Draft

SANTA ANA RIVER CONSERVATION AND CONJUNCTIVE USE PROJECT

Environmental Impact Report

Prepared for
Inland Empire Utilities Agency

November 2018

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EXECUTIVE SUMMARY

ES.1 Introduction

The proposed Project includes the implementation of five specific projects that are located within the Santa Ana River Watershed. The five specific projects would assist in achieving the objectives of the Santa Ana River Conservation and Conjunctive Use Program (SARCCUP).

ES.2 Background

SARCCUP is a watershed-scale collaborative program designed to improve the Santa Ana River watershed's water supply resiliency and reliability by implementing various watershed-wide projects (**Table ES-1**) that would increase available dry-year yield (DYY) from local groundwater basins. As a watershed-wide cooperative venture, SARCCUP will allow the regional water managers to combine groundwater resources and water conveyance infrastructure for the benefit of the watershed as a whole. SARCCUP consists of the following main program elements:

1. Conjunctive Use Program[1] for the Santa Ana Watershed;
2. Invasive weed removal and habitat creation/restoration for the Santa Ana sucker (*Catostomus santaanae*), a native fish species listed as threatened under the federal Endangered Species Act; and
3. Water use efficiency and water conservation measures.

Regional water managers would utilize existing and new facilities to convey additional surface water supplies to groundwater banking facilities, recharging the underlying groundwater basins throughout the watershed. Conjunctive use of the banked groundwater would occur collaboratively between SARCCUP members.

[1] Conjunctive Use Program refers to the management of groundwater resources to enhance storage and water supplies through enhanced recharge and extraction management.

TABLE ES-1
SARCCUP DYY

Project Name	Program Element	Location	Water Supply or Storage (AF)	Capacity (AFY)	Dry Year Supply or Yield ** (AFY)	Annual Demand Reduction (AFY)
Santa Ana Sucker Habitat Restoration and Creation	Habitat; Water Conservation	Santa Ana River, Riverside County	Not Applicable	Not Applicable	Not Applicable	800***
Arundo Removal	Habitat; Water Conservation	Prado Basin and Santa Ana River, Riverside County	Not Applicable	Not Applicable	Not Applicable	12,800***
Water Use Efficiency and Conservation	Water Conservation	Santa Ana River Watershed	Not Applicable	Not Applicable	Not Applicable	2,400***
Chino Basin Bank	Conjunctive Use Program	Chino Groundwater Basin and Cucamonga Sub-basin; San Bernardino County	0-50,000	Up to 32,000	Up to 16,667	Not Applicable
San Bernardino Basin Bank	Conjunctive Use Program	Bunker Hill Groundwater Basin; San Bernardino County	64,000	25,000	21,333	Not Applicable
Elsinore Basin Bank	Conjunctive Use Program	Bedford-Coldwater Sub-basin within Elsinore Groundwater Basin; Riverside County	0-4,500	Up to 1,500*	Up to 1,500	Not Applicable
Riverside-Arlington Basin Bank	Conjunctive Use Program	Riverside-Arlington Groundwater Basin; Riverside County	6,000-25,000	Up to 8,500	Up to 8,500	Not Applicable
Orange County Basin Bank	Conjunctive Use Program	Orange County Groundwater Basin	36,000-50,000	Up to 12,500*	Up to 16,667	Not Applicable
San Jacinto Basin Bank	Conjunctive Use Program	San Jacinto Groundwater Basin; Riverside County	19,500	6,500	6,500	Not Applicable
Central Valley Basin Bank(1)	Conjunctive Use Program	Central Valley	0-15,000	Up to 15,000	Up to 15,000	Not Applicable
TOTAL			**144,000-180,000**	**Up to 101,000**	**43,000-60,000**	**16,000**

Source: SAWPA 2018; DSM Table 4
* Elsinore, Riverside Arlington, and Orange County DYY supply shown here is assumed.
** SARCCUP will be operated to produce approximately 60,000 AFY of dry-year supply. The annual quantity of water actually produced under SARCCUP will be managed to drain the groundwater bank in three years, but operational and capacity limitations could extend the time needed to drain the bank.
*** Santa Ana Sucker Habitat Restoration and Creation, Arundo Removal, and Water Use Efficiency reduce existing consumption resulting in availability of this water supply for other uses.
(1) SARCCUP would secure a groundwater storage and recovery agreement with an existing Central Valley Basin Bank to supplement DYY supply within the Santa Ana River Watershed. If pursued, the water would be conveyed into the Watershed by existing facilities similar to those used to transport water to State Water Project Contractors along the California Aqueduct. The groundwater storage, capacity and DYY supply shown here is assumed. If deemed necessary, a separate CEQA process will be completed at such time prior to implementing this program element.

The program was created to ensure sustainability of the region's groundwater supplies. Partnering agencies would create a network of conveyance facilities designed to support a cooperative, inter-agency water management program. Partnering agencies include: Eastern Municipal Water District (EMWD), Inland Empire Utilities Agency (IEUA), Orange County Water District

(OCWD), San Bernardino Valley Municipal Water District (SBVMWD), and Western Municipal Water District (WMWD) and the Santa Ana Watershed Project Authority (SAWPA), a joint-powers agency comprised of partner agencies EMWD, IEUA, OCWD, SBVMWD, and WMWD. Additionally, SARCCUP partners with Orange County Coastkeeper (OCCK), a 501(c)(3) nonprofit organization.

After program implementation, SARCCUP would provide approximately 60,000 AFY (Table ES-1) in DYY during dry years, estimated to occur three out of every 10 years. Water purchased for storage in the SARCCUP facilities would include water purchased by the partner agencies collectively and individually, as well as transfers between the agencies. Additionally, SARCCUP would remove up to 640 acres of the invasive plant species *Arundo donax*, to create 3.5 miles (18,250 linear feet) of restored in-stream habitat and 40.5 acres of restored riparian habitat along the Santa Ana River for Santa Ana sucker (*Catostomus santaanae*), a federally protected species under the Endangered Species Act (ESA).

SARCCUP would initiate additional water conversation measures throughout the Santa Ana Watershed such as conservation-based rate structures and Smartscape; an educational, outreach, training and communication service that provides support in the design, installation and maintenance of drought tolerant landscapes. It is estimated that up to 2,400 AFY of water supply can be provided by implementing these programs.

ES.3 Project Objectives

The partner agencies currently rely on water imported from the Sacramento-San Joaquin Bay Delta (Delta) and the Colorado River Aqueduct (CRA) to meet demands within their service areas. Currently, the agencies rely on imported water at the following percentages: IEUA – 25 percent; EMWD – up to 75 percent; SBVMWD – 25 percent; WMWD – 25 percent; OCWD – 15 to 30 percent. The curtailment of imported supplies from the Delta due to natural or manmade interruptions has the potential to impact water supply reliability in the Santa Ana River watershed. The snowpack in the Sierra Mountains, water levels in Lake Mead, and groundwater storage levels throughout California have recently experienced historic lows.

SARCCUP would increase DYY from local groundwater basins in the watershed to offset future reductions in water supply, whether due to climate change or natural or manmade supply cutbacks.

SARCCUP activities support the goals of the One Water One Watershed 2.0 Plan (2014), which is the Santa Ana River Watershed's Integrated Regional Watershed Management Plan (IRWMP).

For a resilient water supply and use in the watershed, a balance is also needed to improve native species' population and habitat in the Santa Ana River. Invasive plants such as *Arundo donax* use significantly more water than native plant species and have aggressively altered the habitat for endemic fish species, such as the Santa Ana Sucker, by choking out conditions for spawning, foraging, and refugia. Through SARCCUP's habitat improvements element, the Santa Ana sucker's habitat will more than double and the remaining *Arundo donax* in the Santa Ana River will be removed.

> *SARCCUP would reduce water demand through removal of Arundo donax, a water-intensive, non-native plant within the Santa Ana River Watershed.*
>
> *SARCCUP would enhance the watershed environment through restoration of existing riparian habitat and creating new habitat for a federally listed native freshwater fish species, the Santa Ana sucker (Catostomus santaanae). This will also support and facilitate obtaining permits from the state and federal wildlife agencies for water supply projects along the Santa Ana River.*

ES.4 Project Description

ES 4.1 Introduction

This Draft EIR provides an assessment of impacts for facilities and activities associated with implementing the following projects designed to facilitate SARCCUP (collectively, proposed Project):

- Chino Basin Production Wells, Refurbishment and Treatment System
- Arlington Production Wells and Pipeline
- Cannon Pump Station
- ID-4 Colorado River Aqueduct (CRA) Crossing Refurbishment
- Santa Ana River Arundo Removal

Other projects planned for implementation to support SARCCUP would undergo or have undergone separate CEQA compliance documentation and are described in the Cumulative Impacts analysis in this EIR.

Proposed Project activities include construction of new groundwater production wells, well refurbishment and installation of groundwater treatment systems within the Chino Basin in the City of Montclair and City of Jurupa Valley; the construction of extraction wells, pipelines, pump stations, and ancillary facilities in the City of Riverside; pipeline refurbishment in unincorporated Riverside County; and invasive weed and non-native species removal in the Santa Ana River. These projects would be implemented by three of the five partner agencies: IEUA, WMWD, and OCWD.

ES 4.2 Project Location

The proposed Project would be implemented within the service areas of IEUA (Chino Basin) and WMWD (Riverside-Arlington Basin) and along 16 miles of the Santa Ana River and tributaries. These proposed Project areas are located in San Bernardino and Riverside counties.

ES 4.3 Project Characteristics

The IEUA, in conjunction with WMWD and OCWD, is preparing this EIR to assess the environmental impacts associated with construction of the following SARCCUP connected projects: Chino Basin Production Wells, Refurbishment and Treatment System, Arlington Production wells and Pipeline, Cannon Pump Station, ID-4 Colorado River Aqueduct (CRA) Crossing Refurbishment, and Santa Ana River Arundo Removal.

Chino Basin Production Wells, Refurbishment and Treatment System

IEUA-member agency Monte Vista Water District (MVWD) will design and construct a new treatment system for an existing groundwater well, number 34, to extract approximately 3,000 AFY from the Chino Basin. Well 34 is located within the City of Montclair, in the County of San Bernardino. This project supports the SARCCUP conjunctive use between the partnering agencies. This component will also include the construction of a new groundwater production well and treatment system expansion at an existing facility to extract up to 4,700 AFY from the Chino Basin in the City of Jurupa Valley, in the County of Riverside. Total groundwater production from the Chino Basin Production Wells, Refurbishment and Treatment System facilities will be approximately 4,700 AFY.

Arlington Production Wells and Pipeline

WMWD would construct two additional production wells and extend the conveyance pipeline in connection with the existing Arlington Desalter facility. This project supports the SARCCUP conjunctive use between the partnering agencies within the Riverside-Arlington Basin. There are two alternatives for the location of the wells and the conveyance pipeline.

Alternative 1

For one alternative location, Well AD-6 would be located at the intersection of Magnolia Avenue and Jackson Street in the City of Riverside. Well AD-6 would be implemented within a grass field adjacent to the Sherman Indian Museum. Well AD-7 would be located at the intersection of Magnolia Avenue and Adams Street in the City of Riverside within a grassy area adjacent to CVS Pharmacy. The new pipeline would start at Well AD-7 and run underground west along Magnolia Avenue, connect to Well AD-6 and continue to a point just beyond La Sierra Avenue within the public right-of-way (ROW) to the existing Arlington Desalter facility.

Alternative 2

For the other alternative location, Well AD-6 would be located off Jackson Street in the City of Riverside along a drainage area. The well site is surrounded by residential development. Well AD-7 would be located at the intersection of Auto Center Drive and Motor Circle within an automobile park. The new pipeline would start at Well AD-7 and run underground along Auto

Center Drive, connect to Well AD-6 and continue north on Adams Street, west on Indiana Avenue to Fillmore Street within the public ROW to the existing Arlington Desalter facility.

Cannon Pump Station

WMWD will design and construct a new interconnection pipeline and corresponding pump station to deliver potable water from Riverside-Bunker Hill basin to the WMWD service area. The new pump station, Cannon Pump Station will be designed to move approximately 10 cfs from the Riverside and/or Bunker Hill groundwater basins into the WMWD service area. This project supports the SARCCUP conjunctive use between the partnering agencies within the Riverside-Bunker Hill Basin.

Additionally, WMWD will relocate the existing Crest Booster Station and associated pipelines in the City of Riverside. Both the Cannon Pump Station and the relocated Crest Booster Station and associated facilities will be located near the intersection of Alessandro Boulevard and Overlook Parkway within an undeveloped vegetated area (Figure 3-4). Access to the two proposed facilities would be provided by a shared driveway located off of Caulfield Court cul-de-sac.

ID-4 Colorado River Aqueduct Crossing Refurbishment

WMWD owns and operates service connection ID-4, a non-potable water supply, supplying approximately 1,000 AFY of water to agricultural and irrigation customers within the Gavilan Plateau east of Lake Mathews. The pipeline connecting to ID-4 crosses over the CRA and is prone to deterioration. WMWD would implement one of two refurbishment alternatives to ensure the ID-4 Crossing pipe, located at the existing CRA intake facility is protected. The existing ID-4 Crossing pipe/CRA intake facility is located in unincorporated Riverside County at the foot of the CRA, stemming from Lake Matthews, approximately 600 feet north of the intersection of Kirkpatrick Road and Cajalco Road.

Alternative 1

Protect the existing ID-4 pipe crossing by adding a split casing and sump tank – WMWD would implement a lightweight split casing that covers the ID-4 crossing over the CRA to direct minor or moderate leaks to the proposed sump, a fiberglass-reinforced plastic (FRP) tank located at the existing facility as shown on.

Alternative 2

Reinforce the existing ID-4 pipe crossing with fiberglass wrapping and HDPE, or CIPP lining – WMWD would reinforce the crossing pipe with fiberglass material outside and with flexible high-density polyethylene (HDPE) or Cured-in-Place Pipe (CIPP) inside. The pipe would be triple layered including its original steel pipe.

Santa Ana River Arundo Removal

Approximately 640 acres of arundo would be removed along the Santa Ana River and its tributaries. The arundo removal project would occur at locations along the Santa Ana River between Prado Basin and the Interstate 10 crossing in San Bernardino. Some smaller areas of

Arundo to be removed, generally 5 acres or less are located along the Santa Ana River or its tributaries downstream of Interstate 10. Arundo removal includes eradication of arundo and other invasive exotic plants, including tamarisk (*Tamarix spp*.); perennial pepperweed (*Lepidium latifolium*); tree of heaven (*Ailanthus altissima*); castor bean (*Ricinus communis*); various palms, (*Phoenix canariensis*) and (*Washingtonia robusta*); pampasgrass (*Cortaderia selloana*); and others.

Arundo removal on the Santa Ana River would start with biomass reduction and removal. The canes would be chipped in place, where possible, to pieces smaller than 3 inches. The chips make good mulch and are too small to sprout. The roots would be left in place to avoid the major excavation that would be required to remove them. A monitoring and maintenance program would be developed by the partnering agencies post removal to ensure continued eradication. New growth would be treated with a U.S. Environmental Protection Agency (EPA) aquatically approved herbicide. Over years of re-treatments, the huge root masses would eventually dry out and be rendered unable to support new plant growth. As re-sprouting of invasives diminishes and giant reed eradication is approached in an area, the need for riparian re-vegetation would be assessed. It is recommended that only local and limited re-vegetation efforts be implemented as dictated by special needs, such as erosion control and native riparian establishment. Monitoring criteria would be established in order to quantify the recovery of the riparian habitat. GIS mapping would be utilized to display target restoration and recovery areas. In areas where natural succession is not establishing native vegetation, restoration activities would occur, such as active planting and seeding to establish a fully functional native riparian habitat.

The river dynamics have led to the expansion of the riparian forest into areas released from competition with invasives. For example, along San Timoteo Creek, removal efforts began in 1997 and eventually 230 acres of giant reed were removed. Today, more than 70 percent of those acres support riparian growth without re-vegetation efforts. On the Santa Ana River main stem where areas greater than 5 acres are covered 100 percent in giant reed, it may be beneficial to replant thickets of native riparian trees to aid in faster natural colonization. However, care must be taken as to the location and timing of such efforts or the re-vegetation and eradication efforts could conflict.

ES 4.4 Project Implementation

Construction Methods

The following describes the activities and methods required to build the various types of water facilities for the Project.

Groundwater Wells and Treatment System

Construction of the groundwater production wells would be accomplished by using reverse-circulation or mud rotary methods and would require the following equipment: one drill rig, two pipe trucks, one trailer-mounted shaker unit, one to three above ground water storage tanks, two standard roll-off bins, and one water truck. Well construction requires drilling activities to occur 24 hours per day, seven days per week. Where sensitive noise receptors may be affected, temporary construction noise barriers would be installed as needed to adhere to local noise

ordinances. During construction of the wells the exhaust from the drill rigs would be oriented away from residences, and work areas would be defined to mitigate noise and construction hazards. Drill crews and consultants would address any members of the public before the public would reach a hazardous area.

The well boreholes would be logged by an on-site geologist and subject to sampling and testing. A downhole geophysical survey would be performed in the deeper open boreholes to further characterize stratigraphy and identify target recharge zones.

After each well is drilled, a pump test would be conducted followed by monitoring of the water level recovery. Water levels would be monitored before, during, and after the pump test. Groundwater samples would be collected during the aquifer test as well.

The well drilling area would be approximately 100 feet by 100 feet with each well requiring about one to four weeks to develop. Wells constructed in public rights-of-way would be typically completed with flush mount traffic boxes which would protrude about 1 to 3 inches above surrounding grade to ensure rainwater does not flood into the well. Wells constructed on property owned by one of the partner agencies would typically be constructed with above ground completions extending about 2 to 3 feet above surrounding grade with 4 traffic bollards emplaced around the wellhead for safety.

Conveyance, Pump Stations and Other Ancillary Facilities

SARCCUP projects require the construction of water distribution pipelines to either bring water to recharge facilities or deliver water from extraction facilities to water supply distribution systems. Pipeline construction would primarily occur within the right-of-way of existing roadways and would require temporary construction easements. Typically, construction easements range from 40 to 100 feet wide, depending on location and requirements for material laydown/storage areas and staging areas. Work within the public road rights-of-way could require closure of traffic lanes. Construction would be staged to affect no more than two lanes at a time, or to allow for traffic flow to continue in both directions, if applicable, along any roadway segment.

Separate staging areas may be located at recharge facilities or other properties owned by one of the partner agencies. Pipelines would be constructed using open trench methods, requiring the use of trucks, backhoes/excavators, cranes, welding materials, shoring, and other support equipment. Excavations for pipelines are anticipated to range from five feet to ten feet and up to 15 feet deep for pipelines of 36 inches in diameter. The excavation footprint would be smaller for pipelines of small diameter. Installation of pipelines is estimated to be between 120 linear feet to 200 linear feet per day.

Other methods, such as pipe-jacking/tunneling methods, could be used to avoid surface features such as major roadway intersections, Waters of the United States, or sensitive habitat areas. Jacking is an operation in which the soil ahead of a steel casing is excavated and brought out through the steel casing barrel while the casing is pushed forward by a horizontal hydraulic jack

placed at the rear of a jacking pit. The locations for use of pipe-jacking/tunneling methods would be determined during the design stage.

Arundo Removal

Several techniques and types of tools and equipment would be used to remove giant reed including: removal by hand using loppers, chainsaws, brush cutters, tractor-mounted mulching mowers, arm-mounted tractor/cutter and other approved power equipment. Spraying with an herbicide approved for use in the vicinity of aquatic environments may also be utilized. Care is taken to minimize impacts to native habitat that could result from the transport of personnel and equipment conducting removal activities. Where removal is done by hand, stockpile areas are established in order to chip the stalks after surgical removal. A biologist or other approved specialist supervises removal from sensitive habitat. Small piles of arundo cane no higher than 3 feet can be left in areas where access is poor as long as the piles are above the high-water line and dried. In most areas the material is chipped and scattered on site to decompose and used as mulch.

The methods used for treating giant reed stands are different, depending on the makeup of the stands. Pure stands of invasive plants containing only non-native plants typically utilize tractor-mounted mulching mowers. Impacts to any associated native plants are avoided. Mixed stands of invasive plants occur in or among willows (*Salix* ssp.), cottonwoods (*Populus fremontii*), mulefat (*Baccharis salicifolia*), and other native riparian vegetation. No removal or spraying of native vegetation is allowed. All native plants and animals would be protected from damage by equipment, personnel, and all other giant reed control activities. Native shrubs and trees may be trimmed to provide access and to protect them from incidental spraying with herbicide but only under close supervision by a qualified biologist or specialist. Hand removal is the only method allowed in mixed stands or when sensitive species are encountered in the area.

Access to invasive control sites would be on existing roads and trails. Where new trails must be cut to gain access, native vegetation would be trimmed, not removed.

Implementation Schedule

It is anticipated that the construction of proposed SARCCUP facilities would begin at the end of 2019 and would take approximately one to eight years to complete as follows.

- Santa Ana River Arundo Removal
  - Vegetation Removal: September 2019 to June 2021 (36 months)
  - Maintenance and monitoring continuing through June 2023.
- Chino Basin
  - Chino Basin Production Wells, Refurbishment and Treatment System: March 2019 to September 2021 (30 months)
- Riverside Arlington Basin
  - Arlington Production Wells and Pipeline
    - Well Drilling: April 2019 to March 2020 (12 months)

        - Well Equipping (associated pipeline installation): April 2020 to June 2023 (38 months)
    - Cannon Pump Station
        - Pump Station and Ancillary Facilities: April 2019 – March 2021 (24 months)
    - ID-4 CRA Crossing Refurbishment
        - Refurbishment activities: April 2019 – March 2020 (12 months)

ES 4.5 Project Approval

As Lead Agency, IEUA may use this EIR to approve the proposed Project, make Findings regarding identified impacts, and if necessary, adopt a Statement of Overriding Considerations regarding these impacts.

Other approvals required may include the following:

- U.S. Army Corp of Engineers – Clean Water Act Section 404 Permit
- Federal Emergency Management Agency (FEMA) Letter of Map Amendment (LOMA);
- California Department of Water Resources – Permit to Recharge
- State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) – Domestic Water Supply Permit; Drinking Water Source Assessment and Protection
- California Department of Fish & Wildlife (CDFW): Fish & Game Code Section 1602 Permit;
- California Department of Public Health (CDPH): Use Permit for New Wells
- California Department of Transportation (Caltrans): Encroachment Permit
- Regional Water Quality Control Board – Storm Water Pollution Prevention Plans (SWPPP); General Construction Permit
- Regional Water Quality Control Board – Clean Water Act Section 401
- Local Construction/Encroachment Permits;
- County Well Drilling and/or modification permits
- MWD – approval to deliver, exchange, and convey water
- City of Lake Elsinore – Encroachment Permit
- County of Riverside – Local easements
- Riverside County Flood Control and Water Conservation District – Encroachment Permit

ES.5 Summary of Impacts

Table ES-2 presents a summary of the impacts and mitigation measures identified for the EIR. The complete impact statements and mitigation measures are presented in Chapter 4. The level of significance for each impact was determined using significance criteria (thresholds) developed for each category of impacts; these criteria are presented in the appropriate sections of Chapter 4. Significant impacts are those adverse environmental impacts that meet or exceed the significance thresholds; less than significant impacts do not exceed the thresholds. Table ES-2 indicates the mitigation measures that will avoid, minimize, or otherwise reduce significant impacts to a less than significant level.

ES.6 Areas of Known Controversy

Pursuant to Section 15123(b)(2) of the *CEQA Guidelines,* a lead agency is required to include areas of controversies raised by agencies and the public during the public scoping process in the EIR. Areas of controversy have been identified for the proposed Project based on comments received on the NOP during the 30-day public review period. Issues of concern involved the following resource areas: Cultural and tribal resources, air quality, hydrology and water quality, biological resources, public services, geology and soils, growth inducement, and cumulative impacts.

