and breeding functions for many special-status and common species. Semi-aquatic and terrestrial species would likely have reduced movement activities in the restoration areas until adequate native vegetation cover is present. Similarly, avian species would have less nesting, foraging, and migrating opportunities until the native vegetation has reestablished at sufficient density to provide the necessary functions and values required for dispersal and breeding activities. In addition, activities of all special-status species could be affected by maintenance crews performing invasive removal, weeding, planting, or other restoration maintenance and when biologists are performing field analysis related to restoration success criteria. These impacts would be potentially significant and require mitigation.

**Significance Determination Prior Mitigation:** Potentially significant.

As described above, impacts from the Expanded Mitigation Reserve Program Phase II on the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors and the impedance of the use of native wildlife nursery sites could be considered significant under CEQA.

**Mitigation Measures**

Implement mitigation measure BIO-19.

**Level of Significance Following Mitigation:** Less than significant.

Implementation of mitigation measure BIO-19 would avoid or minimize environmental effects on migratory fish, wildlife species, established wildlife corridors, and native wildlife nursery sites.

Overall, the Expanded Mitigation Reserve Program Phase II would increase the quantity and quality of aquatic habitat, native riparian habitat, native scrub habitat, and native grassland habitat, thereby increasing the functions and values related to breeding and connectivity for wildlife movement through the Expanded Mitigation Reserve Program Phase II sites and within the larger Santa Ana River floodplain. Considering the benefits of the proposed Expanded Mitigation Reserve Program Phase II on the movement of native fishes and wildlife, migratory wildlife corridors, and nursery sites relative to temporary impacts resulting from construction activities and habitat modifications, and with implementation of mitigation measures, interference with the movement of native resident fish or wildlife species or with established native resident or migratory wildlife corridors or impedance of the use of native wildlife nursery sites would be less than significant.
Impact BIO-5: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (Less-than-significant level with mitigation incorporated)

Tributaries Restoration Project and Mitigation Reserve Program Phase I

The Tributaries Restoration Project and Mitigation Reserve Program Phase I sites are within the boundaries of the WRCMSHCP and portions are within the SKR HCP. The proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I is intended to align with the provisions, goals, and objectives of these HCPs as well as the draft Upper Santa Ana River HCP.

CDFW issued Natural Community Conservation Plan Approval and Take Authorization for the WRCMSHCP per Section 2800, et seq., of the CFGC on June 22, 2004. The WRCMSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and provides for the incidental take of Covered Species in association with activities covered under the permit. However, Valley District is not a Permittee under the WRCMSHCP and the proposed project is not a Covered Activity; as a result, the proposed project would not be processed through the WRCMSHCP for Covered Species but rather would obtain take coverage for threatened, endangered, and/or candidate species under ESA and/or CESA. As discussed below, the project goals and objectives would be consistent with WRCMSHCP policies and guidelines including: Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (WRCMSHCP Section 6.1.2), Protection of Narrow Endemic Plant Species (WRCMSHCP Section 6.1.3), Additional Survey Needs and procedures (WRCMSHCP section 6.3.2), and Urban/Wildland Interface Guidelines (WRCMSHCP section 6.1.4).

Ten local public agencies of the Santa Ana River Watershed, including Valley District, USFWS, CDFW, and stakeholder organizations are collaborating to complete a draft Upper Santa Ana River HCP and associated watershed-wide conservation strategy for aquatic dependent resources. Once approved and permitted, the Upper SAR HCP would enable the local authorities to maintain, expand, and upgrade water supply infrastructure while providing a framework for conserving and protecting the river and associated riparian habitat that supports a diverse group of plants and animals that have become exceedingly rare in arid Southern California. The Upper SAR HCP would streamline the incidental take permitting process for 22 species covered under the plan, which are found in the river and adjacent upland habitat, including Santa Ana sucker, San Bernardino kangaroo rat, and least Bell's vireo. Estimated completion for the Upper Santa Ana River HCP is 2019.

Because the goals and objectives of the Tributaries Restoration Project and Mitigation Reserve Program Phase I are to provide long-term benefits to the special-status species and habitats covered by these HCPs, the proposed project would be consistent with these adopted and proposed plans. The Tributaries Restoration Project and Mitigation Reserve Program Phase I is expected to provide a net improvement to stream, wetland, riparian, scrub, and grassland habitat quality, thereby benefitting sensitive and listed species and their habitats overall, most of which are species covered by these HCPs.