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED PROJECTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.1 Aesthetics			
Impact 4.1-1: The proposed Project would have less than significant effects on a scenic vista.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.1-2: The proposed Project would have a less than a significant impact on scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.1-3: The proposed Project would result in a less than significant impact on the existing visual character or quality and their surroundings.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.1-4: The proposed Project would result in new sources of substantial light or glare which could result in significant adverse effects on day or nighttime views in the project area.	Less than Significant	No mitigation measures are required.	Less than Significant
4.2 Agriculture and Forestry Resources			
Impact 4.2-1: The proposed Project would have a less than significant impact related to the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.2-2: The proposed Project would have a less than significant impact to lands zoned for agricultural use, or a Williamson Act Contract.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.2-3: The proposed Project would have no impact to existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.	No Impact	No mitigation measures are required.	No Impact
Impact 4.2-4: The proposed Project would have no impact to the existing environment that could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use..	No Impact	No mitigation measures are required.	No Impact

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.3 Air Quality			
Impact 4.3-1: The proposed Project would not conflict with or obstruct implementation of the applicable air quality plan.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.3-2: The proposed Project could violate an air quality standard or contribute substantially to an existing or projected air quality violation.	Potentially Significant	**AIR-1:** For each project during construction, off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 emissions standards at a minimum and Tier 4 where available. A copy of each unit's certified tier specification or model year specification shall be available upon request at the time of mobilization of each applicable unit of equipment. The mitigation applies to off-road equipment and does not apply to on-road vehicles.	Less than Significant
Impact 4.3-3: The proposed Project could result in a cumulatively considerable net increase of a criteria pollutant.	Potentially Significant	Implementation of Mitigation Measure AIR-1 is required.	Less than Significant
Impact 4.3-4: The proposed Project could expose sensitive receptors to substantial pollutant concentrations.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.3-5: The proposed Project could create objectionable odors affecting a substantial number of people.	Less than Significant	No mitigation measures are required.	Less than Significant
4.4 Biological Resources			
Impact 4.4-1a: The proposed Project could have significant effects on plant species because the Project could have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status plant species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.	Potentially Significant	**BIO-1**: **Special-Status Plants**. The following measures will reduce potential project-related impacts to special-status plant species that may occur on or adjacent to the Cannon Pump Station project and the ID-4 CRA Crossing sites. a. Prior to the start of construction, a focused botanical survey will be conducted during the appropriate blooming periods to determine the presence/absence of any of the special-status species with a moderate or high potential to occur. The focused botanical survey will be conducted by a botanist or qualified biologist knowledgeable in the identification of local special-status plant species, and according to accepted protocol outlined by the CDFW. Special-status plants detected during the botanical survey will be flagged for avoidance to the extent feasible. b. If impact avoidance is not feasible, the impacted acreage supporting the special-status plant species and the number of individual plants impacted within the construction area will be quantified. If a special-status plant species is discovered in a project impact area, consultation with CDFW and/or USFWS will be required prior to the impact occurring to develop an appropriate mitigation strategy. Depending on the sensitivity of the species, relocation or seed	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		collection may be an acceptable option to avoid significant impacts, as determined through consultation with the resource agencies. The number of individual plants impacted will be replaced at a minimum of 1:1. **BIO-2**: **Worker Environmental Awareness Program**. Prior to construction at the Cannon Pump Station project and the ID-4 CRA Crossing sites, a Worker Environmental Awareness Program (WEAP) shall be implemented for work crews by a qualified biologist(s) prior to the commencement of construction activities and prior to site access by workers. Training materials and briefings shall include but not be limited to, discussion of the federal and state Endangered Species Acts, the consequences of noncompliance with 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.	
Impact 4.4-1b: The proposed Project could have significant effects on wildlife species because the Projects could have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status wildlife species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.	Potentially Significant	**BIO-3**: **Preconstruction Wildlife Surveys**. Project construction at the Chino Basin Production Wells, Refurbishment and Treatment System site, Cannon Pump Station, and ID-4 CRA Crossings sites should avoid, where possible, special status natural communities and other vegetation communities that provide suitable habitat for a special-status species known to occur within the project area. Prior to construction activities, if construction occurs within a special status natural community or other vegetation community that provides suitable habitat for a special status species, a presence/absence survey of any special-status wildlife species must be conducted to determine if the habitat supports any special-status species. If special-status species are determined to occupy any portion of a project site, avoidance and minimization measures shall be implemented such as temporary fencing, inspection of trenches and holes for entrapped wildlife each morning prior to the onset of project construction, inspection of pipes, culverts, and similar construction material for entrapped wildlife, to avoid direct impacts to wildlife to the greatest extent feasible. **BIO-4**: **Nesting Avian Species.** If removal of on-site trees and vegetation associated with the proposed project occurs during the non-nesting season (September 1 to January 31 for songbirds; September 1 to January 14 for raptors), no nesting survey or biological monitor are required. If the removal of on-site trees and vegetation associated with construction at the Chino Basin Production Wells, Refurbishment and Treatment System site, Arlington Pipelines and Wells, Cannon Pump Station, ID-4 CRA Crossings, and Arundo Removal sites occurs during the nesting season (February 1 to August 31 for songbirds; January 15 to August 31 for raptors), a qualified biologist shall conduct a survey prior to vegetation removal activities to determine if there are active nests within the on-site trees and vegetation proposed for removal. If an active nest is not found, no biological monitor is required. If active nests are detected, a minimum	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		buffer (e.g., 300 feet for songbirds or 500 feet for raptors) around the nest shall be delineated and flagged, and no construction activity shall occur within the buffer area until a qualified biologist determines the nesting species have fledged and are no longer active or the nest has failed. The buffer may be modified (i.e., increased or decreased) and/or other recommendations proposed (e.g., a temporary soundwall) as determined appropriate by the qualified biologist to minimize impacts. The qualified biologist shall monitor the removal of on-site trees and vegetation. Nest buffer distance will be based on species, specific location of the nest, the intensity of construction activities, existing disturbances unrelated to the proposed program present in the program area, and other factors. **BIO-5**: **Least Bell's Vireo.** If suitable nesting least Bell's vireo habitat is proposed to be removed at the ID-4 CRA Crossing site or Arundo Removal sites during the non-nesting season (September 16 to March 14), no nesting survey or biological monitor is required. If suitable nesting least Bell's vireo habitat is proposed to be removed during the nesting season (March 15 to September 15), a qualified biologist shall conduct a USFWS protocol survey for least Bell's vireo within suitable nesting habitat the season prior to initiation of work activities to determine their presence or absence within 500 feet of proposed work limits. In accordance with the USFWS survey protocol, surveys shall consist of eight site visits conducted 10 days apart during the period of April 10 to July 31. The results shall be submitted in a report to the USFWS. If the focused surveys do not indicate the presence of least Bell's vireo, no further mitigation is required. If occupied habitat and/or nesting individuals are determined to be present based on the focused survey, work shall be delayed until the non-nesting season. **BIO-6**: **Coastal California Gnatcatcher.** If suitable nesting coastal California gnatcatcher habitat is proposed to be removed at the ID-4 CRA Crossing site during the non-nesting season (July 1 to March 14), no nesting survey or biological monitor is required. If suitable nesting coastal California gnatcatcher habitat is proposed to be removed during the nesting season (March 15 to June 30), a qualified biologist shall conduct a USFWS protocol survey for coastal California gnatcatcher within suitable nesting habitat the season prior to initiation of work activities to determine their presence or absence within 500 feet of proposed work limits. In accordance with the USFWS protocol for the coastal California gnatcatcher (USFWS 1997), focused surveys shall be conducted by a permitted biologist a minimum of: a) six (6) surveys at least on week apart between March 15-June 30; or b) nine (9) surveys conducted at least two weeks apart between July 1 to March 14. The results shall be submitted in a report to the Corps, USFWS, and CDFW. If an active nest is not found, no biological monitor is required. If active nests	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		are detected, the work shall be delayed until after the nesting season is finished. **BIO-7**: **Stephen's Kangaroo Rat.** Prior to the start of construction within potential Stephen's kangaroo rat habitat, a qualified biologist holding a valid section 10(a)(1)(A) permit from USFWS shall inspect the ID-4 CRA Crossing site work area, including stockpiles, for Stephen's kangaroo rat and evidence of activity (i.e., scat, sign, burrows, dust baths). If the species is discovered, project designs will be modified if possible to avoid the occupied areas. If avoidance is infeasible, WMWD will consult with the SKRHCP to initiate coverage under the SKRHCP that will include pre-construction trapping and relocation as well as habitat compensation pursuant to the SKRHCP requirements. **BIO-8**:**Santa Ana Sucker.** Arundo and other invasive plant species removal activities that may affect wetted stream substrate is not allowed during the Santa Ana sucker spawning season (March 1 to July 31).	
Impact 4.4-2: The proposed Project could have significant effects on habitat because the projects could have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS.	Potentially Significant	**BIO-9:** Revegetation Plan. During construction at the Cannon Pump Station site and ID-4 CRA Crossing site, sensitive natural communities and native habitats shall be avoided to the extent feasible. If impacts to sensitive natural communities are unavoidable, prior to vegetation removal or disturbance, a qualified biologist shall be on site to establish and mark limits of sensitive habitats to be avoided to the extent feasible. The biological monitor shall document and quantify any impacts to sensitive habitats to determine the extent and type of habitats required for restoration. Restoration of sensitive habitat vegetation shall occur on the project sites if feasible. 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. Appropriate restoration measures shall be prescribed based on site location, slope, and remoteness. The plan shall identify cover standards that shall be developed for each plant community target, and cover values established for each layer (i.e., herb, shrub, and/or tree layers). The plan shall identify the quantity and quality of habitats to be restored on site. The project proponent shall implement the revegetation plan following construction activities to ensure no permanent net loss of sensitive habitats would occur.	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 4.4-3: The proposed Project could have significant effects on wetlands because the projects could have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Potentially Significant	**BIO-10: Jurisdictional Wetlands and Waters**. Prior to any disturbance of aquatic, wetland, or riparian habitat, a jurisdictional delineation of wetlands and water courses shall be conducted for the purposes of identifying features or habitats that would be subject to the jurisdiction of the USACE, Santa Ana RWQCB, and CDFW. The findings shall be included in a jurisdictional delineation report suitable for submittal to these agencies for obtaining a Section 404 Clean Water Act permit (CWA), Section 401 Water Quality Certification (WQC), Waste Discharge Requirements (WDR), and/or streambed alteration agreement (SAA). Prior to activities that would result in the discharge of fill or dredged material within waters of the U.S., a Section 404 CWA permit shall be obtained from the USACE and a Section 401 WQC shall be obtained from the Santa Ana RWQCB. Prior to activities within streams, ponds, seeps or riparian habitat, or use of material from a streambed, the project applicant shall obtain a WDR for impacts to waters not subject to the CWA, provide written notification to CDFW pursuant to Section 1602 of the Fish and Game Code, ensure the notification is complete as provided in Section 1602, and comply with the terms of conditions of any agreement CDFW may issue in response to the notification.	Less than Significant
Impact 4.4-4: The proposed Project could have significant effects on the movement of species because the projects could interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Potentially Significant	Implementation of Mitigation Measures BIO-4 and BIO-8 is required.	Less than Significant
Impact 4.4-5: The proposed Project would not have significant effects on biological resources because the program could have conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.4-6: The proposed Project would not have significant effects on a conservation plan because the projects could have conflicts 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	No mitigation measures are required.	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.5 Cultural Resources			
Impact 4.5-1: The proposed Project could cause a substantial adverse change in the significance of a historical resource.	Potentially Significant	**CUL-1: Retention of Qualified Archaeologist.** Prior to the start of ground-disturbing activities associated with the Arlington Production Wells and Pipeline project, the Cannon Pump Station project, and the Santa Ana River Arundo Removal project, the respective project lead agencies shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2008) to carry out all mitigation related to cultural resources. **CUL-2**: **Cultural Resources Sensitivity Training.** Prior to start of ground-disturbing activities associated with the Arlington Production Wells and Pipeline project, the Cannon Pump Station project, and the Santa Ana River Arundo Removal project, the qualified archaeologist shall conduct cultural resources sensitivity training for all construction personnel associated with the four projects. Construction personnel will be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. The respective project lead agencies shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance. **CUL-3: Arlington Production Wells and Pipeline Project Construction Monitoring**. Prior to the start of ground-disturbing activities associated with the Arlington Production Wells and Pipeline project, an archaeological monitor working under the supervision of the qualified archaeologist shall be retained to conduct monitoring of all project-related ground-disturbing activities within 100 feet of the mapped location of previously recorded prehistoric archaeological resource, P-33-000496. Based on observations of subsurface soil stratigraphy or other factors during initial ground-disturbing activities, the qualified archaeologist may reduce monitoring, as warranted. Archaeological monitors shall maintain daily logs documenting their observations. Monitoring activities shall be documented in a Monitoring Report to be prepared by the qualified archaeologist. A draft monitoring report shall be submitted to WMWD for review and comment. A final monitoring report shall be submitted to WMWD for their records and a copy will be filed with the Eastern Information Center. **CUL-4: Inadvertent Discoveries**. In the event of the unanticipated discovery of archaeological materials during implementation of the Chino Basin Production Wells, Refurbishment and Treatment System project, the Arlington Production Wells and Pipeline project, the Cannon Pump Station project, and the Santa Ana River Arundo Removal project, all work shall immediately cease within 100 feet of the discovery until it can be evaluated by the qualified archaeologist. Construction shall not resume until the qualified archaeologist has conferred with the respective project lead agency on the significance of the resource. If it is determined that the discovered archaeological resource constitutes a historical resource or a	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		unique archaeological resource pursuant to CEQA, avoidance and preservation in place is the preferred manner of mitigation. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a permanent conservation easement. If preservation in place is demonstrated to be infeasible and data recovery through excavation is the only feasible mitigation available, a Cultural Resources Treatment Plan shall be prepared and implemented by the qualified archaeologist in consultation with the respective project lead agency that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource. The qualified archaeologist and County shall consult with appropriate Native American representatives in determining treatment for prehistoric or Native American resources to ensure cultural values ascribed to the resource, beyond that which is scientifically important, are considered.	
Impact 4.5-2: The proposed Project could cause a substantial change in the significance of a unique archeological resource.	Potentially Significant	Implementation of Mitigation Measures CUL-1 through CUL-4 is required.	Less than Significant
Impact 4.5-3: The proposed Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Potentially Significant	**CUL-5: Retention of a Qualified Paleontologist.** Prior to the start of ground-disturbing activities associated with the Arlington Production Wells and Pipeline project, the respective lead agencies shall retain a qualified paleontologist meeting the Society for Vertebrate Paleontology's professional standards (2010) to carry out all mitigation measures related to paleontological resources. **CUL-6: Paleontological Resources Sensitivity Training.** Prior to the start of ground-disturbing activities associated with the Arlington Production Wells and Pipeline project, the qualified paleontologist shall conduct a paleontological resources sensitivity training for all construction personnel working on the project. This may be conducted in conjunction with the archaeological resources training required by Mitigation Measure CUL-2. The training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, protocols for avoidance and subsequent immediate notification of the qualified paleontologist for further evaluation and action, as appropriate, and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources. The respective project lead agencies shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance. **CUL-7: Paleontological Resources Construction Monitoring**. The qualified paleontologist, or a paleontological monitor working under the direct supervision of the qualified paleontologist, shall conduct periodic spot checks during excavation greater than 10 feet deep associated with the Arlington Production Wells and Pipeline project. In the event that sensitive Quaternary older alluvial deposits are observed during spot	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		check monitoring, the qualified paleontologist may make recommendations to modify the spot check protocols, which could include implementation of monitoring of a greater duration. Likewise, if monitoring observations suggest no potential for paleontological materials, the paleontologist may recommend to reduce or to discontinue the spot checks. The paleontological monitor shall prepare daily logs. After construction has been completed, a report that details the results of the spot check monitoring will be prepared and submitted to the lead agency. **CUL-8: Inadvertent Discovery of Paleontological Resources.** In the event of the unanticipated discovery of paleontological resources during implementation of the Chino Basin Production Wells, Refurbishment and Treatment System project and the Arlington Production Wells and Pipeline project, all work shall immediately cease in the area (within approximately 100 feet) of the discovery until it can be evaluated by a qualified paleontologist. The qualified paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository. Construction shall not resume until the qualified paleontologist has conferred with the lead agency on the significance of the resource.	
Impact 4.5-4: The proposed Project could disturb human remains.	Potentially Significant	**CUL-9: Inadvertent Discovery of Human Remains.** If human remains are uncovered during implementation of the Chino Basin Production Wells, Refurbishment and Treatment System project, the Arlington Production Wells and Pipeline project, the Cannon Pump Station project, the ID-4 CRA Crossing Refurbishment project, and the Santa Ana River Arundo Removal project, all work within 100 feet of the find shall be immediately halted, and the County coroner shall be contacted to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the California Native America Heritage Commission (NAHC), in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC 5097.98 (as amended by AB 2641). The NAHC shall then identify a Most Likely Descendant (MLD) of the deceased Native American, who shall then help determine what course of action should be taken in the disposition of the remains. Per PRC 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section (PRC 5097.98),	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.	
4.6 Geology, Soils, and Seismicity			
Impact 4.6-1: The proposed Project would not expose people or structures to adverse geologic effects, including the risk of loss, injury or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map or based on other substantial evidence of a known fault; strong seismic ground shaking; or seismic-related ground failure, including liquefaction or landslides.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.6-2: The proposed Project would not result in substantial soil erosion or the loss of topsoil.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.6-3: The proposed Project would not be located on a geologic unit or soil that is unstable or that would become unstable as a result of the proposed projects and potentially result in on-or off-site landslide, subsidence, or collapse.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.6-4: The proposed Project would not be located on expansive soils as defined in 24 CCR 1803.5.3 of the California Building Code (2016), creating substantial risks to life or property.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.6-5: The proposed Project would not be located on soils incapable of adequately supporting the use of septic tanks or alternative reclaimed water disposal systems where sewers are not available for the disposal of reclaimed water.	No Impact	No mitigation measures are required.	No Impact
4.7 Greenhouse Gas Emissions			
Impact 4.7-1: The proposed Project would not generate greenhouse gas emissions that has a significant impact on the environment.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.7-2: The proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Less than Significant	No mitigation measures are required.	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.8 Hazards and Hazardous Materials			
Impact 4.8-1: The proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.8-2: The proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.8-3: The proposed Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.8-4: The proposed Project could result in a significant impact if it would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and would create a significant hazard to the public or the environment.	Potentially Significant	**HAZ-1:** Prior to the initiation of any construction requiring ground-disturbing activities, a Phase I Environmental Site Assessments (ESA) for soil and groundwater contamination shall be conducted at the project areas. If the site has the potential for contaminated soil and/or groundwater, a Soil and Groundwater Management Plan that specifies the method for handling and disposing of contaminated soil and groundwater prior to demolition, excavation, and construction activities shall be prepared and implemented. The plan shall include all necessary procedures to ensure that excavated materials and fluids generated during construction are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations.	Less than Significant
Impact 4.8-5: The proposed Project would not result in a safety hazard for people residing or working in the Project area surrounding an airport or private airstrip.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.8-6: The proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less than Significant	No mitigation measures are required.	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 4.8-7: The proposed Project could expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	Potentially Significant	**HAZ-2**: Prior to construction of the ID-4 CRA Crossing and the Cannon Pump Station, and prior to imitation of Arundo Removal activities, fire hazard reduction measures shall be identified and incorporated into a fire management plan. These measures shall address all staging areas, welding areas, or areas slated for development that are planned to use spark-producing equipment. These areas shall be cleared of dried vegetation or other material that could ignite. Any construction equipment that includes a spark arrestor shall be equipped with a spark arrestor in good working order. During the construction of the project facilities, all vehicles and crews working at the project site to have access to functional fire extinguishers at all times. In addition, construction crews shall have a spotter during welding activities to look out for potentially dangerous situations, including accidental sparks.	Less than Significant
4.9 Hydrology and Water Quality			
Impact 4.9-1: The proposed Project could result in water quality impacts and could violate water quality standards or substantially otherwise degrade water quality.	Potentially Significant	**HYDRO-1:** Prior to implementing Arundo donax removal activities, OCWD shall prepare a Storm Water Pollution Prevention Plan that addresses each phase of the activities including site preparation, access, stockpiling, vegetation removal, and disposal activities. At a minimum, the plan shall include the following required Best Management Practices or equivalent measures: • Erosion prevention BMPs within the application areas. • Surface water protection BMPs to ensure equipment, personnel and vegetation avoids contact with water to the extent feasible. • Site access protocols to minimize tracking and erosion. • Temporary sediment fences or straw waddles when necessary to protect surface water. • Herbicide storage and application protocols. • Spill prevention kits near equipment stockpiling areas.	Less than Significant
Impact 4.9-2: The proposed Project would not result in groundwater impacts due to potentially deceasing groundwater supplies or interfering with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	Less than Significant	No mitigation measures are required.	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 4.9-3: The proposed Project would not result in impacts due to potentially altering the existing drainage pattern of a site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion, siltation, exceedance of stormwater system capacities, additional sources of polluted runoff, or impeded or redirected flood flows.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.9-4: The proposed Project would not risk release of pollutants due to the project inundation from floods, tsunamis, or seiches.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.9-5: The proposed Project would not conflict with water quality control plans or sustainable groundwater management plans.	Less than Significant	No mitigation measures are required.	Less than Significant
4.10 Land Use and Planning			
Impact 4.10-1: The proposed Project would not result in impacts regarding the physically division of an established community.	No Impact	No mitigation measures are required.	No Impact
Impact 4.10-2: The proposed Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purposed of avoiding or mitigating an environmental effect.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.10-3: The proposed Project would not conflict with an applicable habitat conservation plan or natural community conservation plan and would require mitigation to reduce potentially significant impacts to less than significant levels.	Less than Significant	No mitigation measures are required.	Less than Significant
4.11 Mineral Resources			
Impact 4.11-1: The proposed Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.11-2: The proposed Project would have no impact to the availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.	Less than Significant	No mitigation measures are required.	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.12 Noise			
Impact 4.12-1: The proposed Project could result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	Potentially Significant	**NOISE-1**: Contractors shall ensure that all construction equipment, fixed or mobile, are equipped with properly operating and maintained noise mufflers, consistent with manufacturers' standards. For example, absorptive mufflers are generally considered commercially available, state-of-the-art noise reduction for heavy duty equipment.2 Most of the noise from construction equipment originates from the intake and exhaust portions of the engine cycle. According to Federal Highway Administration, use of adequate mufflers systems can achieve reductions in noise levels of up to 10 dBA. **NOISE-2:** The responsible agency shall designate a construction relations officer to serve as a liaison with surrounding residents and property owners; the construction relations officer shall be responsible for responding to any concerns regarding construction noise and vibration. The liaison's telephone number(s) shall be prominently displayed at the project site. Signs that include permitted construction days and hours shall also be posted at the project site.	Less than Significant
Impact 4.12-2: The proposed Project would expose persons and structures to less than significant ground-borne vibration or ground-borne noise levels.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.12-3: The proposed Project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.12-4: The proposed Project would not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels without the project.	Potentially Significant	Implementation of Mitigation Measures NOISE-1 and NOISE 2 is required.	Less than Significant
Impact 4.12-5: The proposed Project would not expose people residing or working within two miles of a public airport, public use airport, or private airstrip to excessive noise levels.	Less than Significant	No mitigation measures are required.	Less than Significant
4.13 Population and Housing			
Impact 4.13-1: The proposed Project would not induce substantial population growth within the Project area.	Less than Significant	No mitigation measures are required.	Less than Significant

2 United Muffler Corp: https://www.unitedmuffler.com/; Auto-jet Muffler Corp: http://mandrelbending-tubefabrication.com/OEM/catalogpages/construction_off_road.php. Accessed January 2018.

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 4.13-2: The proposed Project would not displace housing or people, and would not necessitate the construction of replacement housing elsewhere.	No Impact	No mitigation measures are required.	No Impact
4.14 Public Services			
Impact 4.14-1: The proposed Project would have no impact to police or fire protection facilities.	No Impact	No mitigation measures are required.	No Impact
Impact 4.14-2: The proposed Project would have no impact to public school facilities.	No Impact	No mitigation measures are required.	No Impact
Impact 4.14-3: The proposed Project would have a less than significant impact to the use of existing neighborhood and regional parks or other recreational facilities.	Less than Significant	No mitigation measures are required.	Less than Significant
4.15 Transportation and Traffic			
Impact 4.15-1: Implementation of the proposed Project could have a significant impact on an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.	Potentially Significant	**TT-1:** Prior to construction of pipelines within streets, such as for the Arlington Production Wells and Pipeline and Cannon Pump Station projects, a construction traffic control plan shall be prepared and implemented. Elements of the plan should include, but are not necessarily limited to, the following: • Develop circulation and detour plans if necessary to minimize impacts to local street circulation and existing public transit, bikeways, and pedestrian facilities, including the Santa Ana River Trail. Use haul routes minimizing truck traffic on local roadways to the extent possible. • To the extent feasible, and as needed to avoid adverse impacts on traffic flow, schedule truck trips outside of peak morning and evening commute hours. • Install traffic control devices as specified in Caltrans' Manual of Traffic Controls for Construction and Maintenance Work Zones where needed to maintain safe driving conditions. Use flaggers and/or signage to safely direct traffic through construction work zones. • For roadways requiring lane closures that would result in a single open lane, maintain alternate one-way traffic flow and utilize flagger-controls. • Provide advance notification to the owners or operators of facilities adjacent to proposed construction activities on rights-of-way regarding planned timing, location and duration of construction. This also includes notification of affected public transit companies and the applicable city where streets are being impacted. Notify police and	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		fire stations within a 5-mile radius about construction details along rights-of-way.	
Impact 4.15-2: Implementation of the proposed Project could conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards and travel demand measures, or other standards established by the county congestion management agency for designated road or highways.	Less than Significant	Implementation of Mitigation Measure TT-1 is required.	Less than Significant
Impact 4.15-3: Implementation of the proposed Project would not result in change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risk.	No Impact	No mitigation measures are required.	No Impact
Impact 4.15-4: Implementation of the proposed Project would not have a significant hazard impacts due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.15-5: Implementation of the proposed Project could result in inadequate emergency access.	Potentially Significant	Implementation of Mitigation Measure TT-1 is required.	Less than Significant
Impact 4.15-6: Implementation of the proposed Project could conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Potentially Significant	Implementation of Mitigation Measure TT-1 is required.	Less than Significant
4.16 Tribal Cultural Resources			
Impact 4.16-1: The project could cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(l), or determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1.	Potentially Significant	**TRIBAL-1: Continued Tribal Resources Consultation**. Prior to the start of ground-disturbing activities associated with the Chino Basin Production Wells, Refurbishment and Treatment System project, the Arlington Production Wells and Pipeline project, the Cannon Pump Station project, and the Santa Ana River Arundo Removal project, IEUA shall notify and consult with Native American groups that have requested notification and further consultation under AB-52 regarding the project locations and construction methods.	Less than Significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.17 Utilities and Service Systems			
Impact 4.17-1: The proposed Project would not require relocation or construction of new or expanded water, wastewater treatment, or storm water, drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.17-2: The proposed Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.17-3: The proposed Project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the projects projected demand in addition to the provider's existing commitments.	Less than Significant	No mitigation measures are required.	Less than Significant
Impact 4.17-4: The proposed Project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. In addition, the project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	Less than Significant	No mitigation measures are required.	Less than Significant.

ES.7 Significant Irreversible Environmental Changes

CEQA Guidelines 21100(b) (2) and 15126.2(b) require that any significant effect on the environment that would be irreversible if the pro is implemented must be identified. A project would generally result in a significant irreversible impact if:

- Primary and secondary impacts (such as roadway improvements that provide access to previously inaccessible areas, etc.) would commit future generations to similar uses.
- The project would involve a large commitment of nonrenewable resources.
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.

Construction and operation of the proposed projects would require the use and consumption of nonrenewable resources, such as steel and other metals. Renewable resources, such as lumber and other wood byproducts, would also be used. Unlike renewable resources, nonrenewable resources cannot be regenerated over time. Construction of facilities would require the commitment of a relatively small amount of building materials. The small quantity of building materials used during implementation of SARCCUP would not result in a significant impact because these types of resources are anticipated to be in adequate supply into the foreseeable future. Therefore, impacts due to irretrievable and irreversible commitments of resources are considered less than significant.

ES.8 Project Alternatives

In accordance with *CEQA Guidelines* (Section 15126.6), an EIR must describe and compare a range of reasonable alternatives to a project, or alternative locations for a project, that could feasibly attain most of the basic project objectives but avoid or substantially lessen any significant environmental impacts associated with the project. An EIR must consider a reasonable range of feasible alternatives to facilitate informed decision making and public participation. An EIR need not consider every conceivable alternative to a project and is not required to consider alternatives which are infeasible. The lead agency shall select a range of project alternatives and disclose its reasoning for selecting those alternatives. The selection of such alternatives is governed only by the rule of reason, as described further below.

ES 8.1 Selection of a Range of Reasonable Alternatives

Because an EIR must identify ways to mitigate or avoid significant environmental effects of a project, the analysis of alternatives shall focus on alternatives that are capable of avoiding or substantially lessening one or more significant environmental effects (*CEQA Guidelines* Section 15126.6[b]). The EIR must explain the rationale for selecting the alternatives to be evaluated and identify alternatives that were considered but rejected (*CEQA Guidelines* Section 15126.6[c]). The lead agency is required to explain the reasons for rejecting alternatives. The factors that may be used to eliminate alternatives from detailed consideration in an EIR include, but are not limited to, the following: (1) failure to meet most of the basic project objectives, (2) inability to avoid significant environmental impacts, and (3) infeasibility. When considering the feasibility of an alternative, the following factors may be considered: site suitability, economic viability,

availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the ability to reasonably acquire, control, or otherwise have access to the alternative site (*CEQA Guidelines* Section 15126.6[f][1]).

ES 8.2 Evaluation of Alternatives

An EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project (*CEQA Guidelines* Section 15126.6[d]). The environmental impacts associated with the alternatives are evaluated relative to the impacts associated with the proposed project. A matrix can be used to summarize and compare the major characteristics and significant environmental effects of each alternative. If an alternative would cause additional significant effects, in addition to those caused by the proposed project, they are required to be discussed but in less detail than the significant effects of the proposed project.

Section 15126.6(e)(1) of the *CEQA Guidelines* requires that a no project alternative be addressed in this analysis. The purpose of evaluating a no-project alternative is to allow decision-makers to compare the potential consequences of the project with the consequences that would occur without implementation of the project. An EIR must also identify the environmentally superior alternative. A no-project alternative may be environmentally-superior to the project based on the minimization or avoidance of physical environmental impacts. However, a no-project alternative must also achieve the project objectives in order to be selected as the environmentally-superior alternative. Section 15126.6(e)(2) of the *CEQA Guidelines* requires that if the environmentally superior alternative is the no-project alternative, an EIR shall identify an environmentally superior alternative among the other alternatives.

ES 8.3 Development of SARCCUP Alternatives

The SARCCUP partner agencies determined which projects or combination of projects would be most effective in meeting the goals of the program to result in mutual water supply reliability benefits. The process began with the definition of specific SARCCUP goals and the establishment of current facilities operations. A target of 180,000 AF of storage was identified as a target initially within the Chino, SBBA, San Jacinto, and Elsinore basins. After receiving comments on the Notice of Preparation and as the project developed, the SARCCUP partner agencies transferred some of the storage capacity from the Chino and Elsinore basins to the SBBA, Bedford-Coldwater, Orange County and Riverside-Arlington basins. The project description provided in Chapter 2 presents the proposed SARCCUP with storage capacity in the Orange County Basin and a reduced storage capacity in the Chino Basin compared to the project described in the NOP.

ES 8.4 Project Alternatives

Three SARCCUP Project alternatives were selected for detailed analysis. The goal for evaluating these alternatives is to identify alternatives that would avoid or lessen the significant environmental effects of the program, while attaining most of the program objectives. As concluded in Chapter 4, the proposed projects would not result in any significant impacts.

Nonetheless, this alternatives analysis has been prepared to evaluate other alternatives to compare with the proposed project.

The following sections provide a general description of each identified alternative, its ability to meet the Project objectives, and a discussion of its comparative environmental impacts. As provided in Section 15126.6(d) of the *CEQA Guidelines*, the significant effects of these alternatives are identified in less detail than the analysis of the program in Chapter 4 of this Draft EIR. **Table ES-3** provides a comparison of the alternatives with the Project. **Table ES-4** compares the alternatives with the Project objectives.

TABLE ES-3
SUMMARY OF IMPACTS OF ALTERNATIVES COMPARED TO THE PROJECT

Environmental Topic	Project	Alternative 1: No Project	Alternative 2: Increased Chino Groundwater Storage	Alternative 3: Decreased Groundwater Storage
Aesthetics	Less than Significant	Less	Similar	Similar
Agriculture and Forestry Resources	Less than Significant	Less	Similar	Similar
Air Quality	Less than Significant with Mitigation	Less	Similar	Similar
Biological Resources	Less than Significant with Mitigation	Greater	Similar	Similar
Cultural Resources	Less than Significant with Mitigation	Less	Similar	Similar
Geology, Soils and Seismicity	Less than Significant	Less	Similar	Similar
GHG Emissions	Less than Significant	Less	Similar	Similar
Hydrology and Water Quality	Less than Significant with Mitigation	Less	Similar	Similar
Hazards and Hazardous Materials	Less than Significant with Mitigation	Less	Similar	Similar
Land Use and Planning	Less than Significant	Less	Similar	Similar
Mineral Resources	Less than Significant	Less	Similar	Similar
Noise	Less than Significant with Mitigation	Less	Similar	Similar
Population and Housing	Less than Significant	Less	Similar	Similar
Public Services	Less than Significant with Mitigation	Less	Similar	Similar
Recreation	Less than Significant with Mitigation	Less	Similar	Similar
Transportation and Traffic	Less than Significant with Mitigation	Less	Similar	Similar
Tribal Cultural Resources	Less than Significant with Mitigation	Less	Similar	Similar
Utilities and Service Systems	Less than Significant	Less	Similar	Similar
Secondary Effects of Growth	Less than Significant with Mitigation	Less	Similar	Similar

TABLE ES-4
ABILITY OF ALTERNATIVES TO MEET PROJECT OBJECTIVES

Project Objectives	Project	Alternative 1: No Project	Alternative 2: Increased Chino Groundwater Storage	Alternative 3: Decreased Groundwater Storage
SARCCUP would increase DYY from local groundwater basins in the watershed to offset future reductions in water supply, whether due to climate change or natural or manmade supply cutbacks.	Yes	No	Yes	No
SARCCUP activities support the goals of the One Water One Watershed 2.0 Plan (2014), which is the Santa Ana River Watershed's Integrated Regional Watershed Management Plan (IRWMP).	Yes	No	Yes	No
SARCCUP would reduce water demand through removal of *Arundo donax*, a water intensive non-native, plant within the Santa Ana River Watershed	Yes	No	Yes	Yes
SARCCUP would enhance the watershed environment through restoration of existing riparian habitat and creating new habitat for a federally listed native freshwater fish species, the Santa Ana sucker (*Castostomus santaanae*). This will also support and facilitate obtaining permits from the state and federal wildlife agencies for water supply projects along the Santa Ana River.	Yes	No	Yes	Yes

Alternative 1: No Project Alternative

An analysis of the No Project Alternative is required under CEQA Guidelines Section 15126.6(e). According to Section 15126.6(e)(2) of the *CEQA Guidelines*, the "no project" analysis shall discuss:

> *what is reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.*

The No Project Alternative represents a "no build" scenario in which the proposed project would not be constructed or operated. It assumes that all proposed Project facilities would not be implemented. Under the No Project Alternative, the SARCCUP partner agencies would continue operations of supplying water to customers using existing supply sources and infrastructure. There would be no increase in the use of groundwater banking and use to solve regional DYY water supply demands.

Alternative 2: Additional Chino Basin Groundwater Storage

Alternative 2 would transfer OCWD's 36,000 AF storage capacity to Chino Basin to maintain the total storage capacity goal of the Project at 180,000 AF without needing the Orange County Basin. Alternative 2 would require additional construction and operation of groundwater recharge infrastructure to accommodate the additional pumping of 36,000 AF, bringing the total groundwater storage of the Chino Basin to 86,000 AF. The increased storage capacity would

result in an increase in storage and extraction from the Chino Basin in excess of current storage and extraction limitations imposed by the Chino Basin Watermaster.

Alternative 3: Reduced Chino Basin Groundwater Storage

Alternative 3 considers a reduction of 36,000 AF of storage capacity from the SARCCUP program resulting in a reduced capacity of 144,000 AF. Under this alternative, SARCCUP would not utilize storage capacity in the Orange County Basin. Alternative 2 would require similar construction and operation of groundwater recharge infrastructure. However, the total groundwater storage capacity would be reduced to 144,000.

ES 8.5 Environmentally Superior Alternative

CEQA requires that an EIR identify an environmentally superior alternative of a project other than the No Project Alternative (CEQA Guidelines Section 15126.6[e][2]). Table 7-2 shows an impact determination comparison for potentially significant impacts of the proposed program to all the proposed alternatives. The No Program Alternative (Alternative 1) would reduce or eliminate Project construction impacts, but would not provide the benefits of the proposed project to biological resources within the Santa Ana River.

Alternative 2 would not eliminate any of the potential impacts of the Project. By increasing the proposed recharge capacity of the Chino Basin, effects on groundwater levels would be slightly greater than under the proposed Project. the Chino Basin Watermaster would need to determine whether the increased storage and extraction capacity within the Chino Basin would adversely affect local pumpers.

Alternative 3 would differ from the Project by not including the volume of groundwater to be stored from OCWD (36,000 AF) and a slight decrease in the construction of associated facilities with the storage and movement of that volume. Under Alternative 3, the regional benefits of shared groundwater storage capacity would be lessened, resulting in a less reliable dry year water supply. Alternative 3 would, therefore, not meet all the goals of the Project, requiring SARCCUP partner agencies to develop other water reliability programs that may result in more environmental impacts. As a result, Alternative 3 is not the environmentally superior project. The proposed Project is the environmentally superior alternative since it provides for the careful planning and timed implementation of necessary water supply reliability, while improving native habitat conditions within the Santa Ana River, and minimizing environmental impacts associated with dry year water supply management compared with other water supply alternatives.

ES.9 Organization of this EIR

This Draft EIR is organized into the following chapters:

Executive Summary. This chapter summarizes the contents of the Draft EIR.

Chapter 1, Introduction. This chapter discusses the CEQA process and the purpose of the EIR.

Chapter 2, Project Background. This chapter provides an overview of SARCCUP, background information regarding the agencies and development of SARCCUP, the need for and objectives of SARCCUP, and provides an overview of CEQA documents that are being prepared in support of SARCCUP.

Chapter 3, Project Description. This chapter provides detail on the characteristics of the proposed Project being analyzed within this Draft EIR.

Chapter 4, Environmental Setting, Impacts and Mitigation Measures. This chapter describes the environmental setting and identifies impacts of the proposed project for each of the following environmental resource areas: Aesthetics; Agriculture and Forestry Resources; Air Quality; Biological Resources; Cultural Resources; Geology, Soils, and Seismicity; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Mineral Resources; Noise; Population and Housing; Public Services; Recreation; Transportation and Traffic; Tribal Cultural Resources; and Utilities and Service Systems. As needed, measures to mitigate the impacts of the proposed Project are presented for each resource area.

Chapter 5, Other CEQA Sections. This chapter describes the effects that were found to be significant and unavoidable. In addition, this chapter discusses the significant irreversible environmental changes, growth-inducing, and energy impacts associated with the Project.

Chapter 6, Cumulative Impacts. This chapter describes the cumulative impacts of the proposed Project together with past, current, and probable future projects within the region.

Chapter 7, Alternatives. This chapter presents an overview of the alternatives development process and describes the alternatives to the proposed Project that were considered.

Chapter 8, Report Preparation. This chapter identifies the key staff at IEUA, other member agencies, and the CEQA consultants involved in preparing this Draft EIR.

CHAPTER 1
Introduction

1.1 Introduction

The Santa Ana River Conservation and Conjunctive Use Program (SARCCUP) is a watershed-scale collaborative program that has been developed to improve the Santa Ana River watershed's water supply resiliency. This collaborative program includes implementing multiple projects that would manage surface water and groundwater to improve the overall reliability of water supply in the watershed. SARCCUP is a multi-agency, multi-jurisdictional program that would be implemented collectively by the Inland Empire Utilities Agency (IEUA), Eastern Municipal Water District (EMWD), Orange County Water District (OCWD), San Bernardino Valley Municipal Water District (SBVMWD), and Western Municipal Water District (WMWD), under broad oversight by Santa Ana Watershed Project Authority (SAWPA). In addition, Elsinore Valley Municipal Water District (EVMWD) and Orange County Coastkeeper (OCCK), a 501(c)(3) nonprofit organization, are contributing program members.

1.2 Purpose of the Environmental Impact Report

According to the California Environmental Quality Act (CEQA), when a project is to be carried out by multiple public agencies, one agency is selected to be the lead agency and the other agencies are designated as responsible agencies (*CEQA Guidelines* Section 15050(a)). The decision-making bodies of the lead agency and responsible agencies are required to consider the environmental impact report prior to acting upon or approving the project (*CEQA Guidelines* Section 15050(b)). In April 2018, SARCCUP partnering agencies agreed to prepare separate environmental impact assessments for construction of SARCCUP-related facilities that are occurring within their service areas. This approach allowed each SARCCUP partnering agency to implement projects more closely aligned with their proposed construction schedules and meet the overall goal of the SARCCUP program. Three of the five partnering agencies, IEUA, WMWD, and OCWD, are preparing this joint, project-specific Draft EIR. IEUA is the lead agency for the this Joint EIR, and WMWD and OCWD are responsible agencies. As the lead agency, IEUA has prepared this Draft Environmental Impact Report (EIR) to provide the public and responsible/trustee agencies with information about the potential environmental effects associated with implementation of specific projects that are designed to facilitate the goals of SARCCUP.

This Draft EIR has been prepared in compliance with the CEQA of 1970 (as amended), codified at California Public Resources Code Sections 21000 et. Seq. and the *CEQA Guidelines* in the Code of Regulations, Title 14, Division 6, Chapter 3.

1.3 CEQA Environmental Review Process

1.3.1 Notice of Preparation

On October 28, 2016, in accordance with Sections 15063 and 15082 of the *CEQA Guidelines*, IEUA published a Notice of Preparation (NOP) of a Draft Program EIR (PEIR) with the State Clearinghouse (SCH No.: 2016101079) for circulation to governmental agencies, organizations, and persons who may be interested in this project. The NOP was also made available for public review at the Riverside, San Bernardino, and Orange County Clerks. A Notice of Completion (NOC) of the NOP was sent to the State Clearinghouse.

The NOP requested comments on the scope of the Draft PEIR, and asked that those agencies with regulatory authority over any aspect of the project describe that authority. The comment period concluded on December 12, 2016 (46 days). The NOP provided a description of SARCCUP, a description of the program area and a preliminary list of potential environmental impacts that might occur as a result of implementing the program.

However, since the NOP release, SARCCUP partnering agencies have agreed to prepare separate environmental impact assessments for construction of SARCCUP-related facilities that are occurring within their service areas. A list of other CEQA documents prepared by partnering agencies is included in Chapter 6, *Cumulative Impacts* of this Draft EIR. Consistent with partnering agencies' decision to prepare separate environmental impact assessments, three partnering agencies, IEUA, WMWD, and OCWD, are preparing this project-specific Draft EIR, and not a PEIR, to assess project-, not program-, level impacts related to implementing five specific projects that are part of SARCCUP.

A copy of the NOP for the PEIR and responses to the NOP are included in this Draft EIR are included in **Appendix A**. A total of 20 comment letters were received in response to the PEIR NOP. Specific environmental concerns received on the NOP are discussed in Appendix A.

1.3.2 Scoping Meetings

CEQA recommends conducting early coordination with the general public, appropriate public agencies, and local jurisdictions to assist in developing the scope of the environmental document. Pursuant to *CEQA Guidelines* Section 15083, one public scoping meeting was held on December 7, 2016, to allow agency consultation and public involvement. The public scoping meeting was held to describe the program, identify the environmental topics that would be addressed in the EIR, and describe the CEQA process for the EIR. IEUA provided an opportunity for attendees to verbally comment on the scope of the environmental evaluation and written comments were received until December 12, 2016.

1.3.3 Draft EIR

This Draft EIR contains a description of projects to be implemented by three partnering agencies, IEUA, WMWD, and OCWD, description of the baseline environmental setting for each resource listed in Appendices F and G of the *CEQA Guidelines*, identification of project-level

environmental impacts, programmatic cumulative environmental impacts, mitigation measures for impacts found to be significant, and an analysis of project alternatives.

The *CEQA Guidelines* Section 15125(a) requires that a Draft EIR include a description of the physical environmental conditions as they exist when the NOP is published. This environmental setting typically constitutes the baseline against which the lead agency compares the physical environmental changes that may occur as a result of the project and determines whether such impacts are significant. The baseline environmental conditions for the analysis included within this Draft EIR are generally from October 2016, when the NOP was published.

This Draft EIR provides an assessment of impacts for facilities and activities associated with implementing the following projects (collectively, proposed Project) designed to facilitate SARCCUP:

- Chino Basin Production Wells, Refurbishment and Treatment System
- Arlington Production Wells and Pipeline
- Cannon Pump Station Project
- ID-4 Colorado River Aqueduct (CRA) Crossing Refurbishment
- Santa Ana River Arundo Removal

1.3.4 Known Areas of Controversy and Issues of Concern

Pursuant to Section 15123(b)(2) of the *CEQA Guidelines,* a lead agency is required to include areas of controversies raised by agencies and the public during the public scoping process in the EIR. Areas of controversy have been identified for the proposed Project based on comments received on the NOP during the 30-day public review period. Issues of concern involved the following resource areas: Cultural and tribal resources, air quality, hydrology and water quality, biological resources, public services, geology and soils, growth inducement, and cumulative impacts.

1.3.5 Public Review

In accordance with Section 15105 of the *CEQA Guidelines*, the Draft EIR is available for public review and comment for a 45-day review period. The Draft EIR has been circulated to federal, state, and local agencies and interested parties, who may wish to review and provide comments on its contents. Please send all written comments prior to the end of the Draft EIR public review period to:

Ms. Sylvie Lee
Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708
Phone: (909) 993-1646; Email: slee@ieua.org

All oral and written comments received on the Draft EIR will be responded to and included in the EIR. Comments on the Draft EIR must be received by 5:00 p.m. on the last day of the 45-day review period.

1.3.6 Final EIR Publication and Certification

Written and oral comments received on the Draft EIR will be addressed in a Response to Comments document which, together with the Draft EIR and changes and corrections to the Draft EIR, will constitute the Final EIR. Following review of the Final EIR, the IEUA Board of Directors will certify that it has reviewed and considered the information contained in the Final EIR, that the Final EIR reflects the lead agency's independent judgment and analysis, and that the Final EIR has been completed in compliance with CEQA. Once the Final EIR has been certified, the lead agency may proceed to consider project approval. Prior to approving the project, the lead agency must make written Findings with respect to each significant environmental effect identified in the Draft EIR in accordance with Section 15091 of the *CEQA Guidelines*.

CEQA requires that the lead agency neither approve nor implement a project unless the project's significant environmental effects have been reduced to a less than significant level, essentially "eliminating, avoiding, or substantially lessening" the expected impacts. If the lead agency approves the project despite residual significant impacts that cannot be mitigated to a less than significant level, the agency must state the reasons for its action in writing in a Statement of Overriding Considerations (SOC). As defined in *CEQA Guidelines* Section 15093, a SOC balances the benefits of a project against its unavoidable environmental consequences. The SOC must be included in the record of the project approval.

As responsible agencies, OCWD and WMWD will consider the Final EIR, adopt applicable mitigation measures, adopt Findings, and if necessary adopt a Statement of Overriding Considerations, prior to approving the project and proceeding with project implementation, in accordance with *CEQA Guidelines* Section 15096.

Within five working days after project approval, the lead agency will file a Notice of Determination (NOD) with the Riverside and San Bernardino counties and the State Clearinghouse (*CEQA Guidelines* Section 15094). Similarly, each Responsible Agency will file an NOD following project approval.

1.3.7 Mitigation Monitoring and Reporting Program

CEQA Guidelines Section 21081.6(a) requires lead agencies to "adopt a reporting and mitigation monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment." Throughout the EIR, mitigation measures are clearly identified and presented in language that will facilitate establishment of a monitoring and reporting program. Any mitigation measures adopted by the IEUA will be included in a Mitigation Monitoring and Reporting Program (MMRP) to verify compliance. The MMRP will be included within the Final EIR.

1.4 EIR Organization

This Draft EIR is organized into the following chapters:

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Chapter 5, Other CEQA Sections. This chapter describes the effects that were found to be significant and unavoidable. In addition, this chapter discusses the significant irreversible environmental changes, growth-inducing, and energy impacts associated with the Project.

Chapter 6, Cumulative Impacts. This chapter describes the cumulative impacts of the proposed Project together with past, current, and probable future projects within the region. Other SARCCUP projects are included and analyzed within this Chapter as cumulative projects within the region.

Chapter 7, Alternatives. This chapter presents an overview of the alternatives development process and describes the alternatives to the proposed Project that were considered.

Chapter 8, Report Preparation. This chapter identifies the key staff at IEUA, WMWD, OCWD, and other member agencies, and the CEQA consultants involved in preparing this Draft EIR.

CHAPTER 2
Project Background

The proposed Project includes the implementation of five specific projects that are located within the Santa Ana River Watershed. The five specific projects would assist in achieving the objectives of the Santa Ana River Conservation and Conjunctive Use Program (SARCCUP). The background, location, objectives, partner agencies, operations, and descriptions of the projects that are contemplated as part of SARCCUP are provided below. The detailed descriptions of the five specific projects that comprise the proposed Project are provided in Chapter 3, *Project Description*, of this Draft EIR.

2.1 SARCCUP Background

SARCCUP is a watershed-scale collaborative program designed to improve the Santa Ana River watershed's water supply resiliency and reliability by implementing various watershed-wide projects (**Table 2-1**) that would increase available dry-year yield (DYY) from local groundwater basins. As a watershed-wide cooperative venture, SARCCUP will allow the regional water managers to combine groundwater resources and water conveyance infrastructure for the benefit of the watershed as a whole. SARCCUP consists of the following main program elements:

1. Conjunctive Use Program[1] for the Santa Ana Watershed;
2. Invasive weed removal and habitat creation/restoration for the Santa Ana sucker (*Catostomus santaanae*), a native fish species listed as threatened under the federal Endangered Species Act; and
3. Water use efficiency and water conservation measures.

Regional water managers would utilize existing and new facilities to convey additional surface water supplies to groundwater banking facilities, recharging the underlying groundwater basins throughout the watershed. Conjunctive use of the banked groundwater would occur collaboratively between SARCCUP members.

[1] Conjunctive Use Program refers to the management of groundwater resources to enhance storage and water supplies through enhanced recharge and extraction management.