Construction Impacts

Construction activities could result in temporary direct and indirect impacts on special-status species and their habitats, as described in Impact BIO-1 through Impact BIO-4. This includes species covered by the WRCMSHCP with potential to occur in the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites (American bittern, bald eagle, black-crowned night-heron, black swift, Cooper’s hawk, double-crested cormorant, downy woodpecker, ferruginous hawk,
grasshopper sparrow, great blue heron, horned lark, least Bell’s vireo, Lincoln’s sparrow, MacGillivray’s warbler, merlin, Nashville warbler, northern harrier, osprey, prairie falcon, sharp-shinned hawk, Southern California rufous-crowned sparrow, tree swallow, turkey vulture, white-faced ibis, white-tailed kite, Wilson’s warbler, yellow-breasted chat, yellow warbler, arroyo chub, Santa Ana sucker, southwestern pond turtle, coast horned lizard, coastal whiptail, granite spiny lizard, bobcat, coyote, Duzlura kangaroo rat, long-tailed weasel, Los Angeles pocket mouse, mountain lion, northwestern San Diego pocket mouse, San Diego black-tailed jackrabbit, San Diego desert woodrat, SKR, Santa Ana River woolly-star, smooth tarplant, Brand’s phacelia, California black walnut, Coulter’s goldfields, many-stemmed dudleya, Parry’s spineflower, Plummer’s mariposa lily, and slender-horned spine flower). However, the proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I would implement mitigation measures BIO-2 through BIO-9, and BIO-11 through BIO-12 and would adhere to the requirements of the City of Riverside General Plan (Policies OS-5, OS-6, and OS-7), the City of Jurupa Valley General Plan (Policies COS-1, COS-2, COS-3), and the Riverside County General Plan (Policies OS 3, OS 5, OS 6, OS 9, OS 17, OS 18, and JURAP 7).

The proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I would also address biological issues and considerations of the WRCMSHCP area (for Criteria Cells 621 and 617, and Public/Quasi-Public Conserved Lands), and adhere to mitigation fee requirements of the SKR HCP and Riverside County Ordinance No. 663 (SKR Mitigation Fee Ordinance). With implementation of mitigation measures BIO-2 through BIO-9, BIO-11 and BIO-12, BIO-26, and BIO-28, the Tributaries Restoration Project and Mitigation Reserve Program Phase I would not conflict with the provision of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan because the Tributaries Restoration Project and Mitigation Reserve Program Phase I would not result in permanent loss of habitat and would increase the quantity and quality of native vegetation and aquatic resources that would benefit each of the species covered by these plans.

Operational and Maintenance Impacts

Operations could result direct and indirect impacts on special-status species and their habitats, as described in Impact BIO-1 through Impact BIO-4.

Significance Determination Prior to Mitigation: Potentially significant.

Mitigation Measures

Implementation of mitigation measures BIO-2 through BIO-9, BIO-11 and BIO-12, BIO-26, and BIO-28, and compliance with policies of the City of Riverside General Plan, City of Jurupa Valley General Plan, and Riverside County General Plan would ensure the proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I aligns with the goals of, and is consistent with, the WRCMSHCP and SKR HCP. The proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I would also adhere to applicable mitigation requirements of the SKR HCP and Riverside County Ordinance No. 663 (SKR Mitigation Fee Ordinance) to reduce impacts from construction activities to a less-than-significant level.

In summary, the proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I is intended to align with the provisions, goals, and objectives of the Upper SAR HCP and with adopted conservation plans, the WRCMSHCP and SKR HCP. In general, the proposed Tributaries Restoration Project and Mitigation Reserve Program Phase I would be consistent with these adopted
plans and is expected to provide a net improvement to stream, wetland, riparian, scrub, and grassland habitat quality, thereby improving WRCMSHCP Public/Quasi-Public Conserved Lands within the Tributaries Restoration Project and Mitigation Reserve Program Phase I area, improving WRCMSHCP cores and linkages for WRCMSHCP and SKR planning species, and benefitting sensitive species and their habitats overall. However, construction activities could result in potentially significant direct and indirect impacts on listed species and their habitat, including those covered by the SKR HCP and the WRCMSHCP with potential to occur in the Tributaries Restoration Project and Mitigation Reserve Program Phase I sites. With implementation of mitigation measure BIO-9, impacts on an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan are anticipated to be reduced to less than significant; therefore, Impact BIO-5 would be reduced to a less-than-significant level with mitigation incorporated.

**Level of Significance Following Mitigation:** Less than significant.

**Expanded Mitigation Reserve Program Phase II**

The Expanded Mitigation Reserve Program Phase II sites are within the boundaries of the WRCMSHCP and portions are within the SKR HCP. The proposed Expanded Mitigation Reserve Program Phase II is intended to align with the provisions, goals, and objectives of the Upper SAR HCP (in draft) and also align with adopted conservation plans, including the WRCMSHCP and SKR HCP. As such, the proposed Expanded Mitigation Reserve Program Phase II would be consistent with these adopted plans. Also, as described above, the Expanded Mitigation Reserve Program Phase II project sites are expected to provide a net improvement to stream, wetland, riparian, scrub, and grassland habitat quality, thereby benefitting sensitive and listed species and their habitats overall.