TABLE 2-1
SARCCUP DYY

Project Name	Program Element	Location	Water Supply or Storage (AF)	Capacity (AFY)	Dry Year Supply or Yield ** (AFY)	Annual Demand Reduction (AFY)
Santa Ana Sucker Habitat Restoration and Creation	Habitat; Water Conservation	Santa Ana River, Riverside County	Not Applicable	Not Applicable	Not Applicable	800***
Arundo Removal	Habitat; Water Conservation	Prado Basin and Santa Ana River, Riverside County	Not Applicable	Not Applicable	Not Applicable	12,800***
Water Use Efficiency and Conservation	Water Conservation	Santa Ana River Watershed	Not Applicable	Not Applicable	Not Applicable	2,400***
Chino Basin Bank	Conjunctive Use Program	Chino Groundwater Basin and Cucamonga Sub-basin; San Bernardino County	0-50,000	Up to 32,000	Up to 16,667	Not Applicable
San Bernardino Basin Bank	Conjunctive Use Program	Bunker Hill Groundwater Basin; San Bernardino County	64,000	25,000	21,333	Not Applicable
Elsinore Basin Bank	Conjunctive Use Program	Bedford-Coldwater Sub-basin within Elsinore Groundwater Basin; Riverside County	0-4,500	Up to 1,500*	Up to 1,500	Not Applicable
Riverside-Arlington Basin Bank	Conjunctive Use Program	Riverside-Arlington Groundwater Basin; Riverside County	6,000-25,000	Up to 8,500	Up to 8,500	Not Applicable
Orange County Basin Bank	Conjunctive Use Program	Orange County Groundwater Basin	36,000-50,000	Up to 12,500*	Up to 16,667	Not Applicable
San Jacinto Basin Bank	Conjunctive Use Program	San Jacinto Groundwater Basin; Riverside County	19,500	6,500	6,500	Not Applicable
Central Valley Basin Bank(1)	Conjunctive Use Program	Central Valley	0-15,000	Up to 15,000	Up to 15,000	Not Applicable
TOTAL			**144,000-180,000**	**Up to 101,000**	**43,000-60,000**	**16,000**

Source: SAWPA 2018; DSM Table 4
* Elsinore, Riverside Arlington, and Orange County DYY supply shown here is assumed.
** SARCCUP will be operated to produce approximately 60,000 AFY of dry-year supply. The annual quantity of water actually produced under SARCCUP will be managed to drain the groundwater bank in three years, but operational and capacity limitations could extend the time needed to drain the bank.
*** Santa Ana Sucker Habitat Restoration and Creation, Arundo Removal, and Water Use Efficiency reduce existing consumption resulting in availability of this water supply for other uses.
(1) SARCCUP would secure a groundwater storage and recovery agreement with an existing Central Valley Basin Bank to supplement DYY supply within the Santa Ana River Watershed. If pursued, the water would be conveyed into the Watershed by existing facilities similar to those used to transport water to State Water Project Contractors along the California Aqueduct. The groundwater storage, capacity and DYY supply shown here is assumed. If deemed necessary, a separate CEQA process will be completed at such time prior to implementing this program element.

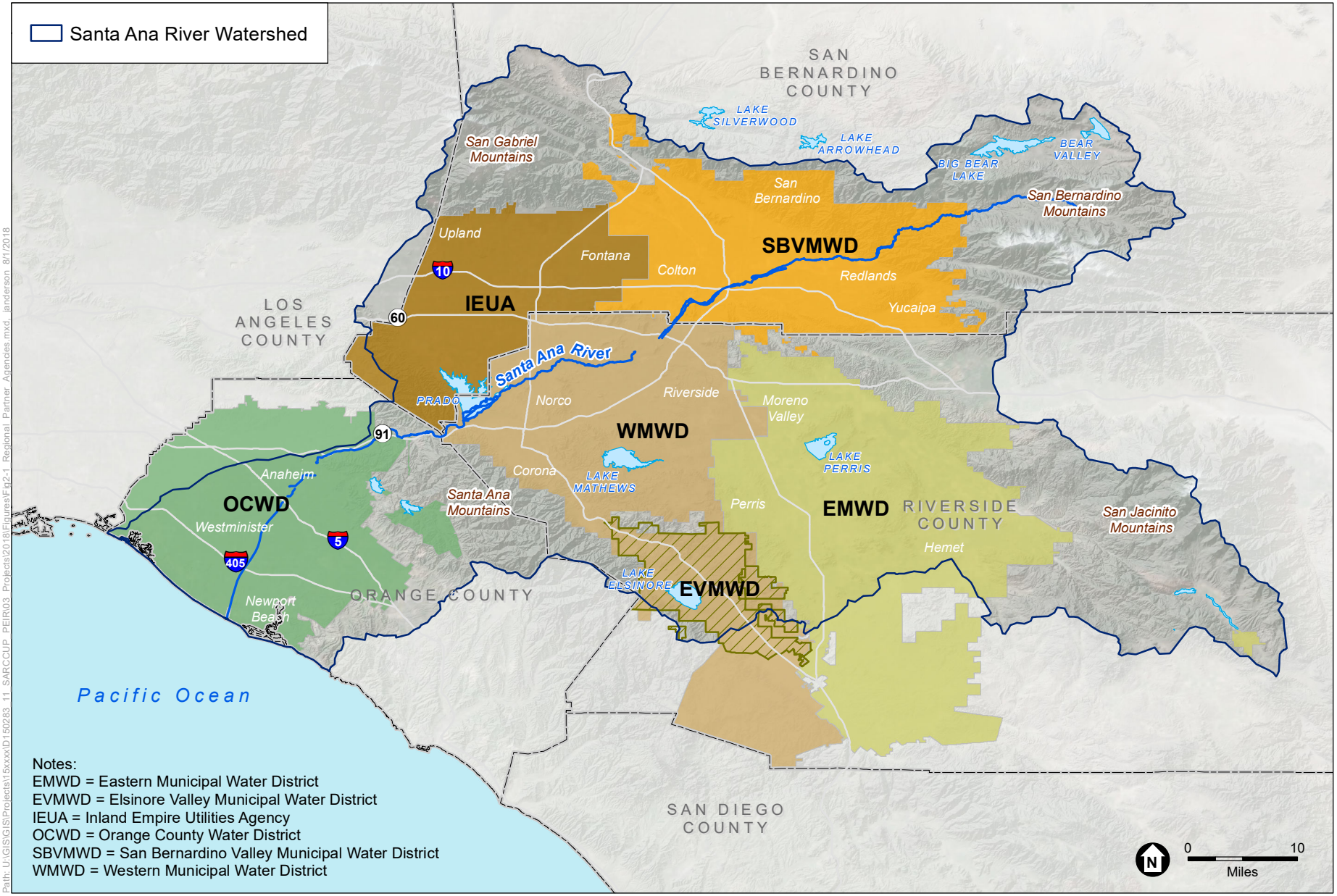
The program was created to ensure sustainability of the region's groundwater supplies. Partnering agencies would create a network of conveyance facilities designed to support a cooperative, inter-agency water management program. Partnering agencies include: Eastern Municipal Water District (EMWD), Inland Empire Utilities Agency (IEUA), Orange County Water District (OCWD), San Bernardino Valley Municipal Water District (SBVMWD), Western Municipal Water District (WMWD) and the Santa Ana Watershed Project Authority (SAWPA), a joint-powers agency comprised of partner agencies EMWD, IEUA, OCWD, SBVMWD, and WMWD (see **Figure 2-1**). Additionally, SARCCUP partners with Orange County Coastkeeper (OCCK), a 501(c)(3) nonprofit organization.

After program implementation, SARCCUP would provide approximately 60,000 AFY (Table 2-1) in DYY during wet years, estimated to occur three out of every 10 years. Water purchased for storage in the SARCCUP facilities would include water purchased by the partner agencies collectively and individually, as well as transfers between the agencies. Additionally, SARCCUP would remove up to 640 acres of the invasive plant species *Arundo donax*, to create 3.5 miles (18,250 linear feet) of restored in-stream habitat and 40.5 acres of restored riparian habitat along the Santa Ana River for Santa Ana sucker (*Catostomus santaanae*), a federally protected species under the Endangered Species Act (ESA).

SARCCUP would initiate additional water conversation measures throughout the Santa Ana Watershed such as conservation-based rate structures and Smartscape; an educational, outreach, training and communication service that provides support in the design, installation and maintenance of drought tolerant landscapes. It is estimated that up to 2,400 AFY of water supply can be provided by implementing these programs.

2.2 SARCCUP Project Locations

The projects associated with SARCCUP would be implemented within the Santa Ana River watershed and the service areas of the five partner agencies. These service areas are located primarily in San Bernardino, Riverside, and Orange Counties, as shown in Figure 2-1. The groundwater basins located within the SARCCUP area include Chino Basin, Cucamonga Basin, Orange County, Riverside-Arlington, San Bernardino Bunker Hill Basin, San Jacinto Basin, and Elsinore Valley Basin as shown in **Figure 2-2.**



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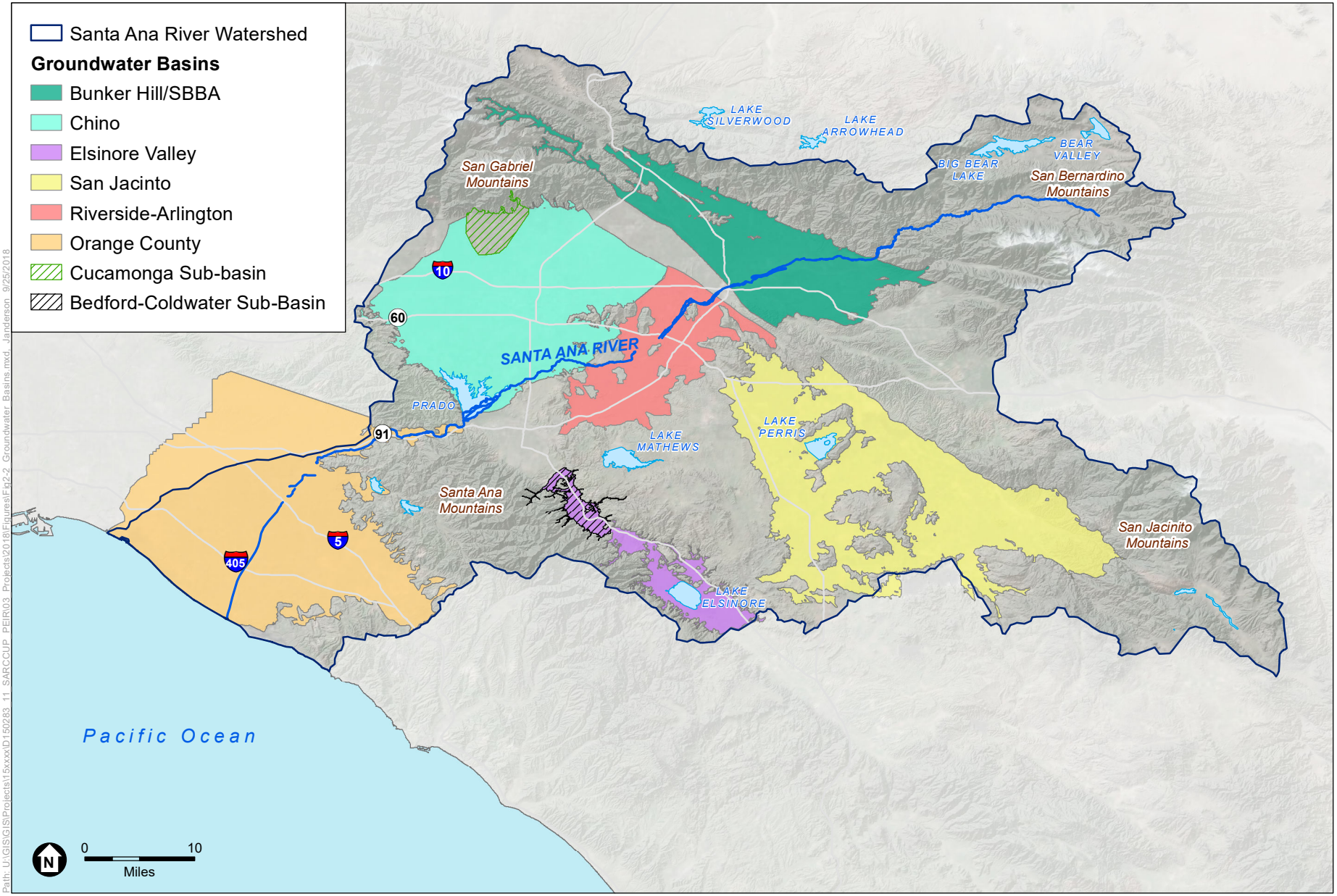
SOURCE: ESRI

SARCCUP

Figure 2-1

Regional Location Map and Partner Agencies

ESA



SOURCE: ESRI

SARCCUP

Figure 2-2
SARCCUP Groundwater Basins

ESA

2.3 SARCCUP Objectives

The partner agencies currently rely on water imported from the Sacramento-San Joaquin Bay Delta (Delta) and the Colorado River Aqueduct (CRA) to meet demands within their service areas. Currently, the agencies rely on imported water at approximately the following percentages: IEUA – 25 percent; EMWD – up to 75 percent; SBVMWD – 25 percent; WMWD – 25 percent; OCWD – 15 to 30 percent. The curtailment of imported supplies from the Delta due to natural or manmade interruptions has the potential to impact water supply reliability in the Santa Ana River watershed. The snowpack in the Sierra Mountains, water levels in Lake Mead, and groundwater storage levels throughout California have recently experienced historic lows.

> *SARCCUP would increase DYY from local groundwater basins in the watershed to offset future reductions in water supply, whether due to climate change or natural or manmade supply cutbacks.*
>
> *SARCCUP activities support the goals of the One Water One Watershed 2.0 Plan (2014), which is the Santa Ana River Watershed's Integrated Regional Watershed Management Plan (IRWMP).*

For a resilient water supply and use in the watershed, a balance is also needed to improve native species' population and habitat in the Santa Ana River. Invasive plants such as *Arundo donax* use significantly more water than native plant species and have aggressively altered the habitat for endemic fish species, such as the Santa Ana Sucker, by choking out conditions for spawning, foraging, and refugia. Through SARCCUP's habitat improvements element, the Santa Ana sucker's habitat will more than double and the remaining *Arundo donax* in the Santa Ana River will be removed.

> *SARCCUP would reduce water demand through removal of Arundo donax, a water-intensive, non-native plant within the Santa Ana River Watershed.*
>
> *SARCCUP would enhance the watershed environment through restoration of existing riparian habitat and creating new habitat for a federally listed native freshwater fish species, the Santa Ana sucker (Catostomus santaanae). This will also support and facilitate obtaining permits from the state and federal wildlife agencies for water supply projects along the Santa Ana River.*

2.4 SARCCUP Partner Agencies

2.4.1 Santa Ana Watershed Project Authority

SAWPA was formed in 1968 as a planning agency and reformed in 1972 with a mission to facilitate communication, identify emerging opportunities, develop regional plans, secure funding, and implement programs that benefit the watershed (SAWPA 2016b). SAWPA owns and operates the Inland Empire Brine Line and facilitates working groups to address water resource programs, beneficial use assurance, or watershed improvement. SAWPA member agencies are described below.

2.4.2 Inland Empire Utilities Agency

IEUA is a wholesale distributer of imported water and a regional wastewater treatment agency. Formed in 1950, IEUA supplies supplemental imported water from the Metropolitan Water District of Southern California (MWDSC) to municipalities in San Bernardino County within the Chino and Cucamonga Groundwater Basins. IEUA also performs groundwater desalination, wastewater treatment, recycled water distribution, and groundwater recharge. IEUA shares in the responsibility for managing groundwater and surface water resources in its service area and participates in watermasters for the Chino Basin and Santa Ana River. IEUA has specific responsibilities in maintaining flows at the Prado Dam on the Santa Ana River. IEUA serves over 242 square miles in western San Bernardino County and provides wholesale imported water from MWDSC to seven retail agencies, including the City of Chino, City of Chino Hills, City of Ontario, City of Upland, Monte Vista Water District, Cucamonga Valley Water District, and Fontana Water Company, as well as the contracting agency San Antonio Water Company. IEUA is also a partner in the Chino Basin Desalter Authority (CDA) under a Joint Exercise of Powers Agreement (JPA) by a group of local agencies, including: City of Chino, City of Chino Hills, City of Norco, City of Ontario, IEUA, Jurupa Community Services District (JCSD), Santa Ana River Water Company (SARWC), and WMWD.

2.4.3 Western Municipal Water District

WMWD was formed in 1954 to bring supplemental water to western Riverside County and provides water and wastewater services to retail customers and wholesale agencies. WMWD water supplies include imported water from MWDSC, local groundwater, and recycled water. WMWD shares in the responsibility for managing groundwater and surface water resources in its service area and participates in watermaster functions for the Santa Ana River, San Bernardino Basin Area, Chino Groundwater Basin, and Santa Margarita River. Its specific responsibilities include replenishing groundwater when extractions exceed amounts specified in the judgements and for maintaining flows at Prado Dam on the Santa Ana River.

Within the Santa Ana River watershed, WMWD provides retail water service to its Riverside service area and wholesale water service to Box Springs Mutual Water Company, City of Corona, City of Norco, City of Riverside Public Utilities, Eagle Valley Mutual Water Company, Elsinore Valley Municipal Water District, Jurupa Community Services District, and Temescal Valley Water District. In addition, Home Gardens County Water District, Riverside Highlands Water Company, Rubidoux Community Services District, and Santa Ana River Water Company are within the WMWD service area but do not currently receive water. WMWD also provides retail water service to its Murrieta and Rainbow service areas, and wholesale water service to Rancho California Water District, all of which are outside the Santa Ana River watershed and are not proposed to be part of SARCCUP.

2.4.4 Orange County Water District

OCWD is a special district formed in 1933 by an act of the California Legislature (OCWD Act). OCWD manages the groundwater basin that underlies north and central Orange County pursuant

to the OCWD Act. Water produced from the basin is the primary water supply for approximately 2.4 million residents living within the service area boundaries. The mission of OCWD includes sustainably managing the Orange County Groundwater Basin. Additionally, as a special act district listed in Water Code Section 10723 (c)(1), OCWD is the exclusive local agency within its jurisdictional boundaries with powers to comply with California's Sustainable Groundwater Management Act (SGMA). In accordance with SGMA, OCWD submitted an Alternative to a Groundwater Sustainability Plan in January 2017. OCWD's powers also include regulating and controlling the storage of water and the use of groundwater basin storage space, purchasing and importing water for groundwater replenishment, and providing for the protection and enhancement of the environment within and outside OCWD in connection with the water activities of the district.

2.4.5 Eastern Municipal Water District

EMWD was organized as a Municipal Water District in 1950 for the primary purpose of importing Colorado River water to its service area in order to augment local water supplies. The mission of EMWD is to provide safe, reliable, economical, and environmentally sustainable water, wastewater, and recycled water services to its customers. EMWD's four primary product and service categories include providing potable water; wastewater collection and treatment; recycled water and conservation; and water, wastewater, and recycled connections within a 555-square-mile service area in Riverside County.

Along with the implementation of its recycled water services and systems, EMWD continues to develop a diverse mix of supplies including the use of imported water and groundwater recharge. Currently, MWDSC serves as EMWD's primary water importer, providing up to 75 percent of its water supply through the Colorado River Aqueduct and its connections to the State Water Project (SWP). Approximately 25 percent of EMWD's potable water demand is supplied by EMWD groundwater wells found mostly in the Hemet and San Jacinto areas.

2.4.6 San Bernardino Valley Municipal Water District

SBVMWD was formed in 1954 as a regional water supply agency with a service area that covers about 353 square miles in southwestern San Bernardino County and a population of about 660,000. Its mission is to find and deliver water to supplement surface water and groundwater supplies in the most populated areas of San Bernardino County. Its enabling act includes a broad range of powers to provide water, groundwater replenishment, storm water and wastewater treatment and disposal, recreation, and fire protection services.

SBVMWD is a water wholesaler, delivering imported and local water supplies to local water retailers. SBVMWD contracts with the SWP to provide imported water to the region and also manages groundwater storage within its boundaries, which include the cities and communities of San Bernardino, Colton, Loma Linda, Redlands, Rialto, Bloomington, Highland, East Highland, Mentone, Grand Terrace, and Yucaipa.

2.4.7 Orange County Coastkeeper

OCCK, founded in 1999, is a nonprofit clean water organization that serves as a proactive steward of fresh and saltwater ecosystems. OCCK works collaboratively with both public and private sectors to achieve healthy, accessible, and sustainable water resources for the region. OCCK promotes education of water resources and are advocates for the restoration and conservation of Orange County's coast, rivers, and streams.

2.5 SARCCUP Operations

2.5.1 SARCCUP Decision Support Model

As a key component to managing water and groundwater resources on a regional scale, the SARCCUP partner agencies prepared a Decision Support Model (DSM) that established an operational framework for SARCCUP (SAWPA, 2018a). The DSM compiled data from each agency regarding local water budgets, water demands, supplies, an assessment of the reliability of those water supplies, groundwater storage capacity, groundwater management constraints, recharge capacity, existing infrastructure available to convey water between agencies, and recommended infrastructure needed to meet SARCCUP objectives. This data was processed through the DSM to establish an operating framework that provides for water accounting, storage budgets, and transfer requirements. The following is a summary of the input data used to develop the DSM.

Regional Water Budgets

Regional water budgets include historical and projected water supplies and demands for the partner agencies and, where available, for the retail agencies in their services areas. Historical water supply data includes annual and monthly water supplies by source for the most recent available period. SARCCUP DSM used historical supply data and associated hydrologic conditions to apply seasonal usage patterns to help identify potential bottlenecks and constraints of the proposed project. Future water supply and demand projections were used from the 2015 Urban Water Management Plans for each agency.

Projected Water Demands

Table 2-2 summarizes the total historical and future demands for each partner agency. The SARCCUP database includes a breakdown of demands by customer type for each retail agency, where available. Demand is shown in acre-feet per year (AFY).

TABLE 2-2
AGENCY HISTORICAL DELIVERIES (2015) AND PROJECTED WATER DEMANDS (2020-2040)

SARCCUP Agency	Year Type	Historical Deliveries (AFY)	Future Projected Demands (AFY)				
		2015	2020	2025	2030	2035	2040
SBVMWD	Calendar	137,046	194,791	203,452	210,825	218,940	226,369
WMWD[a]	Calendar	79,895	110,787	114,040	123,516	122,895	132,999
EMWD	Annual	145,968	197,901	218,700	235,800	252,600	268,200
IEUA[b]	2015: Normalized FY, 2020-2040: Calendar	199,702	210,588	225,923	242,732	254,721	278,017
OCWD[c]	FY	442,048	462,807	483,564	504,321	525,079	546,082
SARCCUP Total		1,000,203	1,176,874	1,245,679	1,317,194	1,374,235	1,451,667

[a] Annual totals are inclusive of demands on WMWD only, including imported water from Metropolitan and desalted groundwater. It does not include demands that would be met by other local supplies. Reference is from the WMWD Final 2015 UWMP, Table 4-7 note (WMWD 2015).

[b] Total regional demand includes imported water, which is provided by IEUA and WFA, recycled water, groundwater and local surface water, per the 2015 Urban Water Management Plan. These values represent total demand from each agency that are met through several different supply sources. Recycled water demand for agriculture use is not included in these totals because it was excluded from the land use based projections.

[c] Total demand includes the use of groundwater, surface water from Santiago Creek and Irvine Lake, recycled water, and imported water. These agency demands were later updated in the model to constant 447,000 AF per year.

Source: SAWPA 2018a

Projected Water Supplies

The partner agencies have access to multiple water supplies to meet their system demands. Appendix A of the SARCCUP DSM has a breakdown of historical and future supply sources by retail agency, where available (SAWPA 2018a). Water supply sources include:

- Imported water
- Local groundwater
- Desalted groundwater
- Local surface water
- Recycled water
- Water purchases from others

The numeric totals for all years are included in **Table 2-3**, below.

TABLE 2-3
PROJECTED WATER SUPPLIES FOR ALL SARCCUP AGENCIES (AFY)

Supply Source	2015	2020	2025	2030	2035	2040
Imported	263,067	404,983	428,278	453,958	477,979	498,515
Local Groundwater	245,009	334,963	356,016	376,804	387,564	387,564
Desalted Groundwater	27,641	35,467	38,567	38,567	38,567	38,567
Local Surface Water	234,431	243,960	243,960	243,960	243,960	243,960
Recycled Water	117,195	137,409	157,138	165,598	174,258	182,218
Purchased from Others	24,661	30,100	25,375	26,496	28,217	27,389
Total	**912,004**	**1,186,882**	**1,249,334**	**1,305,383**	**1,350,545**	**1,378,213**

Source: SAWPA 2018a
Note: AFY = acre-feet per year

Regional Water Conveyance Facilities

The regional water conveyance infrastructure provides the ability for water to be recharged, extracted, delivered, or exchanged between the partnering agencies. The DSM includes a more detailed diagram of infrastructure used to operate the program. In general, the schematic in **Figure 2-3** describes the imported water interconnections and primary connections between partner agencies that influence the ability to convey or store water.

Groundwater Storage

The following is a list of the SARCCUP groundwater basin storage capacities:

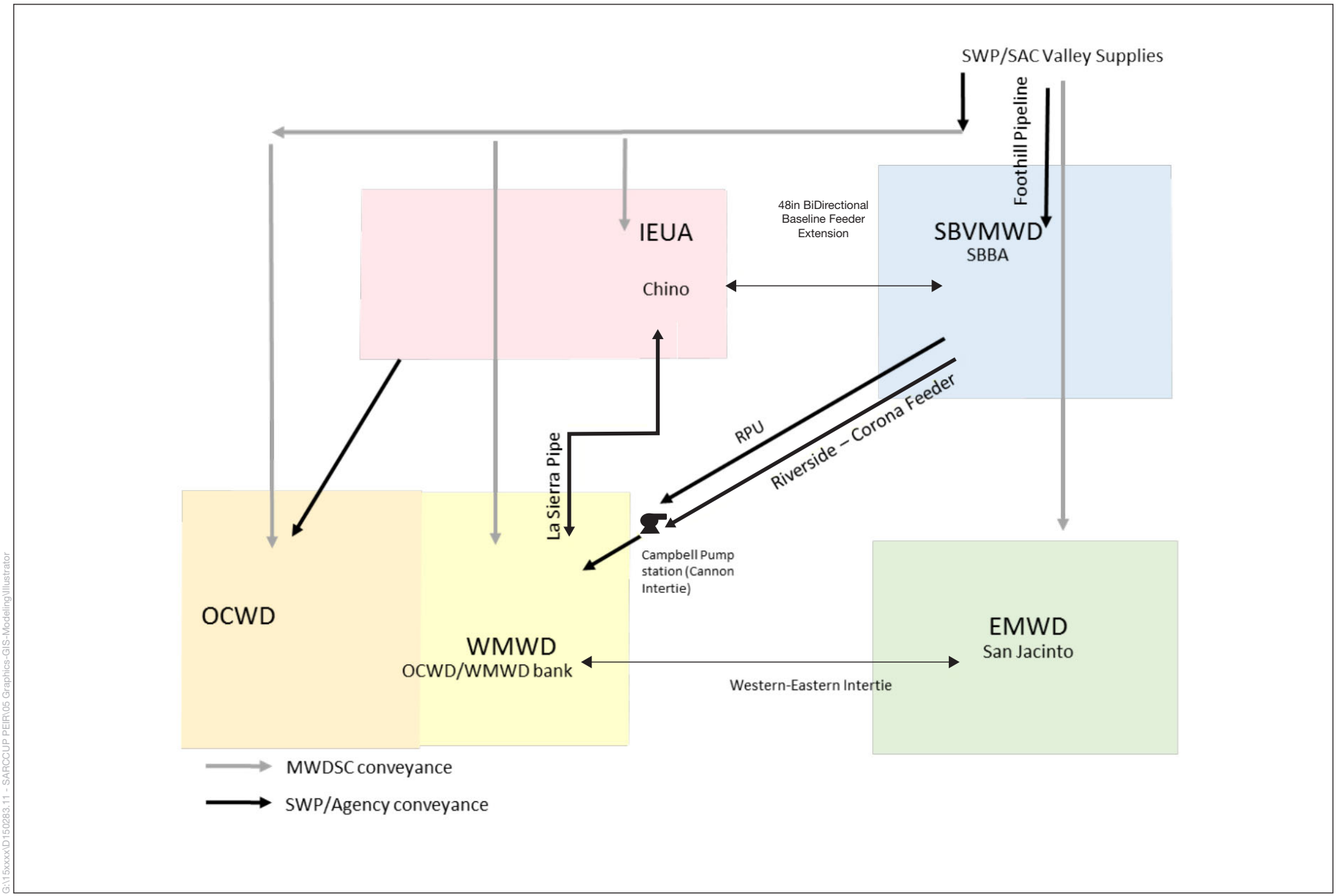
- 0 – 50,000 AF in the Chino groundwater basin
- 64,000 AF in the SBBA groundwater basin
- 19,500 AF in the San Jacinto groundwater basin
- 36,000 – 50,000 AF in the Orange County groundwater basin
- 6,000 – 29,500 AF in the Elsinore and Riverside groundwater basins
- 0 – 15,000 Central Valley Basin Bank

SARCCUP Deliveries

Water delivered to partner agencies can be accomplished by three main mechanisms: 1) direct delivery, 2) storage exchanges, and 3) in-lieu exchanges.

Direct Delivery

It is assumed that agencies with a groundwater bank in their service area will access that bank first because of the low extraction and conveyance energy required. Each agency has a preferred groundwater bank to access and extractions from that preferred bank will occur as long as the supply in its account does not have a zero balance.



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SOURCE: SAWPA, 2018a

SARCCUP

Figure 2-3
Schematic Conceptual System

ESA

When an agency does not have enough storage in its own account, and no other accounts within the bank are available for a transfer, a direct delivery from another basin can occur.

Direct deliveries from a non-local basin are constrained by conveyance connectivity and capacity. If groundwater storage has been exhausted for an agency in its own basin, either storage exchange or in-lieu exchanges may be needed.

Storage Exchanges

When storage for an agency drops below a set threshold (target volume in a bank), it will trigger the need for more water via a storage exchange. The storage exchange will move water from an account of one agency to that of another. Storage exchanges between two agencies can happen only if:

- Agency A is below its target storage in a basin and has water above its target in other basins
- Agency B is above its target in a basin

At least two agencies are involved in any water transfer event. The main elements of the storage exchanges are:

- Storage exchanges occur annually
- The amount of an exchange is limited to the volume above the target storage level of the agency providing storage volume
- When more than one agency desires an exchange, the exchange that produces the most cost savings (minimizing costs) will occur

In-Lieu Exchanges

The MWD system can be used for in-lieu exchanges between SARCCUP agencies. Instead of physically pumping the water from a bank, the overlying agency can provide their portion of MWD water and then pump the underlying groundwater for their use. In essence, one agency receives MWD water in lieu of SARCCUP water, while the other agency reduces its MWD delivery and increases its SARCCUP delivery. The in-lieu exchanges, on the backbone of the regional delivery system, offer the most effective way to deliver SARCCUP water among partner agencies.

The main assumptions to trigger an in-lieu exchange is that one agency has storage lower than the target storage in one basin but does not have storage in other basins that can be exchanged. This condition could occur because the agency does not have any physical water stored in other basins or could be because the agency is at or below storage target at other basins.

MWD deliveries in lieu of SARCCUP stored water do not go into SARCCUP storage, but are delivered directly to an agency. The largest in-lieu exchanges occur in the Chino Basin and San Bernardino Basin Area (SBBA) groundwater banks, as they have more storage than needed for their own use. In Chino, the maximum amount of in-lieu MWD water they could provide is set to 8,000 AFY. In the SBBA groundwater basin, the maximum stored SARCCUP water from other agencies that SBVMWD could provide from the SWP in lieu of direct SARCCUP deliveries is

based on a dynamic rule that evaluates the current SBVMWD allocation and compares it to the amount SBVMWD needs for its customers. Any amount remaining after SBVMWD meets the needs of its customers could be available for in-lieu exchanges.

Table 2-4 lists retail water supply agencies within the region that rely on the groundwater and imported water resources provided by the SARCCUP partner agencies.

TABLE 2-4
SARCCUP RETAIL AGENCY SUMMARY

SARCCUP Agency	Retail Agencies in Service Area	Water Service Provided by SARCCUP Agency (Water Source)	Abbreviation
SBVMWD	East Valley Water District	Wholesale (Raw Imported)	EVWD
	City of Loma Linda	None	Loma Linda
	City of Redlands	Wholesale (Raw Imported)	Redlands
	City of Rialto	Wholesale (Groundwater)	Rialto
	San Bernardino Municipal Water Department	Wholesale (Raw Imported)	SBMWD
	Riverside Highlands Water Company	None	RHWC
	West Valley Water District	Wholesale (Raw Imported and Groundwater)	WVWD
	Yucaipa Valley Water District	Wholesale (Raw Imported)	YVWD
	City of Colton	None	Colton
WMWD	Riverside Service Area, Murrieta Service Area and Rainbow Service Area	Retail (Treated Imported and Purchased Groundwater)	WMWD Retail
	Box Springs Mutual Water Company	Wholesale (Treated Imported)	BSMWCo
	City of Corona	Wholesale (Raw and Treated Imported)	Corona
	City of Norco	Wholesale (Desalter)	Norco
	City of Riverside	Wholesale (Treated Imported)	Riverside
	Eagle Valley Mutual Water Company	Wholesale (Raw Imported)	EVMWCo
	Elsinore Valley Municipal Water District	Wholesale (Treated Imported)	EVMWD
	Rancho California Water District	Wholesale (Raw Imported)	RCWD
	Jurupa Community Services District	None	JCSD
	Temescal Valley Water District	Wholesale (Treated Imported)	TVWD
	Home Gardens County Water District	None	HGCWD
	Riverside Highlands Water Company	None	RHWC
	Rubidoux Community Services District	None	RCSD
	Santa Ana River Water Company	None	SARWC
EMWD	EMWD retail service areas	Retail (Treated and Raw Imported, Locally Treated, Groundwater)	EMWD Retail
	City of Hemet Water Department	Wholesale	HWD
	City of Perris Water System	Wholesale	Perris
	City of San Jacinto Water Department	Wholesale	SJWD
	Lake Hemet Municipal Water District	Wholesale	LHMWD
	North Perris Water System	Wholesale	North Perris
	Nuevo Water Company	Wholesale	NWCo
	Rancho California Water District	Wholesale	RCWD

SARCCUP Agency	Retail Agencies in Service Area	Water Service Provided by SARCCUP Agency (Water Source)	Abbreviation
IEUA	City of Chino	Wholesale (Raw Imported and Recycled Water)	Chino
	City of Chino Hills	Wholesale (Raw Imported and Recycled Water)	Chino Hills
	City of Ontario	Wholesale (Raw Imported and Recycled Water)	Ontario
	City of Upland	Wholesale (Raw Imported and Recycled Water)	Upland
	Monte Vista Water District	Wholesale (Raw Imported and Recycled Water)	MVWD
	Cucamonga Valley Water District	Wholesale (Raw Imported and Recycled Water)	CVWD
	Fontana Water Company	Wholesale (Raw Imported and Recycled Water)	FWCo
	San Antonio Water Company	None	SAWCo
OCWD	City of Anaheim, Anaheim Public Utilities	Groundwater Producer	Anaheim
	City of Buena Park	Groundwater Producer	Buena Park
	East Orange County Water District	Groundwater Producer	EOCWD
	City of Fountain Valley	Groundwater Producer	Fountain Valley
	City of Fullerton	Groundwater Producer	Fullerton
	City of Garden Grove	Groundwater Producer	Garden Grove
	Golden State Water Company	Groundwater Producer	GSWC
	City of Huntington Beach	Groundwater Producer	Huntington Beach
	Irvine Ranch Water District	Groundwater Producer	IRWD
	City of La Palma	Groundwater Producer	La Palma
	Mesa Water District	Groundwater Producer	Mesa Water
	City of Newport Beach	Groundwater Producer	Newport Beach
	City of Orange	Groundwater Producer	Orange
	City of Santa Ana	Groundwater Producer	Santa Ana
	City of Seal Beach	Groundwater Producer	Seal Beach
	Serrano Water District	Groundwater Producer	SWD
	City of Tustin	Groundwater Producer	Tustin
	City of Westminster	Groundwater Producer	Westminster
	Yorba Linda Water District	Groundwater Producer	YLWD

Source: SAWPA 2018a

Regional Water Infrastructure

The partner agencies operate water infrastructure throughout the Santa Ana River watershed that will facilitate future water transfers. The infrastructure is interconnected amongst the partner agencies in the Counties of San Bernardino, Riverside, and Orange. Additional infrastructure is needed to facilitate the movement throughout the region. **Table 2-5** lists the available infrastructure after SARCCUP has been implemented. Regional water infrastructure would be

used when needed to move water between sub-watersheds for recharge or delivery following the SARCCUP DSM.

TABLE 2-5
REGIONAL WATER INFRASTRUCTURE

Type	SARCCUP Database Facility Count
Conveyance	61[a]
Turnouts	28
Booster Stations	10
Extraction/Injection Wells	10
Desalters	7
WTPs	16
WRFs	20
Recharge Basins	37[b]
Surface Reservoirs	9

Source: SAWPA 2018a

[a] May include multiple reaches of same conveyance.

[B] This includes all infrastructure associated with SARCCUP use of recharge at the four banks.

2.6 SARCCUP Description

To facilitate conjunctive use, the districts would utilize their existing infrastructure or construct new infrastructure to create a conveyance network between their respective groundwater basins. New infrastructure would consist of groundwater wells, pipelines and pumping stations constructed within various district service areas throughout the watershed. Responsibility for implementing SARCCUP has been divided among the members. Consequently, partnering agencies are preparing separate environmental impact assessments for construction of SARCCUP-related facilities that are occurring within their service areas (see **Table 2-6**). Five projects are analyzed in project-level detail in this EIR. The remaining projects described below would undergo or have already undergone separate CEQA compliance documentation.

2.6.1 Conjunctive Use Element

SARCCUP's Conjunctive Use Program would develop new infrastructure and incorporate existing infrastructure to recharge and store up to 60,000 AFY during each of three wet years in a decade, for a total storage capacity of up to 180,000 AF. SARCCUP also would develop extraction capacity to pump approximately 60,000 AF in up to three dry years or under emergency conditions. It is estimated that dry conditions could occur during three out of every 10 years (may vary due to actual hydrology). Construction of facilities for the Conjunctive Use Program would occur within property owned by at least one of the partner agencies, public rights-of-way, or property acquired by one of the five agencies.

TABLE 2-6
SARCCUP INITIATIVES

SARCCUP Element	Description	Lead Agency Implementing Component	Analyzed at Project level in this Draft EIR?*
SARCCUP Water Bank	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	All	Yes
Chino Basin Production Wells and Treatment	Use of new and existing wells, well treatment and interconnections within IEUA's service area.	IEUA	Yes
Riverside-Arlington Basin Wells and Pipeline	Use of a new Cannon pump station, existing wells, refurbishment of ID-4 Crossing, and interconnections within WMWD's service area.	WMWD	Yes
Arundo donax (Habitat)	Remove water-intensive invasive weed along the Santa Ana River to increase surface flows.	OCWD	Yes
Orange County (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	OCWD	Yes
Chino Basin (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	IEUA	Yes
Riverside-Arlington Basin (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	WMWD	Yes
Elsinore Basin (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	WMWD	No
San Bernardino Basin (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	SBVMWD	No
San Jacinto Basin (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	EMWD	No
Cucamonga Basin	Use of new and existing wells, well treatment reservoir replacement, and interconnections within IEUA's service area.	CVWD	No
San Jacinto Basin Facilities	Use of new and existing wells, recharge basins, well treatment and interconnections within EMWD's service area.	EMWD	No
Santa Ana Sucker (Habitat)	Modify four tributaries along the Santa Ana River to create aquatic habitat.	SBVMWD	No
Water Conservation	Implement conservation-based rates and Smartscape to attain water savings from retail agencies and residential/commercial customers.	SAWPA	No
La Sierra Pipeline and Sterling Pump Station	Use of a new pump station, pipelines and interconnections within WMWD's service area	WMWD	No
Elsinore Basin Wells	Use of new and existing wells, well treatment and interconnections within EVMWD's service area.	WMWD	No

* Projects not receiving project-level analysis in this EIR will undergo or have already undergone project-specific separate CEQA analysis.

Water purchased for storage in the SARCCUP facilities would include water purchased by the partner agencies collectively and individually, as well as transfers between the agencies. Sources of water for storage under SARCCUP include, but are not limited to:

- Imported water purchased from MWDSC
- Imported water supplies available to SBVMWD
- Extraordinary supply water purchased on the market and wheeled to the storage locations. Extraordinary supply is defined by MWDSC as "extraordinary increases in local supplies in times of shortage above the base period, including such efforts as purchasing water transfers or overproducing groundwater yield." Wheeling is the conveying of water through the unused capacity in a pipeline or aqueduct by another water provider. Water wheeling is provided for under Section 1810 of the California Water Code
- Surplus SBVMWD State Water Project water purchased by MWDSC
- Locally stored groundwater

2.6.2 Habitat Restoration Component

The Habitat Restoration component meets the project objectives for enhancing watershed environment. This component would create approximately 3.5 miles (18,250 linear feet) of restored in-stream habitat for the Santa Ana Sucker and 40.5 acres of restored riparian habitat that also would benefit the Santa Ana sucker. This restoration would be undertaken by SBVMWD, on behalf of all of the agencies that are participating in the Upper Santa Ana River Habitat Conservation Plan, at locations throughout Riverside County along the Santa Ana River and its tributaries, including Hidden Valley Creek, Lower Hole Creek, Anza Creek, and Old Ranch Creek, which are located along the Santa Ana River upstream of State Route (SR) 60 and downstream of Interstate (I) 15. The CEQA process for this SARCCUP component has already been initiated at the project level by SBVMWD as the lead agency and is expected to be released in late 2018.

This restoration project has implications for water supply due to the removal of non-native trees and installation of native plants. This tradeoff in vegetation results in a decrease in uptake and evapotranspiration, which allows for more water to be retained in the watershed. It is estimated that approximately 800 AFY of water may be saved through this reduction in evapotranspiration.

A coalition of local water agencies has begun planning a regional multi-species Endangered Species Act Section 10 habitat conservation plan, which makes it essential to create Santa Ana Sucker habitat. Its completion and implementation will also be promoting the creation, enhancement, and protection of Santa Ana Sucker habitat. Without additional Santa Ana Sucker habitat, it will be very difficult, if not impossible, to build new groundwater recharge facilities due to the need to obtain federal permits that meet Endangered Species Act requirements. Sustaining fish habitat is critical watershed planning for the following reasons:

- In order to obtain federal permits to build large infrastructure projects for groundwater recharge the Endangered Species Act requires "incidental take" coverage for Santa Ana Sucker, which was listed as threatened by the U.S. Fish and Wildlife Service in April 2000

- The current condition of the Santa Ana Sucker population and condition of habitat within the Santa Ana River must be improved to ensure long-term resilience of the species.
- In order to improve the current Santa Ana River population of the species, local entities must provide additional spawning and refugia habitat along the main-stem of the River. Based on current conditions, the only viable method is to create and restore tributary habitat and increase the number of stream miles the Santa Ana Sucker can use to spawn.

2.6.3 Water Use Efficiency and Conservation Elements

SARCCUP includes two components that would meet the objectives to promote water use efficiency and conservation throughout the Santa Ana River watershed. These components do not involve construction or operation of physical features. It is estimated that up to 2,400 AFY of water supply can be provided through conservation-based water rates and the Smartscape Program, as described below. SAWPA would provide technical assistance for implementing conservation-based water rates. SAWPA would partner with OCCK to implement the Smartscape Program.

Conservation-Based Water Rates

This component would result in expansion of the existing water use efficiency initiatives that received state grant funding during the Integrated Regional Watershed Management 2015 Round to provide support to up to five retail water agencies in the Santa Ana River watershed for conservation initiatives. Workshops in the Santa Ana River Watershed (total of up to two workshops) would be held targeting the watershed's retail water agencies' elected officials and staff. These workshops would review the tools available to the water agencies for adopting conservation-based rates. Conservation-based rate structures are proposed to be impl`emented by up to five retail water agencies located in the Santa Ana River Watershed. Funding would be provided to the five agencies for items needed to adopt conservation-based rate structures such as but not limited to: implementation of a rate study, billing support needs, acquisition of weather data, Proposition 218 notices, etc. A new policy or existing policy adopted by the Project Agreement 22 Committee would be developed that specifies the reimbursement process for retail water agencies. The policy would include stipulations on water conservation reporting. Tools may be developed to assist the five retail water agencies to adopt conservation-based water rates. These tools may include information to determine outdoor budgets and local weather data.

Smartscape

The Smartscape Program would be implemented to provide, when requested by SARCCUP partner agencies, education and outreach, training, and communication services about drought-tolerant landscape design, installation, and maintenance. This support includes conducting training workshops and seminars for homeowners, landscape professionals, and water retail support agency staff; operation of a phone hotline to answer questions; distribution of training manuals, brochures, flyers, and reports; social media posts; and outreach to local schools. The support would also assist entities that have drought-tolerant landscaping and need assistance with adapting to site-specific soil, water, and vegetation conditions. This would include Low Impact Development (LID), which allows storm water to be filtered into the ground or reused for

landscaping, rather than sent to a concrete storm drain/channel that drains to the ocean. OCCK, Inland WaterKeeper, and SARCCUP partner agencies would assist in the implementation of this program. SAWPA would oversee OCCK and Inland Empire WaterKeeper throughout implementation of this program.

2.6.4 Arundo Water Demand

Giant reed (*Arundo donax* or arundo) is a genus of tall perennial grasses that includes six species native to the warmer regions of Western Europe. Giant reed is the largest member of the genus and one of the largest living grasses. Giant reed is native to Europe and is found associated with abundant fresh water in the Mediterranean region. It was purposely introduced to California in the 1820s when it was planted along the banks of drainage canals in the Los Angeles area for erosion control. Giant reed was also used as thatching for roofs and fodder for domestic animals. It came to California without the natural controls found in its native land and took over many streams and other areas where water is abundant near the surface. Giant reed reproduces rhizomatically with new stalks sprouting from roots and from pieces of stalk, generally larger than 12 inches, which become rooted and grow into new plants. Stalks break under high flows and replant themselves downstream. Giant reed is reported to grow up to 3 inches per day under optimal conditions. Such growth results in the uptake of large amounts of water. Thus, removal of giant reed is expected to decrease evapotranspiration (ET) and increase water in the watershed. Thus, similar to the Santa Ana sucker habitat restoration, the arundo removal project has implications for water supply.

Estimates for ET rates for arundo are highly variable; a recent report by the California Invasive Plant Council (CIPC) for the SWRCB notes that for dense stands of arundo, ET is primarily transpiration from the plant rather than evaporation from the soil (CIPC 2011). The CIPC estimates that in Southern California arundo transpiration reduces water depth by approximately 20 mm/day per acre. This results in a loss of 24 AFY per acre of arundo (CIPC 2011). In comparison, native plants reduce water depth by approximately 3.3 mm/day per acre (CIPC 2011). Therefore, when arundo is replaced by native plants, as is proposed for SARCCUP, there would be a reduction in water demand by riparian vegetation, and the net gain would be approximately 16.7 mm/day or approximately 20 AFY per acre. The SARCCUP arundo removal project would reduce water demand by approximately 12,800 AFY due to removal of 640 acres of arundo (i.e., 640 acres of arundo * 20 AFY/acre = 12,800 AFY).

2.7 References

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CHAPTER 3
Project Description

3.1 Introduction

This Draft EIR provides an assessment of impacts for facilities and activities associated with implementing the following projects designed to facilitate SARCCUP (collectively, proposed Project):

- Chino Basin Production Wells, Refurbishment and Treatment System
- Arlington Production Wells and Pipeline
- Cannon Pump Station
- ID-4 Colorado River Aqueduct (CRA) Crossing Refurbishment
- Santa Ana River Arundo Removal

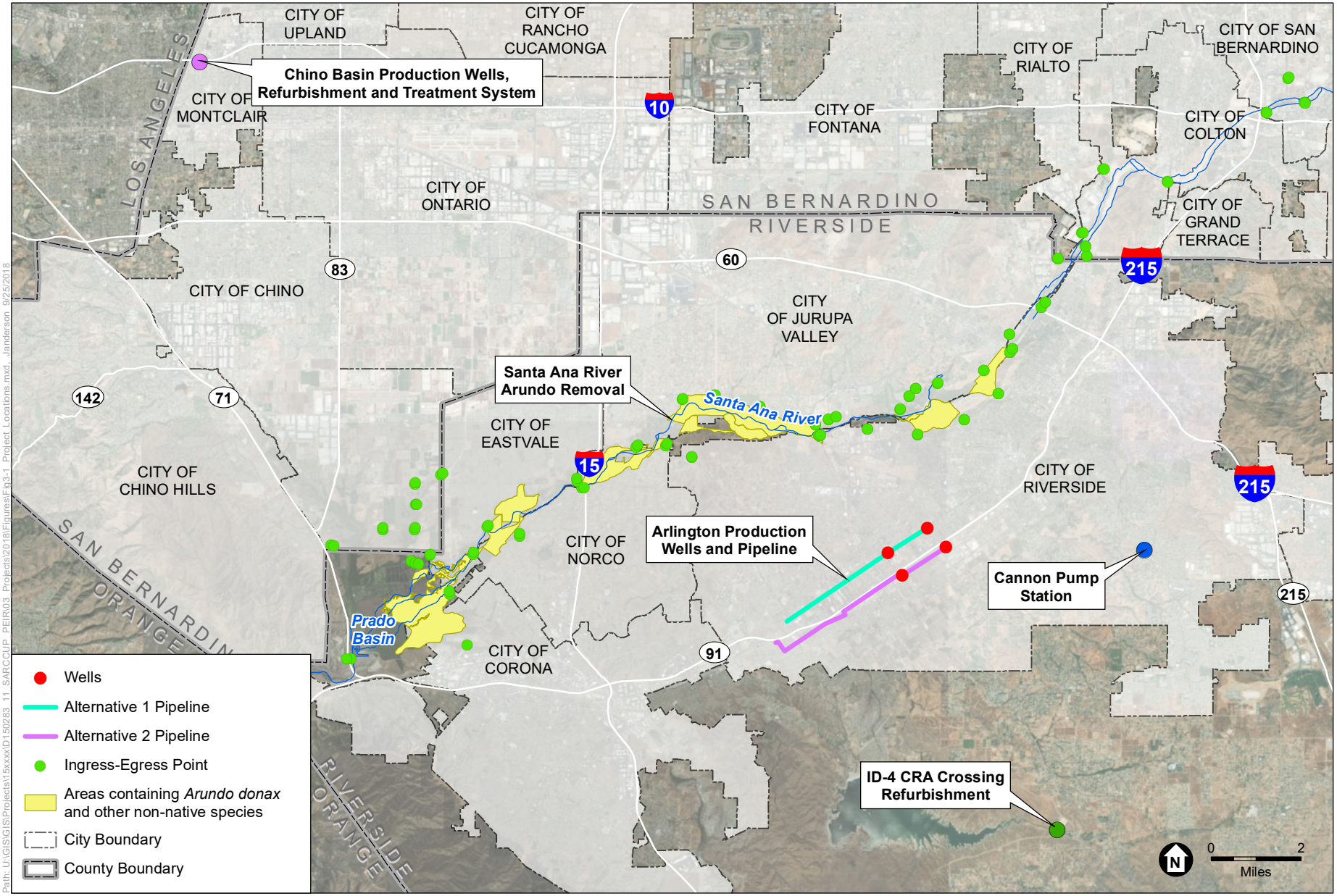
Proposed Project activities include construction of new groundwater production wells, well refurbishment and installation of groundwater treatment systems in the City of Montclair; the construction of extraction wells, pipelines, pump stations, and ancillary facilities in the City of Riverside; pipeline refurbishment in unincorporated Riverside County; and invasive weed and non-native species removal in the Santa Ana River. These projects would be implemented by three of the five partner agencies: IEUA, WMWD, and OCWD.