**Construction Impacts**

Construction activities could result in direct and indirect impacts on listed species and their habitat, as described in Impact BIO-1 through Impact BIO-4. This includes species covered by the SKR HCP with potential to occur in the Expanded Mitigation Reserve Program Phase II sites (SKR) and species covered by the WRCMSHCP with potential to occur in the Expanded Mitigation Reserve Program Phase II project sites (American bittern, bald eagle, black-crowned night-heron, black swift, Cooper’s hawk, double-crested cormorant, downy woodpecker, ferruginous hawk, grasshopper sparrow, great blue heron, horned lark, least Bell’s vireo, Lincoln’s sparrow, MacGillivray’s warbler, merlin, Nashville warbler, northern harrier, osprey, prairie falcon, sharp-shinned hawk, Southern California rufous-crowned sparrow, tree swallow, turkey vulture, white-faced ibis, white-tailed kite, Wilson’s warbler, yellow-breasted chat, yellow warbler, arroyo chub, Santa Ana sucker, southwestern pond turtle, coast horned lizard, coastal whiptail, granite spiny lizard, bobcat, coyote, Dulzura kangaroo rat, long-tailed weasel, Los Angeles pocket mouse, mountain lion, southwestern San Diego pocket mouse, San Diego black-tailed jackrabbit, San Diego desert woodrat, SKR, Santa Ana River woolly-star, smooth tarplant, Brand’s phacelia, California black walnut, Coulter’s goldfields, many-stemmed dudleya, Parry’s spineflower, Plummer’s mariposa lily, and slender-horned spine flower). However, the proposed Expanded Mitigation Reserve Program Phase II would implement mitigation measures BIO-1 through BIO-9, and BIO-11 through BIO-12, described above, as well as adhere to the requirements of the City of Riverside General Plan (Policies OS-5, OS-6, and OS-7), the City of Jurupa Valley General Plan (Policies COS-1, COS-2, COS-3), and the Riverside County General Plan (Policies OS 3, OS 5, OS 6, OS 9, OS 17, OS 18, and JURAP 7).
The proposed Expanded Mitigation Reserve Program Phase II would adhere to the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (WRCMSHCP Section 6.1.2), Protection of Narrow Endemic Plant Species (WRCMSHCP Section 6.1.3), Additional Survey Needs and Procedures (WRCMSHCP Section 6.3.2), and Urban/Wildland Interface Guidelines (WRCMSHCP Section 6.1.4) and would also be consistent with biological issues and considerations for Criteria Cells 621 and 617, and Public/Quasi-Public Conserved Lands, and would adhere to mitigation fee requirements of the SKR HCP and Riverside County Ordinance No. 663 (SKR Mitigation Fee Ordinance). With the implementation of mitigation measure BIO-9, the Expanded Mitigation Reserve Program Phase II would not conflict with the provision of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan, and there would be a less-than-significant impact.

**Operational and Maintenance Impacts**

Operations could result in direct and indirect impacts on special-status species and their habitats covered by the WRCMSHCP and SKR HCP, as described in Impact BIO-1 through Impact BIO-4.

**Significance Determination Prior to Mitigation:** Potentially significant.

**Mitigation Measures**

Implementation of mitigation measures BIO-18 through BIO-23, and BIO-25, and compliance with policies of the City of Riverside General Plan, City of Jurupa Valley General Plan, and Riverside County General Plan described above, would ensure the proposed Expanded Mitigation Reserve Program Phase II aligns with the goals of the WRCMSHCP and SKR HCP for the region. The Expanded Mitigation Reserve Program Phase II project would adhere to mitigation requirements of the SKR HCP and Riverside County Ordinance No. 663 (SKR Mitigation Fee Ordinance) to reduce impacts of construction activities to a less-than-significant level.

In summary, the proposed Expanded Mitigation Reserve Program Phase II is intended to align with the provisions, goals, and objectives of the Upper SAR HCP and with adopted conservation plans, the WRCMSHCP and SKR HCP. In general, the proposed Expanded Mitigation Reserve Program Phase II would be consistent with these adopted plans and is expected to provide a net improvement to stream, wetland, riparian, scrub, and grassland habitat quality, thereby improving WRCMSHCP Public/Quasi-Public Conserved Lands within the Expanded Mitigation Reserve Program Phase II limits of disturbance, and the WRCMSHCP cores and linkages for WRCMSHCP and SKR planning species; the Expanded Mitigation Reserve Program Phase II would benefit sensitive species and their habitats overall. With implementation of mitigation measure BIO-9, impacts on an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan are anticipated to be reduced to less-than-significant level.

**Level of Significance Following Mitigation:** Less than significant.