3.2 Project Location

The proposed Project would be implemented within the service areas of IEUA (Chino Basin) and WMWD (Riverside-Arlington Basin) and along 16 miles of the Santa Ana River and tributaries. These proposed Project areas are located in San Bernardino and Riverside counties (see **Figure 3-1**).

3.3 Project Characteristics

The IEUA, in conjunction with WMWD and OCWD, is preparing this EIR to assess the environmental impacts associated with construction of the following SARCCUP connected projects: Chino Basin Production Wells, Refurbishment and Treatment System, Arlington Production wells and Pipeline, Cannon Pump Station, ID-4 Colorado River Aqueduct (CRA) Crossing Refurbishment, and Santa Ana River Arundo Removal.



SOURCE: ESRI; Riverside County; San Bernardino County

SARCCUP

Figure 3-1
SARCCUP Project Locations

ESA

3.3.1 Chino Basin Production Wells, Refurbishment and Treatment System

IEUA-member agency Monte Vista Water District (MVWD) will design and construct a new treatment system for an existing groundwater well, number 34, to extract approximately 3,000 AFY from the Chino Basin. Well 34 is located within the City of Montclair, in the County of San Bernardino (Figure 3-1). This project supports the SARCCUP conjunctive use between the partnering agencies (see **Figure 3-2**).

In addition, the Jurupa Community Services District (JCSD) is proposing to construct an Ion Exchange Treatment Plant (IXTP) at the Well 13 site to remove nitrate from extracted groundwater. The facility would be designed to maintain acceptable nitrate levels in extracted groundwater. This project has the potential to increase JCSD's production from these sources by 4,700 AF annually from its current level. The Well 13 site is located at the intersection of Etiwanda and Philadelphia in City of Jurupa Valley

3.3.2 Arlington Production Wells and Pipeline

WMWD would construct two additional production wells and extend the conveyance pipeline in connection with the existing Arlington Desalter facility. This project supports the SARCCUP conjunctive use between the partnering agencies within the Riverside-Arlington Basin. There are two alternatives for the location of the wells and the conveyance pipeline.

Alternative 1

For one alternative location, Well AD-6 would be located at the intersection of Magnolia Avenue and Jackson Street in the City of Riverside (**Figure 3-3**). AD-6 would be implemented within a grass field adjacent to the Sherman Indian Museum. Well AD-7 would be located at the intersection of Magnolia Avenue and Adams Street in the City of Riverside within a grassy area adjacent to CVS Pharmacy (Figure 3-3). The new pipeline would start at Well AD-7 and run underground west along Magnolia Avenue, connect to Well AD-6 and continue to a point just beyond La Sierra Avenue within the public right-of-way (ROW) to the existing Arlington Desalter facility.

Alternative 2

For the other alternative location, Well AD-6 would be located off Jackson Street in the City of Riverside along a drainage area. The well site is surrounded by residential development (Figure 3-3). Well AD-7 would be located at the intersection of Auto Center Drive and Motor Circle within an automobile park (Figure 3-3). The new pipeline would start at Well AD-7 and run underground along Auto Center Drive, connect to Well AD-6 and continue north on Adams Street, west on Indiana Avenue to Fillmore Street within the public ROW to the existing Arlington Desalter facility.

SOURCE: ESRI; San Bernardino County

SARCCUP

Figure 3-2

Chino Basin Production Wells, Refurbishment and Treatment System

ESA

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SOURCE: ESRI; Riverside County; San Bernardino County

SARCCUP

Figure 3-3
Arlington Production Wells and Pipeline

ESA

3.3.3 Cannon Pump Station

WMWD will design and construct a new interconnection pipeline and corresponding pump station to deliver potable water from Riverside-Bunker Hill basin to the WMWD service area. The new pump station, Cannon Pump Station will be designed to move approximately 10 cfs from the Riverside and/or Bunker Hill groundwater basins into the WMWD service area. This project supports the SARCCUP conjunctive use between the partnering agencies within the Riverside-Bunker Hill Basin. **Figure 3-4** shows the proposed locations of the Cannon Pump Station.

Additionally, WMWD will relocate the existing Crest Booster Station and associated pipelines in the City of Riverside. **Figure 3-4** shows the existing Crest Booster Station and the proposed location. Both the Cannon Pump Station and the relocated Crest Booster Station and associated facilities will be located near the intersection of Alessandro Boulevard and Overlook Parkway within an undeveloped vegetated area (Figure 3-4). Access to the two proposed facilities would be provided by a shared driveway located off of Caulfield Court cul-de-sac.

3.3.4 ID-4 Colorado River Aqueduct Crossing Refurbishment

WMWD owns and operates service connection ID-4, a non-potable water supply, supplying approximately 1,000 AFY of water to agricultural and irrigation customers within the Gavilan Plateau east of Lake Mathews. The pipeline connecting to ID-4 crosses over the CRA and is prone to deterioration. WMWD would implement one of two refurbishment alternatives to ensure the ID-4 Crossing pipe, located at the existing CRA intake facility is protected (**Figure 3-5**). The existing ID-4 Crossing pipe/CRA intake facility is located in unincorporated Riverside County at the foot of the CRA, stemming from Lake Matthews, approximately 600 feet north of the intersection of Kirkpatrick Road and Cajalco Road.

Alternative 1

Protect the existing ID-4 pipe crossing by adding a split casing and sump tank – WMWD would implement a lightweight split casing that covers the ID-4 crossing over the CRA to direct minor or moderate leaks to the proposed sump, a fiberglass-reinforced plastic (FRP) tank located at the existing facility as shown on Figure 3-5.

Alternative 2

Reinforce the existing ID-4 pipe crossing with fiberglass wrapping and HDPE, or CIPP lining – WMWD would reinforce the crossing pipe with fiberglass material outside and with flexible high-density polyethylene (HDPE) or Cured-in-Place Pipe (CIPP) inside. The pipe would be triple layered including its original steel pipe.

SOURCE: Mapbox Satellite Streets; Riverside County

SARCCUP

Figure 3-4
Cannon Pump Station

ESA

SOURCE: Mapbox Satellite Streets; Riverside County

SARCCUP

Figure 3-5
ID-4 CRA Crossing Refurbishment

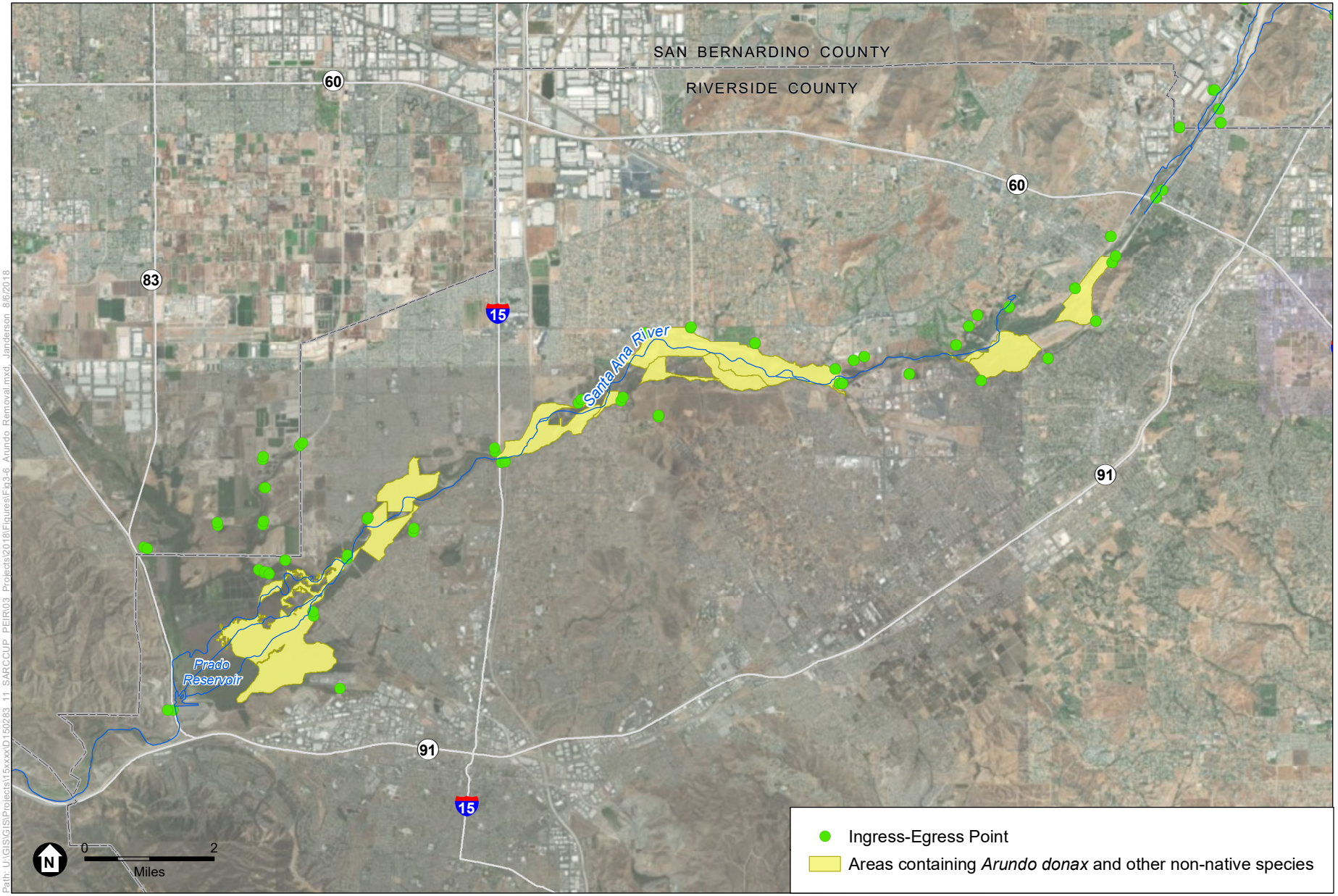
ESA

3.3.5 Santa Ana River Arundo Removal

Approximately 640 acres of arundo would be removed along the Santa Ana River and its tributaries (**Figure 3-6**). The arundo removal project would occur at locations along the Santa Ana River between Prado Basin and the Interstate 10 crossing in San Bernardino. General locations of removal areas and ingress-egress points are shown Figure 3-6. Smaller areas of Arundo to be removed, generally 5 acres or less, are not shown in Figure 3-6 but are located along the Santa Ana River or its tributaries. Arundo removal includes eradication of arundo and other invasive exotic plants, including tamarisk (*Tamarix spp*.); perennial pepperweed (*Lepidium latifolium*); tree of heaven (*Ailanthus altissima*); castor bean (*Ricinus communis*); various palms, (*Phoenix canariensis*) and (*Washingtonia robusta*); pampasgrass (*Cortaderia selloana*); and others.

Arundo removal on the Santa Ana River would start with biomass reduction and removal. The canes would be chipped in place, where possible, to pieces smaller than 3 inches. The chips make good mulch and are too small to sprout. The roots would be left in place to avoid the major excavation that would be required to remove them. A monitoring and maintenance program would be developed by the partnering agencies post removal to ensure continued eradication. New growth would be treated with a U.S. Environmental Protection Agency (EPA) aquatically approved herbicide. Over years of re-treatments, the huge root masses would eventually dry out and be rendered unable to support new plant growth. As re-sprouting of invasives diminishes and giant reed eradication is approached in an area, the need for riparian re-vegetation would be assessed. It is recommended that only local and limited re-vegetation efforts be implemented as dictated by special needs, such as erosion control and native riparian establishment. Monitoring criteria would be established in order to quantify the recovery of the riparian habitat. GIS mapping would be utilized to display target restoration and recovery areas. In areas where natural succession is not establishing native vegetation, restoration activities would occur, such as active planting and seeding to establish a fully functional native riparian habitat.

The river dynamics have led to the expansion of the riparian forest into areas released from competition with invasives. For example, along San Timoteo Creek, removal efforts began in 1997 and eventually 230 acres of giant reed were removed. Today, more than 70 percent of those acres support riparian growth without re-vegetation efforts. On the Santa Ana River main stem where areas greater than 5 acres are covered 100 percent in giant reed, it may be beneficial to replant thickets of native riparian trees to aid in faster natural colonization. However, care must be taken as to the location and timing of such efforts or the re-vegetation and eradication efforts could conflict.



SOURCE: ESRI

SARCCUP

Figure 3-6

Santa Ana River Arundo Removal

ESA

3.4 Project Implementation

3.4.1 Construction Methods

The following describes the activities and methods required to build the various types of water facilities for the Project.

Groundwater Wells and Treatment System

Construction of the groundwater production wells would be accomplished by using reverse-circulation or mud rotary methods and would require the following equipment: one drill rig, two pipe trucks, one trailer-mounted shaker unit, one to three above ground water storage tanks, two standard roll-off bins, and one water truck. Well construction requires drilling activities to occur 24 hours per day, seven days per week. Where sensitive noise receptors may be affected, temporary construction noise barriers would be installed as needed to adhere to local noise ordinances. During construction of the wells the exhaust from the drill rigs would be oriented away from residences, and work areas would be defined to mitigate noise and construction hazards. Drill crews and consultants would address any members of the public before the public would reach a hazardous area.

The well boreholes would be logged by an on-site geologist and subject to sampling and testing. A downhole geophysical survey would be performed in the deeper open boreholes to further characterize stratigraphy and identify target recharge zones.

After each well is drilled, a pump test would be conducted followed by monitoring of the water level recovery. Water levels would be monitored before, during, and after the pump test. Groundwater samples would be collected during the aquifer test as well.

The well drilling area would be approximately 100 feet by 100 feet with each well requiring about one to four weeks to develop. Wells constructed in public rights-of-way would be typically completed with flush mount traffic boxes which would protrude about 1 to 3 inches above surrounding grade to ensure rainwater does not flood into the well. Wells constructed on property owned by one of the partner agencies would typically be constructed with above ground completions extending about 2 to 3 feet above surrounding grade with 4 traffic bollards emplaced around the wellhead for safety.

Conveyance, Pump Stations and Other Ancillary Facilities

SARCCUP projects require the construction of water distribution pipelines to either bring water to recharge facilities or deliver water from extraction facilities to water supply distribution systems. Pipeline construction would primarily occur within the right-of-way of existing roadways and would require temporary construction easements. Typically, construction easements range from 40 to 100 feet wide, depending on location and requirements for material laydown/storage areas and staging areas. Work within the public road rights-of-way could require closure of traffic lanes. Construction would be staged to affect no more than two lanes at a time,

or to allow for traffic flow to continue in both directions, if applicable, along any roadway segment.

Separate staging areas may be located at recharge facilities or other properties owned by one of the partner agencies. Pipelines would be constructed using open trench methods, requiring the use of trucks, backhoes/excavators, cranes, welding materials, shoring, and other support equipment. Excavations for pipelines are anticipated to range from five feet to ten feet and up to 15 feet deep for pipelines of 36 inches in diameter. The excavation footprint would be smaller for pipelines of small diameter. Installation of pipelines is estimated to be between 120 linear feet to 200 linear feet per day.

Other methods, such as pipe-jacking/tunneling methods, could be used to avoid surface features such as major roadway intersections, Waters of the United States, or sensitive habitat areas. Jacking is an operation in which the soil ahead of a steel casing is excavated and brought out through the steel casing barrel while the casing is pushed forward by a horizontal hydraulic jack placed at the rear of a jacking pit. The locations for use of pipe-jacking/tunneling methods would be determined during the design stage.

Arundo Removal

Several techniques and types of tools and equipment would be used to remove giant reed including: removal by hand using loppers, chainsaws, brush cutters, tractor-mounted mulching mowers, arm-mounted tractor/cutter and other approved power equipment. Spraying with an herbicide approved for use in the vicinity of aquatic environments may also be utilized. Care is taken to minimize impacts to native habitat that could result from the transport of personnel and equipment conducting removal activities. Where removal is done by hand, stockpile areas are established in order to chip the stalks after surgical removal. A biologist or other approved specialist supervises removal from sensitive habitat. Small piles of arundo cane no higher than 3 feet can be left in areas where access is poor as long as the piles are above the high-water line and dried. In most areas the material is chipped and scattered on site to decompose and used as mulch.

The methods used for treating giant reed stands are different, depending on the makeup of the stands. Pure stands of invasive plants containing only non-native plants typically utilize tractor-mounted mulching mowers. Impacts to any associated native plants are avoided. Mixed stands of invasive plants occur in or among willows (*Salix* ssp.), cottonwoods (*Populus fremontii*), mulefat (*Baccharis salicifolia*), and other native riparian vegetation. No removal or spraying of native vegetation is allowed. All native plants and animals would be protected from damage by equipment, personnel, and all other giant reed control activities. Native shrubs and trees may be trimmed to provide access and to protect them from incidental spraying with herbicide but only under close supervision by a qualified biologist or specialist. Hand removal is the only method allowed in mixed stands or when sensitive species are encountered in the area.

Access to invasive control sites would be on existing roads and trails. Where new trails must be cut to gain access, native vegetation would be trimmed, not removed.

3.4.2 Implementation Schedule

It is anticipated that the construction of proposed SARCCUP facilities would begin at the end of 2019 and would take approximately one to eight years to complete as follows.

- Santa Ana River Arundo Removal
  - Vegetation Removal: September 2019 to June 2021 (36 months)
  - Maintenance and monitoring continuing through June 2023.
- Chino Basin
  - Chino Basin Production Wells, Refurbishment and Treatment System: March 2019 to September 2021 (30 months)
- Riverside Arlington Basin
  - Arlington Production Wells and Pipeline
    - Well Drilling: April 2019 to March 2020 (12 months)
    - Well Equipping (associated pipeline installation): April 2020 to June 2023 (38 months)
  - Cannon Pump Station
    - Pump Station and Ancillary Facilities: April 2019 – March 2021 (24 months)
  - ID-4 CRA Crossing Refurbishment
    - Refurbishment activities: April 2019 – March 2020 (12 months)

3.5 Project Approval

As Lead Agency, IEUA may use this EIR to approve the proposed Project, make Findings regarding identified impacts, and if necessary, adopt a Statement of Overriding Considerations regarding these impacts.

Other approvals required may include the following:

- U.S. Army Corp of Engineers – Clean Water Act Section 404 Permit
- Federal Emergency Management Agency (FEMA) Letter of Map Amendment (LOMA);
- California Department of Water Resources – Permit to Recharge
- State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) – Domestic Water Supply Permit; Drinking Water Source Assessment and Protection
- California Department of Fish & Wildlife (CDFW): Fish & Game Code Section 1602 Permit;
- California Department of Public Health (CDPH): Use Permit for New Wells
- California Department of Transportation (Caltrans): Encroachment Permit
- Regional Water Quality Control Board – Storm Water Pollution Prevention Plans (SWPPP); General Construction Permit

- Regional Water Quality Control Board – Clean Water Act Section 401
- Local Construction/Encroachment Permits;
- County Well Drilling and/or modification permits
- MWD – approval to deliver, exchange, and convey water
- City of Lake Elsinore – Encroachment Permit
- County of Riverside – Local easements
- Riverside County Flood Control and Water Conservation District – Encroachment Permit

CHAPTER 4
Environmental Setting, Impacts and Mitigation Measures

This Draft EIR is prepared in accordance with CEQA (California Public Resources Code, Section 21000 *et seq.*), the *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 five specific projects in accordance with SARCCUP. This Draft EIR is intended to serve as an informational document for the public agency decision-makers and the public regarding the five SARCCUP projects that comprise the proposed Project.

Scope of the Environmental Impact Analysis

In accordance with Section 15126 of the *CEQA Guidelines*, Chapter 4 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 was published in 2016 (see Appendix A). 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 construction of various water treatment, extraction and conveyance facilities.

In accordance with Appendix G of the *CEQA Guidelines,* this chapter assesses the proposed Project's potential effects on the following environmental resources:

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

Recreation is an additional environmental issue addressed in Appendix G of the *CEQA Guidelines*, and this Draft EIR addresses this issue in Public Services.

Approach to Environmental Analysis

Sections 4.1 through 4.17 of this Draft EIR contain discussions of the environmental setting, regulatory framework, and potential impacts related to construction and operation of the proposed Project facilities. This section will evaluate the potential environmental effects of the proposed Project. The project-level analyses will estimate the impacts to each resource category before the implementation of mitigation measures. The analyses will then estimate the impacts to each resource category after the implementation of mitigation measures.

Organization of Environmental Issue Area

Construction and operation of the five individual projects is expected to achieve the goals and objectives outlined in Chapter 2, *Project Background*, of this Draft EIR. Environmental resources that are addressed in Chapter 4 of this EIR (Sections 4.1 through 4.17) contain the following components.

Environmental Setting

This section identifies and describes the existing physical environmental conditions of the project areas as it pertains to each impact section. Pursuant to Section 15125(a) of the *CEQA Guidelines*, an EIR must include a description of the existing physical environmental conditions in the vicinity of the five specific projects from both a local and regional perspective. This description provides the "baseline condition" against which project-related impacts are compared. Normally, the baseline condition is the physical condition that exists when the NOP is published. The NOP for the proposed Project was published in October 2016, so October 2016 will serve as the baseline for the environmental impact analysis contained in this Draft EIR.

Regulatory Framework

The Regulatory Framework section provides a summary of the regulatory environment as it currently exists. The regulatory framework used in this EIR included federal, state, regional, and local regulations and policies applicable to the proposed Project.

Impacts and Mitigation Measures

This section describes the significance thresholds and methodology used for the analysis. The section discusses the changes that may occur to existing physical conditions if the five specific projects are implemented, and evaluates these changes based upon the identified significance criteria. The analysis estimates the magnitude of each impact without the adoption of any mitigation measures, but also identifies feasible mitigation measures for any potentially significant project-level impacts. Mitigation measures are those measures that could avoid, minimize, or reduce an environmental impact. This section also analyzes the expected significance of impact if the identified mitigation measures are implemented.

Significance Criteria

In accordance with Appendix G of the *CEQA Guidelines*, significance criteria have been developed for each environmental resource and are defined at the beginning of each impact analysis section. The significance of potential impacts is categorized as follows:

- **Significant and Unavoidable:** mitigation might be recommended but impacts remain significant;
- **Potentially Significant:** impacts are potentially significant;
- **Less than Significant with Mitigation:** impacts are potentially significant but mitigated to less than significant;
- **Less than Significant:** mitigation is not required under CEQA but may be recommended; or
- **No Impact:** mitigation is not required under CEQA.

References

Sources relied upon for each environmental topic analyzed in this document are provided at the end of each section.

4.1 Aesthetics

This section addresses the aesthetic and visual impacts associated with implementation of the proposed Project and provides an evaluation of potential effects to scenic resources and the visual character of the individual project sites.

4.1.1 Environmental Setting

Regional Setting

San Bernardino County

San Bernardino County, with a land area of 20,106 square miles, is the largest county in the United States, containing vast undeveloped tracts of land that offer significant scenic vistas. The county consists of three distinct geographic regions: Mountains; the Valley; and the Desert. The proposed Chino Basin Production Wells, Refurbishment and Treatment System at Well 34 is located within the Valley Region, which is approximately 35 miles long from east to west and averages approximately 10 miles long from north to south, covering only 2.5 percent of the total county land, but supporting approximately 75 percent of the county's population. The Valley Region is located just south of the San Bernardino Mountains adjacent to Riverside County, where the majority of the county's population resides, and the rest of the county stretches north and east toward the Nevada border and the Colorado River. Within the Mountain Region lie the San Bernardino National Forest, Lake Arrowhead, and Big Bear Lake (County of San Bernardino 2007).

The most significant visual resources in the Valley portion of San Bernardino County are the hills and mountains, pastoral landscapes, and the Prado Basin wetlands that occur in the southwestern portion of San Bernardino County into Orange County. The predominant scenic vistas in the project areas, as identified in local General Plans include: views of the San Gabriel, San Bernardino and Santa Ana Mountains; Chino Hills, Jurupa Hills, Puente Hills, and San Jose Hills; Tonner Canyon; Prado Basin; and the remaining pastoral Chino farmlands. The Santa Ana River, various creeks and channels, and the Prado Basin provide vegetated natural settings including riverine and wetland features within San Bernardino County (County of San Bernardino 2007).

Riverside County

Riverside County encompasses approximately 7,400 square miles of land, surrounded by Orange County to the west, San Bernardino County to the north, the Colorado River to the east, and San Diego County and Imperial County to the south. Riverside County incorporates a wide range of natural features, including mountain ranges, desert areas, riparian areas and rivers, vernal pools, and oak woodlands and forests located within different biological regions within the county. The proposed Arlington Production Wells and Pipeline, Cannon Pump Station, ID-4 CRA Crossing Refurbishment, and Santa Ana River Arundo Removal are located within the western portion of Riverside County. The region consists of San Gorgonio Peak, watersheds of San Jacinto and Santa Ana Rivers, the Cleveland and Angeles National Forests, and federal wilderness and wildlife areas (County of Riverside 2015a).

Scenic resources within the county include natural landmarks and prominent or unusual features of landscapes such as mountains or monuments with high scenic value. Scenic backdrops include hillsides and ridges that are higher in elevation than urban areas, rural areas, or highways. The predominant scenic vistas in the project areas, as identified in local General Plans include: views of the Santa Ana Mountains, San Jacinto Mountain Range, Lake Matthews Estelle Mountain Reserve, rugged hills, rocky outcroppings, and local regional parks. The Santa Ana River, various creeks and channels, and lakes such as Lake Matthews, Perris Reservoir, and Elsinore Lake provide vegetated natural settings within Riverside County (County of Riverside 2015a).

Local Setting

Chino Basin

The Chino Basin is an alluvial valley that is relatively flat from east to west, sloping north to south at a 1 to 2 percent grade within San Bernardino County. Elevations range from 2,000 feet adjacent to the San Gabriel Foothills to approximately 500 feet near Prado Basin. The Chino Basin is characterized primarily by dense urbanization including residential, commercial, and industrial land uses interspersed with undeveloped hilltops and distant mountains and hills (ESA 2017).

City of Montclair

The Chino Basin Production Wells, Refurbishment and Treatment System site is located within the City of Montclair (refer to Figure 3-1). The Well 34 site is located off Palo Verde Street, just south of Interstate 10 (San Bernardino Freeway). To the east and south of the site is the San Antonio Creek Channel and the Wilderness Basin Park, and to the west and south of the site is residential development. The Well 13 site is located at the intersection of Etiwanda and Philadelphia in City of Jurupa Valley.

The City of Montclair 1999 General Plan does not officially designate any scenic vistas or resources within the city (City of Montclair 1999). Further, the City of Montclair contains no scenic highway corridors. Temporary views of the site are provided to motorists and pedestrians traveling westbound/eastbound along Palo Verde Street. Views from motorists traveling along Interstate 10 are blocked by an existing concrete wall separating the freeway from Palo Verde Street. Residential uses along the western boundary of the project site also have views of the site. The Wilderness Basin Park, located east of the site is closed off to the public by a security fence. Recreational users can actively use the southwestern portion of the park, where views of the site would be limited. Temporary views of the site from motorists traveling northbound/southbound on Helena Avenue, east of the northern portion of the park are provided; however, existing trees and vegetation lining the park partially obstruct views.

Riverside-Arlington Basin

The Riverside-Arlington Basin is part of the Upper Santa Ana Valley Groundwater Basin and extends over 92 square miles. It is bordered by the Box Springs Mountains on the southeast, Arlington Mountain on the south, La Sierra Heights and Mount Rubidoux on the northwest, and the Jurupa Mountains on the north. Within the Riverside-Arlington Basin lies a subsection called

the Arlington Groundwater Basin, which is a shallow, alluvial-filled valley (WMWD 2016). The Arlington Basin is extensively developed and is primarily characterized with urban areas within the City of Riverside, a very small portion of Corona, and unincorporated areas within Riverside County (WMWD 2011).

The existing ID-4 Crossing pipe/CRA intake facility is located in unincorporated Riverside County at the foot of the CRA, stemming from Lake Matthews, approximately 600 feet north of the intersection of Kirkpatrick Road and Cajalco Road. Refurbishment activities would be implemented under the ID-4 CRA Crossing Refurbishment project at this location. There are no public views of this project site.

City of Riverside

The City of Riverside's natural features provide a varied topographic setting for the city. Scenic resources include hillsides and ridgelines. These resources serve as landmarks and offer a sense of direction or orientation as people move around the city. The City of Riverside 2025 General Plan defines various vista points, which are found throughout the city both from urban areas toward the hills and from wilderness areas looking onto Riverside. Long distance views of natural terrain and vegetation can be found throughout the La Sierra/Norco Hills, Sycamore Canyon Wilderness Park and Box Springs Park. The peaks of Box Springs Mountain, Mt. Rubidoux, Arlington Mountain, Alessandro Heights and the La Sierra/Norco Hills provide scenic viewpoints of the city and the region (City of Riverside 2012a). Further, green spaces and open areas act as visual and scenic enhancements to developed areas (City of Riverside 2012b).

The proposed Arlington Production Wells and Pipeline and Cannon Pump Station project would be located within the City of Riverside (refer to Figures 3-3 and 3-4). For Alternative 1 of the Arlington Production Wells and Pipeline project, Well AD-6 would be located at the intersection of Magnolia Avenue and Jackson Street in the City of Riverside within a grass field adjacent to the Sherman Indian Museum. Well AD-7 would be located at the intersection of Magnolia Avenue and Adams Street in the City of Riverside within a grassy area adjacent to CVS Pharmacy (Figure 3-3). The pipeline would start at Well AD-7 and run underground west along Magnolia Avenue just past La Sierra Avenue with the public right-of-way. Views of Well AD-6 and AD-7 would be briefly visible to motorists traveling along the intersection of Magnolia Avenue and Jackson Street, and intersection of Magnolia and Adams Street, respectively. Both of these areas are surrounded by commercial development.

For Alternative 2 of the Arlington Production Wells and Pipeline project, Well AD-6 would be located just off Jackson Street in the City of Riverside along a drainage area. Well AD-7 would be located at the intersection of Auto Center Drive and Motor Circle within an automobile park (Figure 3-3). The pipeline would start at Well AD-7 and run underground along Auto Center Drive, north on Adams Street, west on Indiana Avenue to Fillmore Street within the public right-of-way. Views of Well AD-6 and AD-7 would be briefly visible to motorists traveling northbound and southbound on Jackson Street, and the intersection of Auto Center Drive and Motor Circle, respectively. The Well AD-6 site would be visible from residential properties located east of the site.

The Cannon Pump Station project site is located off the intersection of Alessandro Boulevard and Overlook Parkway within an undeveloped vegetated area. Both Alessandro Boulevard and Overlook Parkway sit higher than the project site, and therefore, views from motorists traveling along these roads are limited. Further, existing trees and vegetation line the project site, which further block views. Various residential properties located west of the site may have private views of the project site.

Santa Ana River

The Santa Ana River drains from the San Bernardino Mountains to the valley floor of the Inland Empire, through the Prado Basin and on to Orange County and the Pacific Ocean. The Santa Ana River travels 75 miles from its origins near Big Bear Lake to the Pacific Ocean. The river is a soft-bottom channel that is generally dry in the summer, but contains some seasonal flows in the winter and spring. Several large tributaries join the river in San Bernardino County responding only to storm events and spring runoff (ESA 2017).

The Santa Ana River is considered a scenic resource as it provides a natural riverine setting with some wetland features amongst built-up, urban environments found throughout San Bernardino, Riverside, and Orange Counties. The proposed Santa Ana River Arundo Removal project would occur at locations along the Santa Ana River between Prado Basin and the State Route (SR) 60 crossing in Riverside.

From Prado Basin and upstream to the crossing with Interstate 15, the Santa Ana River is surrounded by a riparian habitat buffer and housing. Upstream from Interstate15 to Hidden Valley Drain area, the Santa Ana River is bordered by open and vacant lands, washes, and the recreational Goose Creek Golf Club/Course to the north, and housing to the south. The remainder of the project area between Prado and SR-60 is surrounded by open space, recreational uses, housing and commercial land uses.

The Santa Ana River Trail provides recreational uses and scenic views of the Santa Ana River and surrounding open space, natural areas. The following roadways cross the Santa Ana River in the project area: River Road, I-15, Van Buren Boulevard, Mission Inn Avenue, and Mission Boulevard. The Santa Ana River Trail and roadway crossings provide scenic views of the Santa Ana River area.

Scenic Highways and Routes

San Bernardino County

A portion of SR-38 leading to SR-18 is a designated State Scenic Highway within the County of San Bernardino. In addition, the following eligible State Scenic Highways are located within San Bernardino County: SR-142, SR-71, and SR- 330. Eligible State Scenic Highways are highways that have been identified and recommended for designation, but are not officially designated by the California Scenic Highway Mapping System (Caltrans 2018a). The nearest designated State Scenic Highway to the project site is SR-18 which is located at least 16 miles to the north. Although not a designated State Scenic Highway, the nearest eligible State Scenic Highway to the

project sites is SR-71 which is located approximately 0.75 mile to the west of the Santa Ana Arundo Removal project.

Furthermore, the County 2007 General Plan identifies the following roadways as scenic routes: Beaumont Avenue within the Loma Linda Sphere of Influence (SOI); Citrus Avenue within the Redlands SOI, Colton Avenue within the Redlands SOI, Crafton Avenue within the Redlands SOI, Fifth Avenue within the Redlands SOI; Highland Avenue within the Redlands SOI; I-10 from the City of Redlands to the City of Yucaipa; Mentone Boulevard within the Redlands SOI; San Bernardino Avenue within the Redlands SOI; Sand Canyon Road between Crafton Avenue and the City of Yucaipa; San Timoteo Canyon Road in the Loma Linda SOI; and all of SR-71 within unincorporated county area (County of San Bernardino 2007). The County scenic route nearest to the project sites is SR-71 which is located approximately 0.75 mile to the west of the Santa Ana Arundo Removal project.

City of Montclair

The Chino Basin Productions Wells, Refurbishment and Treatment System would be located approximately 43 miles southeast of the nearest designated Highway, SR-38 and approximately 6.7 miles north of the nearest eligible State Scenic Highway, SR-142. (see **Figure 4.1-1**).

Riverside County

Portions of SR-74, SR-243, and SR-111 are designated as State Scenic Highways within Riverside County. Furthermore, the following eligible State Scenic Highways closest to the Project areas are: SR-74, SR-15, and SR-91 (Caltrans 2018b). The County 2003 General Plan designated SR-79, and portions of Interstate 215 as scenic routes (County of Riverside 2015b).

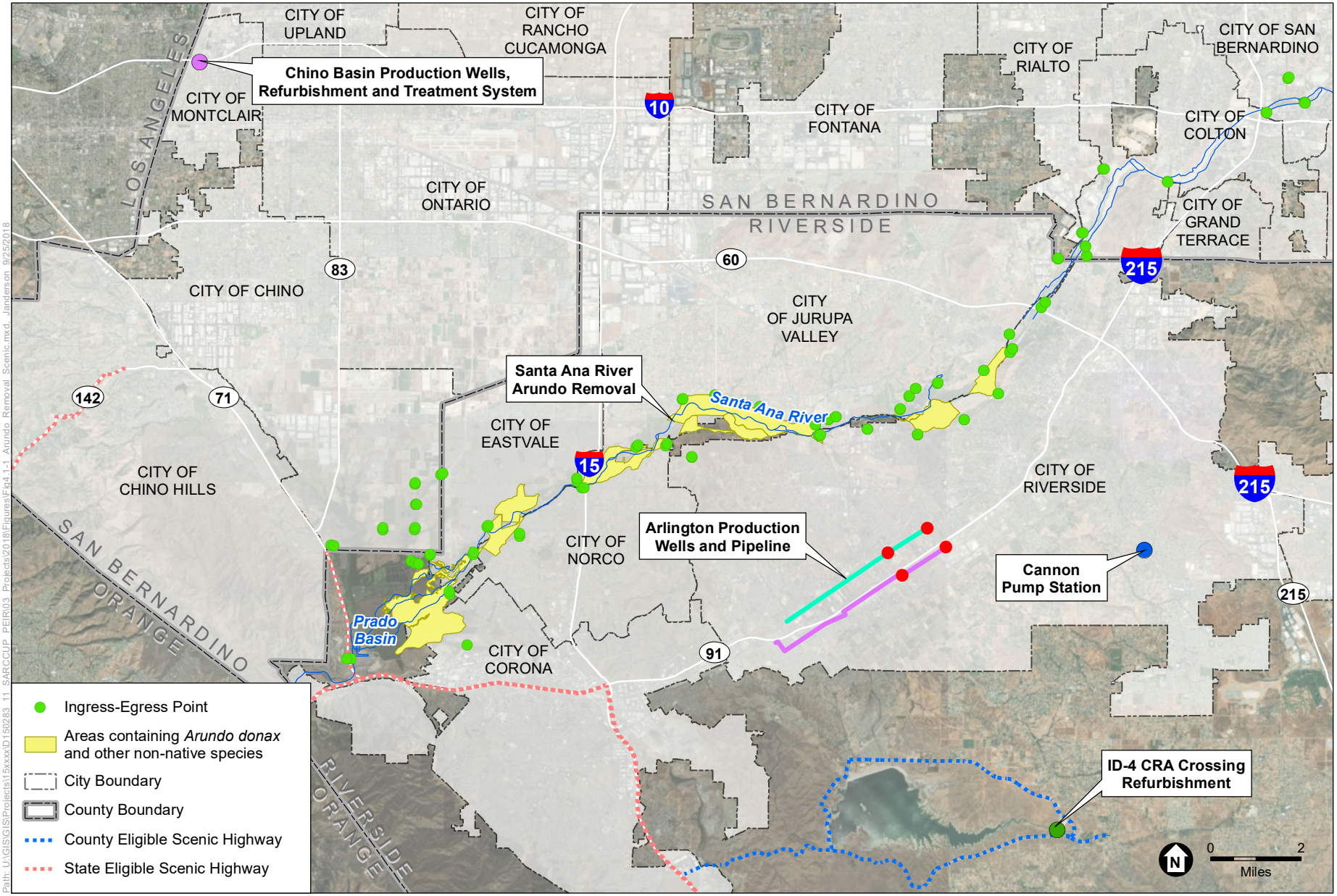
The ID-4 CRA Crossing Refurbishment project site is not located along or near a designated State Scenic Highway. SR-74 is located approximately 33 miles southeast of the project site. The nearest eligible State Scenic Highway, SR-15 is located approximately 8.5 miles west of the project site. Locally-designated scenic route I-215 is located approximately 7 miles east of the project site. The project area is located 600 feet north of Caljalco Road and 1,800 feet west of El Sobrante Road, both County-designated Eligible Scenic Routes (refer to Figure 4.1-1).

City of Riverside

The Cannon Pump Station project site is not located along or near a designated State Scenic Highway. SR-74 is located approximately 34 miles southeast of the project site. The nearest Eligible State Scenic Highway, SR-15 is located approximately 3.9 miles west of the project site. Locally-designated scenic route El Sobrante Road is located approximately 3 miles south of the project area.

Santa Ana River

The Santa Ana River is not located along any locally-designated scenic routes. The Santa Ana River Arundo Removal activities could occur at various ingress/egress areas surrounding the Santa Ana River, and four of these areas are located adjacent to SR-71, a State Eligible Scenic Highway (refer to Figure 4.1-1).



Path: U:\GIS\GIS\Projects\15xxxx\D150283_11_SARCCUP_PEIR\03_Projects\2018\Figures\Fig4.1-1_Arundo_Removal_Scenic.mxd, Janderson 9/25/2018

SOURCE: ESRI; Riverside County; San Bernardino County; CA DOT

SARCCUP

Figure 4.1-1

Local-Designated Scenic Routes near SARCCUP Project Locations

ESA

4.1.2 Regulatory Framework

State

State Scenic Highway Project

In 1963, the California legislature created the Scenic Highway Project to protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. The state regulations and guidelines governing the Scenic Highway Project are found in the Streets and Highways Code, Section 260 *et seq*. A highway is designated under this project when a local jurisdiction adopts a scenic corridor protection project, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a Scenic Highway. When a city or county nominates an eligible scenic highway for official designation, it defines the scenic corridor, which is land generally adjacent to and visible to a motorist on the highway (CalTrans 2018c).

Regional

County of San Bernardino Municipal Code

a. The County of San Bernardino Municipal Code, Section 83.07.030, Ord. 4011, contains glare and outdoor lighting ordinances for the Valley Region of the County *Light Trespass Prohibited.* Outdoor lighting of commercial or industrial land uses shall be fully shielded to preclude light pollution or light trespass on any of the following:

    1. An abutting residential land use zoning district;
    2. A residential parcel; or
    3. Public right-of-way.

b. *Determination of Light Trespass*. A determination of light trespass shall be made through a quantitative measurement utilizing a standard yardstick (three feet x one and one-half inches). The yardstick shall be placed at the building setback line in the complainant's yard. The yardstick shall be in contact with the ground or may be raised to window level of the dwelling and in a vertical position. The person taking the measurement shall then determine if a shadow is cast by the light source, that is, the light source, yardstick, and shadow shall be in alignment. Measurements shall not be taken when there is a moon in the night sky.

c. *Maximum Allowed Foot-candles*. Direct or indirect light from any light fixture shall not cause glare above five-tenths foot-candles when measured at the property line of a residential land use zoning district, residential parcel, or public right-of-way. Light levels shall be measured with a photoelectric photometer, following the standard spectral luminous efficiency curve adopted by the International Commission on Illumination.

County of Riverside Municipal Code

Chapter 8.80 of the County of Riverside Municipal Code contains ordinances pertaining to outdoor and exterior lighting within the county.

8.80.050 - Standard.

All outdoor luminaires shall be located, adequately shielded, and directed such that no direct light falls outside the parcel of origin, or onto the public right-of-way. Outdoor luminaires shall not blink, flash, or rotate.

8.80.080 – Security lighting.

Security lighting triggered by motion or noise shall be allowed subject to all of the provisions of this chapter.

Local

City of Riverside Municipal Code

Chapter 19.556 of the City of Riverside Municipal Code contains design and development standards pertaining to lighting.

19.556.020 Design and Development Standards.

A. Lighting for safety purposes shall be provided at entryways, along walkways, between buildings and within parking areas.

B. Lighting support structures shall not exceed the maximum permitted building height.

C. All on-site lighting shall provide an intensity of one foot-candle at ground level throughout the areas serving the public and used for parking.

D. Flickering or flashing lights shall not be permitted.

E. Light sources shall not be located in required buffer areas, except those required to illuminate pedestrian walkways.

F. All lights shall be directed, oriented and shielded to prevent light from shining onto adjacent properties, onto public rights-of-way and into driveway areas in a manner that would obstruct drivers' vision.

G. Light poles shall not exceed 20 feet in height, including the height of any concrete or other base material.

H. The City may require submittal of an exterior lighting plan as part of any development application or as a condition of approval of a project.

4.1.3 Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the significance of impacts related to aesthetics are based on Appendix G of the *CEQA Guidelines*. The proposed Project would result in a significant impact to aesthetics if it would:

- Have a substantial adverse effect on a scenic vista (see Impact 4.1-1, below);
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway (see Impact 4.1-2, below);
- Substantially degrade the existing visual character or quality of the site and its surroundings (see Impact 4.1-3, below); or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area (see Impact 4.1-4, below).

Impacts Discussion

Scenic Vistas

Impact 4.1-1: The proposed Project would have less than significant effects on a scenic vista.

Chino Basin Production Wells, Refurbishment and Treatment System

The Chino Basin Production Wells, Refurbishment and Treatment System would be located at the existing Well 34 just south of Palo Verde Street and Interstate 10 (refer to Figure 3-2). Well refurbishment would take place at the site, and eight concrete slabs that contain tanks, water treatment piping and facilities would be constructed. The site includes a fenced, undeveloped area adjacent to residential development and the Wilderness Basin Park. The treatment facilities would be located in an area generally flat and proximate to land already developed. Views of the existing well and associated facilities could be temporarily visible to motorists traveling Palo Verde Street and Helena Avenue. Views may also be available by recreational users of Wilderness Basin Park. However, well refurbishment and associated treatment facilities would be low-lying (less than 8 feet tall), surrounded by fencing, and would blend in with the existing development of the area. The new facilities would not have the scale or massing to obstruct scenic vistas or views of surrounding hills and mountains and, therefore, would result in a less than significant impact.

Arlington Production Wells and Pipeline

The Arlington Production Wells (Alternative 1 and 2) would be located within developed areas adjacent to Magnolia Avenue, Jackson Street, and Adams Street (refer to Figure 3-3). Views of these wells AD-6 and AD-7 for both alternative locations would be briefly visible to motorists or pedestrians traveling along these roadways. The extraction wells would be enclosed with fencing no taller than 8 feet and have relatively small footprints of approximately 200 square feet. The wells would be located in areas that generally are flat, or proximate to land already developed. The new wells would blend in with the surrounding commercial development. The new well

facilities would not have the scale or massing to obstruct scenic views or vistas of green spaces or surrounding hills. Therefore, the Arlington Production Wells would result in less than significant impacts to scenic vistas.

The proposed pipelines would be located underground within or along public rights-of-way. Conveyance pipelines for the proposed Project would require temporary ground-disturbance, but would not be visible once construction is complete (refer to Figures 3-3, 3-4, and 3-5). Pipelines would, therefore, not affect views from publically-accessible vantage points. Impacts to scenic vistas as a result of the operation of pipelines would have no impact.

Cannon Pump Station

After the completion of construction of the new Crest Booster Pump Station and future Western Pump Station associated with the Cannon Pump Station project, the structures and ancillary facilities would be permanent (refer to Figure 3-4). The new pump stations would be permanent but have relatively small footprints and would be housed within single-story structures no taller than 10 feet. The Cannon Pump Station project site is located in an undeveloped vegetated area and views from motorists traveling along these roads are limited and largely obstructed by topography and existing trees lining the site. Further, the new pump stations would not have the scale or massing to obstruct scenic views and would blend in with the surrounding development. Therefore, the Cannon Pump Station project would result in less than significant impacts to scenic vistas.

ID-4 CRA Crossing

The ID-4 CRA Crossing Refurbishment project would take place at an existing pipeline crossing the CRA within an open area of varying topography with no accessible public views of the area. Once refurbishment activities are completed on the pipeline crossing, there would be no change to the surrounding area and, therefore, no impacts to scenic resources would occur.

Arundo Removal

The Santa Ana River Arundo Removal project would occur at locations along the Santa Ana River between Prado Basin and the SR-60 crossing in Riverside (refer to Figure 3-6). Views of the Santa Ana River are provided to recreational users of the Santa Ana River Trail and other public vantage points.

Natural succession is anticipated to occur post removal and during monitoring and maintenance of native species. The proposed project would not involve the construction of any aboveground, physical facilities which could have the potential height or massing to obstruct scenic views of the Santa Ana River. Although current views of the project area would be altered, the lack of *Arundo donax* and other non-native species would not negatively impact scenic views of the Santa Ana River. Restoration of the project area after treatment would include native plant species and be sustainable. The final project plantings would continue to provide natural and visually pleasing vegetation as viewed from public vantage points. Although the Santa Ana River Arundo Removal project would alter the aesthetic of the project area, views of the project area

would remain aesthetically pleasing and impacts to the scenic quality of the project area would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Scenic Resources within a State Scenic Highway

Impact 4.1-2: The proposed Project would have a less than a significant impact on scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

Chino Basin Production Wells, Refurbishment and Treatment System

The Chino Basin Production Wells, Refurbishment and Treatment System would not be located along or near a designated State Scenic Highway or Eligible State Scenic Highway. Therefore, the implementation of these projects would have no impact to scenic resources within a scenic corridor.

Arlington Production Wells and Pipeline

The Arlington Production Wells and Pipeline would not be located along or near a designated State Scenic Highway or Eligible State Scenic Highway. Therefore, the implementation of these projects would have no impact to scenic resources within a scenic corridor.

Cannon Pump Station

The Cannon Pump Station would not be located along or near a designated State Scenic Highway or Eligible State Scenic Highway. Therefore, the implementation of these projects would have no impact to scenic resources within a scenic corridor.

ID-4 CRA Crossing

The ID-4 CRA Crossing Refurbishment projects would not be located along or near a designated State Scenic Highway or Eligible State Scenic Highway. Therefore, the implementation of these projects would have no impact to scenic resources within a scenic corridor.

Arundo Removal

Arundo removal would occur along the Santa Ana River and could occur at various ingress/egress areas surrounding the Santa Ana River. Four of these areas are located adjacent to SR-71, an eligible State Scenic Highway (see Figure 4.1-1) and San Bernardino County scenic route. Temporary impacts to scenic resources within these view corridors may occur when construction

equipment is present near these areas; however, the project would remove invasive species within the river and would not result in any long term adverse impact on the Santa Ana River or take away from the scenic resource. Impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Visual Character

Impact 4.1-3: The proposed Project would result in a less than significant impact on the existing visual character or quality and their surroundings.

Construction activities associated with all proposed facilities would result in short-term impacts to the existing visual character. Construction activities would require the use of construction equipment and on-site storage of excavated materials, stockpiled soils, and other materials generated during construction that could add negative aesthetic elements to the existing visual landscape. However, those effects would be temporary and would not permanently affect the existing visual character of the surrounding area. Therefore, impacts from construction-related activities would result in less than significant impacts.

Chino Basin Production Wells, Refurbishment and Treatment System

The Chino Basin Production Wells, Refurbishment and Treatment System would generally be low lying and surrounded by fencing (less than 8 feet tall). All wells, associated facilities, and treatment facilities would blend in with the surrounding commercial and residential development of the areas. Views of the Chino Basin Production Wells, Refurbishment and Treatment System project site are largely obscured by existing trees, fencing, and vegetation. However, the wells would not have the scale or massing to be considered contrasting features that would substantially alter the visual character of the area. Therefore, impacts to visual character as a result of new facilities would be less than significant.

Arlington Production Wells and Pipeline

The proposed Arlington Production Wells and Pipeline project would be located within the City of Riverside surrounded by commercial development. The wells would not have the scale or massing to be considered contrasting features that would substantially alter the visual character of the area. Therefore, impacts to visual character as a result of new facilities would be less than significant.

Cannon Pump Station

The Cannon Pump Station project site is located off the intersection of Alessandro Boulevard and Overlook Parkway within an undeveloped vegetated area. Existing trees and vegetation line the project site and block views. Various residential properties located west of the site may have private views of the project site. However, the proposed pump and booster stations associated with the Cannon Pump Station project would be single-story buildings with maximum heights of approximately 10 feet. The structures would be designed similar to other development within the immediate area along Alessandro Boulevard and Overlook Parkway. Further, the project structures would be located within an area that is below street level and surrounded by existing vegetation and trees that largely obstruct views of the area. Therefore, introduction of the new facilities would not significantly contrast with the existing visual character of the area. Impacts to visual character would be less than significant.

ID-4 CRA Crossing

The ID-4 CRA crossing is not visible from surrounding undeveloped areas since the existing pipeline is located within the CRA channel. The project would refurbish an existing facility. Therefore, impacts to visual character as a result of new facilities would be less than significant.

Arundo Removal

The proposed Project would enhance the visual character of the Santa Ana River by removing the non-native vegetation within and along the Santa Ana River. Although the existing visual character and quality of the site, which includes giant *Arundo donax* reeds, would be removed, views of the river and native riparian habitat will maintain a sustainable natural habitat and visual quality in the project area. Further, no new structures would be built. The proposed project would not adversely impact the visual character of the project area. Impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Light or Glare

Impact 4.1-4: The proposed Project would result in new sources of substantial light or glare which could result in significant adverse effects on day or nighttime views in the project area.

Construction activities associated with all proposed facilities would be conducted within the normal daytime working hours. No nighttime construction is anticipated that would require

nighttime lighting. Therefore, light and glare impacts from construction-related activities would result in less than significant impacts.

Development of new facilities may include exterior nighttime lighting for operational and security purposes. These facilities may introduce lighting that could be visible by the nearest residences. Compliance with standard procedures for ensuring that nighttime lights are used sparingly and are designed to be shielded from neighboring views would ensure that any additional security lighting needed for the facilities would not result in significant light or glare impacts to neighboring views. Impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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4.2 Agriculture and Forestry Resources

This section describes the environmental setting for agricultural land and forestry resources, as well as potential impacts associated with implementation of the proposed Project.

4.2.1 Environmental Setting

The following describes agricultural land classifications under the Farmland Mapping and Monitoring (FMMP) and Williamson Act Programs:

Farmland Mapping and Monitoring Program

The Department of Conservation (DOC), under the Division of Land Resource Protection, has established the FMMP. The FMMP monitors the conversion of the state's farmland to and from agricultural use. The map series identifies eight classifications and uses a minimum mapping unit size of 10 acres. The FMMP also produces a biannual report on the amount of land converted from agricultural to non-agricultural use. The FMMP maintains an inventory of state agricultural land and updates its "Important Farmland Series Maps" every two years (DOC 2016c). Important farmlands are divided into the following five categories based on their suitability for agriculture:

Prime Farmland. Prime Farmland is land with the best combination of physical and chemical characteristics able to sustain long-term production of agricultural crops. This land has produced irrigated crops at sometime within the four years prior to the mapping date.

Farmland of Statewide Importance. Farmland of Statewide Importance is land that meets the criteria for Prime Farmland but with minor shortcomings such as greater slopes or lesser soil moisture capacity.

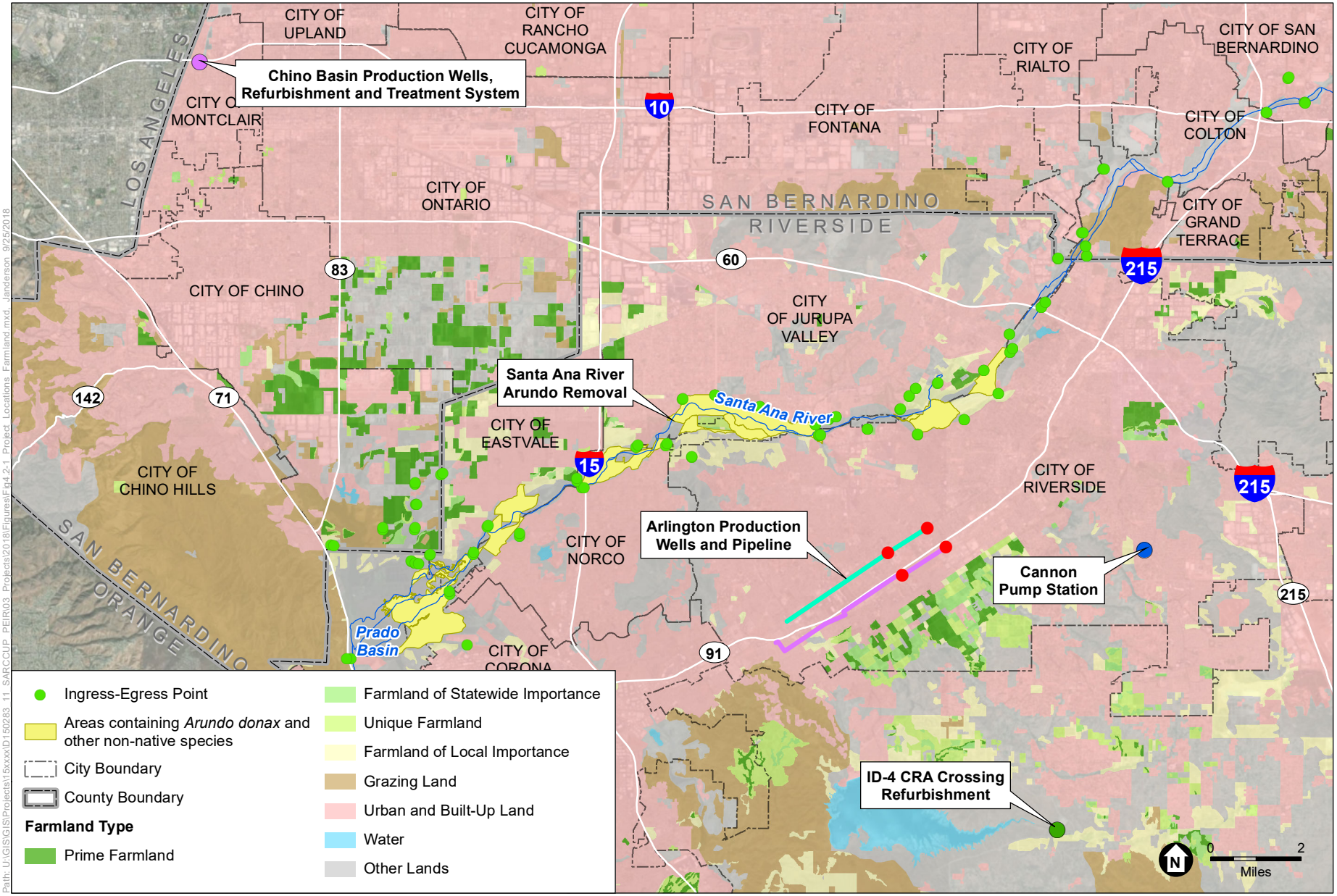
Unique Farmland. Unique Farmland has even lesser quality soils and produces the state's leading agricultural crops. This land is usually irrigated, but also includes non-irrigated orchards and vineyards.

Farmland of Local Importance. Farmland of Local Importance is land that is important to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

Grazing Land. Grazing Land is land on which the existing vegetation is suited to the grazing of livestock.

Other Lands. This land does not meet the criteria of any of the other categories.

Figure 4.2-1 illustrates FMMP classifications within the Project area.



Path: U:\GIS\GIS\Projects\15xxxx\D150283_11_SARCCUP_PEIR\03_Projects\2018\Figures\Fig4.2-1_Project_Locations_Farmland.mxd Janderson 9/25/2018

SOURCE: ESRI; Riverside County; San Bernardino County; FMMP

SARCCUP

Figure 4.2-1
Important Farmland Map for Project Area

ESA

The Williamson Act Program

The Williamson Act Program enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. The minimum term for contracts is 10 years. Under the program, landowners receive substantially reduced property tax assessments in return for enrollment under a Williamson Act contract. Property tax assessments of Williamson Act contracted land are based upon generated income as opposed to potential market value of the property. Local governments receive a partial subvention of forgone property tax revenues from the state. Contracts may be exited at the option of the landowner or local government by initiating the process of term nonrenewal (DOC 2017). **Figure 4.2-2** illustrates Williamson Act land parcels within the Project area.

Regional Setting

San Bernardino County

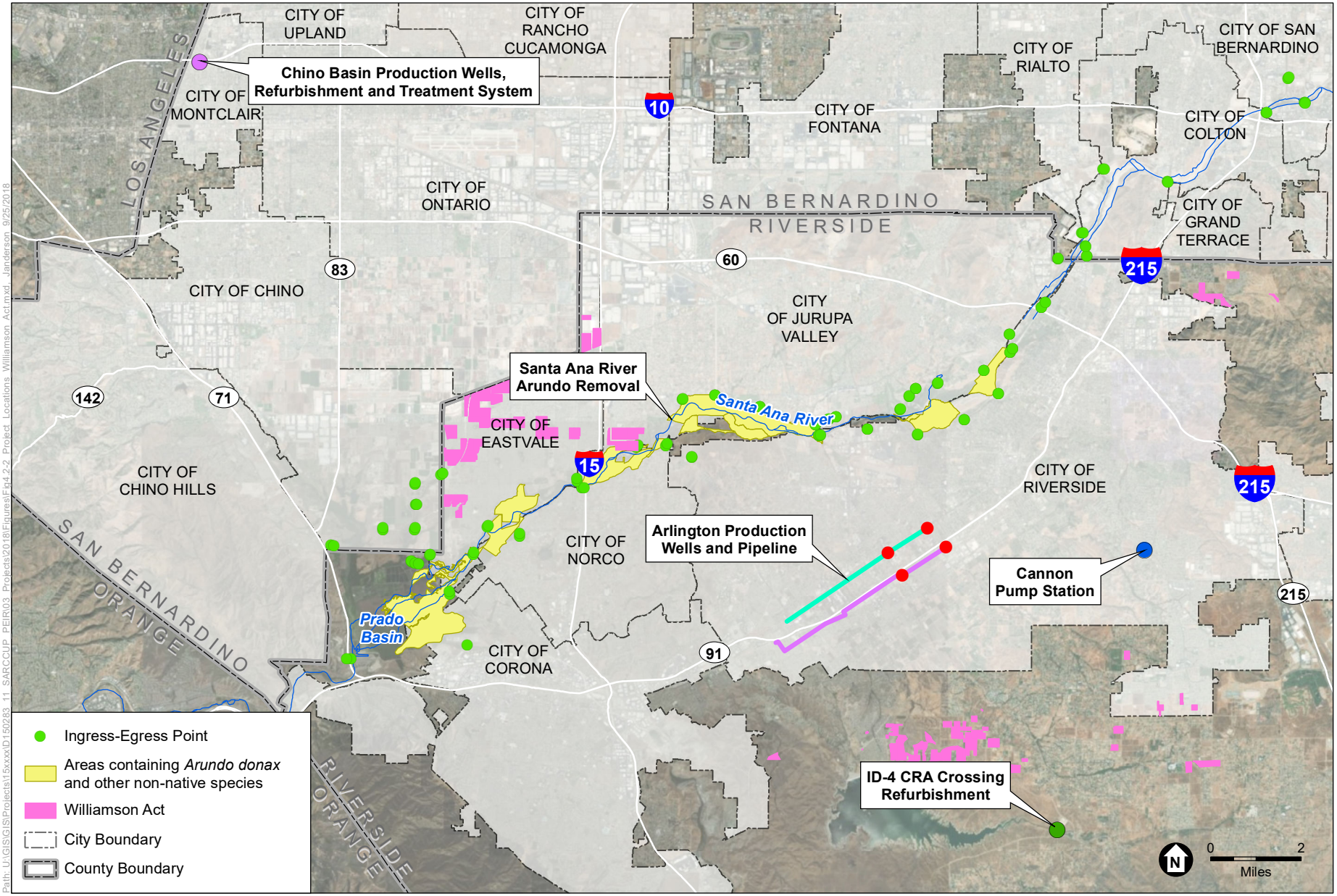
Agriculture has historically been an important part of San Bernardino County's economy. The County consistently ranks in the top 15 agricultural-producing counties in the state. San Bernardino County experienced significant urban growth since 2010, ranking ninth in the state for urban growth. Approximately 1,440 acres have been converted from agricultural to nonagricultural uses in San Bernardino County between 2010 and 2012. In 2012, San Bernardino County reported 924,790 acres of irrigated and non-irrigated agricultural land (DOC 2015).

Riverside County

Similar to San Bernardino County, Riverside County has experienced significant urban growth since 2010 and ranks second in the state for urbanization. In 2012, Riverside County reported 426,226 acres of agricultural lands. Between 2010 and 2012, 394 acres were converted from agricultural to nonagricultural uses (DOC 2015).

Local Setting

The proposed Project area is located within an area historically containing significant agricultural resources, including dairy ranches located in the southwestern portion of San Bernardino County. There are no designated agricultural, forest, or timber lands in the vicinity of the Project site. Much of the area is now developed with urban development. The majority of the remaining agricultural land within the City of Riverside is located within the central and southern areas of the city (City of Riverside 2012) including some active Williamson Act lands present near the Project area (refer to Figure 4.2-2).



SOURCE: ESRI; Riverside County; San Bernardino County; FMMP

SARCCUP

Figure 4.2-2
Williamson Act Contract Land in Project Area

ESA

4.2.2 Regulatory Framework

State

Williamson Act

A Williamson Act contract cancellation is an option under limited circumstances and conditions set forth in California Government Code Section 51280. In such cases, landowners may petition a County Board of Supervisors or a City Council for a cancellation of a contract. The DOC has compiled a general cancellation outline to assist the public in understanding who and what is involved in the process of cancelling a Williamson Act contract. Contract cancellation involves a comprehensive review and approval process, and the payment of a fee by the landowner equal to 12.5 percent of the full market value of the property in question (DOC 2017).

4.2.3 Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the significance of impacts related to Agricultural and Forestry resources are based on Appendix G of the *CEQA Guidelines*. The proposed Project would result in a significant impact to Agricultural and Forestry resources if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use (see Impact 4.2-1, below);
- Conflict with existing zoning for agricultural use, or a Williamson Act Contract (see Impact 4.2-2, below);
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)) (see Impact 4.2-3, below);
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use (see Impact 4.2-4, below); or
- Result in the loss of forest land or conversion of forest land to non-forest use (see Impact 4.2-3, below).

Impacts Discussion

Convert Farmland to Non-Agricultural Use

Impact 4.2-1: The proposed Project would have a less than significant impact related to the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use.

The proposed Project would not affect any designated agricultural, forest, or timber lands, as illustrated in Figure 4.2-1. Implementation of the proposed Project would not permanently

convert this land to non-agricultural use. Therefore, impacts to designated agricultural lands would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Conflict with Existing Zoning or Williamson Act Contract

Impact 4.2-2: The proposed Project would have a less than significant impact to lands zoned for agricultural use, or a Williamson Act Contract.

There are no active Williamson Act Contracts within or near the proposed project sites, as shown on Figure 4.2-2. Therefore, impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Zoning or Rezoning of Forest Land or Timberland or Loss/Conversion of Forest Land

Impact 4.2-3: The proposed Project would have no impact to existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.

There are no lands zoned as forest land, timberland, or timberland production within the proposed project areas. Therefore, implementation of the proposed projects would have no impact.

Significance Determination before Mitigation: No Impact

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: No Impact

Conversion to Non-Agricultural Use and Conversion to Non-Forest Use

Impact 4.2-4: The proposed Project would have no impact to the existing environment that could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

As described in Impacts 4.2-1 through 4.2-3, implementation of the proposed Project facilities would not involve changes to the environment that would convert farmland to non-agricultural use. Additionally, there are no forests that would be converted. Except for the Santa Ana River site, the parcels are very small, adjacent to or within public utility corridors, or in developed areas.

Significance Determination before Mitigation: No Impact

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: No Impact

4.2.4 References

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4.3 Air Quality

This section provides an overview of existing air quality conditions within the Project area, regulatory framework applicable to air pollutant emissions, and an analysis of potential air quality impacts that would result from implementation of the proposed Project and mitigation measures that can minimize future air emissions from its implementation.

4.3.1 Environmental Setting

Regional Climate and Meteorology

The proposed Project is located within the portions of San Bernardino and Riverside Counties that lies within the South Coast Air Basin (SoCAB). The entire Project area is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SoCAB is an approximately 6,600-square-mile coastal plain bounded by the Pacific Ocean to the southwest and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SoCAB includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County.

The ambient concentrations of air pollutants are determined by the amount of emissions released by sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the Project area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources.

Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. The topography and climate of Southern California combine to make the SoCAB an area of high air pollution potential. The SoCAB 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 the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is disrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cool marine layer and inhibits the pollutants in the marine layer from dispersing upward. In addition, light winds during the summer further limit ventilation. Furthermore, sunlight triggers the photochemical reactions that produce ozone. The region experiences more days of sunlight than any other major urban area in the nation except Phoenix (SCAQMD 2013).

Criteria Pollutants

The California Air Resources Board (CARB) and the United States Environmental Protection Agency (USEPA) currently focus on the following air pollutants as indicators of ambient air quality: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable or breathable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}), fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead. The pollutants are referred to as "criteria air pollutants" since they are the most prevalent air pollutants known to be harmful to human health, and extensive health-effects criteria documents are available about their effects on human health and welfare. Standards have been established for each criteria pollutant to meet specific public health and welfare criteria set forth in the federal Clean Air Act (CAA). California has generally adopted more stringent ambient air quality standards for the criteria air pollutants (referred to as State Ambient Air Quality Standards, or state standards) and has adopted air quality standards for some pollutants for which there is no corresponding national standard.

Ozone

Ozone, the main component of photochemical smog, is primarily a summer and fall pollution problem. Ozone is not emitted directly into the air, but is formed through a complex series of chemical reactions involving other compounds that are directly emitted. These directly emitted pollutants (also known as ozone precursors) include reactive organic gases (ROGs) or volatile organic compounds (VOCs), and oxides of nitrogen (NO_X). While both ROGs and VOCs refer to compounds of carbon, ROG is a term used by CARB and is based on a list of exempted carbon compounds determined by CARB. VOC is a term used by the USEPA and is based on USEPA's own exempt list. The time period required for ozone formation allows the reacting compounds to spread over a large area, producing regional pollution problems. Ozone concentrations are the cumulative result of regional development patterns rather than the result of a few significant emission sources.

Once ozone is formed, it remains in the atmosphere for 1 or 2 days. Ozone is then eliminated through reaction with chemicals on the leaves of plants, attachment to water droplets as they fall to earth (rainout), or absorption by water molecules in clouds that later fall to earth with rain (washout). Short-term exposure to ozone can irritate the eyes and cause constriction of the airways. In addition to causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Volatile Organic Compounds

VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids. Some VOCs are also classified by the State as toxic air contaminants. These are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons, as are architectural coatings. Emissions of VOCs themselves are not "criteria" pollutants; however, they contribute with NO_X to formation of O_3 and are regulated as O_3 precursor emissions.

Carbon Monoxide

CO, a colorless and odorless gas, is a relatively nonreactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicles. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia. CO measurements and modeling were important in the early 1980s, when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling have not been a priority in most California air districts because of the retirement of older polluting vehicles, lower emissions from new vehicles, and improvements in fuels.

Nitrogen Dioxide

NO_2 is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2. The combined emissions of NO and NO_2 are referred to as NO_X, which are reported as equivalent NO_2. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of a brown cloud on high-pollution days, especially in conjunction with high ozone levels.

Sulfur Dioxide

SO_2 is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant, mainly as a result of burning high-sulfur-content fuel oils and coal, and from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms sulfur trioxide (SO_3). Collectively, these pollutants are referred to as sulfur oxides (SO_X).

Major sources of SO_2 include power plants, large industrial facilities, diesel vehicles, and oil-burning residential heaters. Emissions of SO_2 aggravate lung diseases, especially bronchitis. It also constricts the breathing passages, especially in people with asthma and people involved in moderate to heavy exercise. SO_2 potentially causes wheezing, shortness of breath, and coughing. Long-term SO_2 exposure has been associated with increased risk of mortality from respiratory or cardiovascular disease.

Particulate Matter

PM_{10} and $PM_{2.5}$ consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively (a micron is one-millionth of a meter). PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air. Particulate matter can also damage materials and reduce visibility. One common source of $PM_{2.5}$ is diesel exhaust emissions.

PM_{10} consists of particulate matter emitted directly into the air (e.g., fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires, and natural windblown dust) and particulate matter formed in the atmosphere by condensation and/or transformation of SO_2 and ROGs. Traffic generates particulate matter emissions through entrainment of dust and dirt particles that settle onto roadways and parking lots. PM_{10} and $PM_{2.5}$ are also emitted by wood burning in residential wood stoves and fireplaces and open agricultural burning. $PM_{2.5}$ can also be formed through secondary processes such as airborne reactions with certain pollutant precursors, including ROGs, ammonia (NH_3), NO_X, and SO_X.

Lead

Lead is a metal found naturally in the environment and present in some manufactured products. There are a variety of activities that can contribute to lead emissions, which are grouped into two general categories, stationary and mobile sources. On-road mobile sources include light-duty automobiles; light-, medium-, and heavy-duty trucks, as well as motorcycles.

Emissions of lead have dropped substantially over the past 40 years. The reduction before 1990 was largely due to the phase-out of lead as an anti-knock agent in gasoline for on-road automobiles. Substantial emission reductions have also been achieved through enhanced controls in the metals-processing industry. In the SoCAB, atmospheric lead is generated almost entirely by the combustion of leaded gasoline and contributes less than one percent of the material collected as total suspended particulates.

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs), are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

Between July 2012 and June 2013, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES IV), which is a follow-up to previous air toxics studies conducted in the SoCAB. The MATES IV Final Report was issued in May 2015. The study, based on actual monitored data throughout the SoCAB, consisted of a monitoring program, an updated emissions inventory of TACs, and a modeling effort to characterize carcinogenic risk across the SoCAB from exposure to TACs. The study applied a 2-kilometer (1.24-mile) grid over the SoCAB and reported carcinogenic risk within each grid space (covering an area of 4 square kilometers or 1.54 square miles). The study concluded that the average of the modeled air toxics concentrations measured at each of the monitoring stations in the SoCAB equates to a background cancer risk of approximately 418 in 1,000,000 primarily due to diesel exhaust, which is about 65 percent lower than the previous MATES III cancer risk (SCAQMD 2015, ES-2). Subsequent to the SCAQMD's risk calculations estimates performed for MATES IV, the California Environmental Protection Agency Office of Environmental Health Hazard Assessment (OEHHA) updated the methods for estimating cancer risks (OEHHA 2015). The updated method utilizes higher estimates of cancer

potency during early life exposures and uses different assumptions for breathing rates and length of residential exposures. When combined together, SCAQMD staff estimates that risks for the same inhalation exposure level will be about 2.5 to 2.7 times higher using the updated methods. This would be reflected in the average lifetime air toxics risk estimated from the monitoring sites data going from 418 per million to 1,023 per million (SCAQMD 2015, 2-11). Under the updated OEHHA methodology, adopted in March of 2015, the relative reduction in risk from the MATES IV results compared to MATES III would be the same (about 65 percent reduction in risk).

Approximately 68 percent of the airborne carcinogenic risk is attributed to diesel particulate emissions matter (DPM), approximately 22 percent to other toxics associated with mobile sources (including benzene, butadiene, and formaldehyde), and approximately 10 percent is attributed to stationary sources (which include industries and other certain businesses, such as dry cleaners and chrome plating operations) (SCAQMD 2015, ES-2). The study also found lower ambient concentrations of most of the measured air toxics compared to the levels measured in the previous study conducted during 2004 and 2006. Specifically, benzene and 1,3-butadiene, pollutants generated mainly from vehicles, were down 35 percent and 11 percent, respectively (SCAQMD 2015, 6-1). The reductions were attributed to air quality control regulations and improved emission control technologies. In addition to air toxics, MATES IV included continuous measurements of black carbon and ultrafine particles (particles smaller than 0.1 microns in size), which are emitted by the combustion of diesel fuels. Sampling sites located near heavily-trafficked freeways or near industrial areas were characterized by increased levels of black carbon and ultrafine particles compared to more rural sites.

Odorous Emissions

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). Offensive odors are unpleasant and can lead to public distress, generating citizen complaints to local governments. Although unpleasant, offensive odors rarely cause physical harm. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source, wind speed, direction, and the sensitivity of receptors.

Existing Conditions

SCAQMD maintains monitoring stations within district boundaries that monitor air quality and compliance with associated ambient standards. The Project area is located in San Bernardino and Riverside Counties. **Table 4.3-1** lists the air quality monitoring stations that are located nearest the Project components, including their locations and pollutants that are monitored by each station.

TABLE 4.3-1
AIR QUALITY MONITORING STATIONS WITHIN PROJECT AREA

Monitoring Station	Station Location	Pollutants Monitored
San Bernardino County		
Upland Monitoring Station	1350 San Bernardino Road, Upland, CA	Ozone, $PM_{10,}$ $PM_{2.5}$, NO_2
Riverside County		
Riverside –Rubidoux Station	5888 Mission Boulevard, Riverside, CA	Ozone, $PM_{10,}$ $PM_{2.5}$, NO_2
Mira Loma Van Buren Station	5130 Poinsettia Place, Riverside, CA	Ozone, $PM_{10,}$ $PM_{2.5}$, NO_2
Perris Monitoring Station	237 ½ N D Street, Perris, CA	Ozone, PM_{10}
Norco Monitoring Station	USNSWC Corona Division, Norco, CA	PM_{10}

SOURCE: CARB, 2016a.

Historical data of ambient ozone, PM_{10}, $PM_{2.5}$, and NO_2 concentrations from the relevant monitoring stations for the most recent three years (2015–2017) are shown in **Table 4.3-2**. There is no data available for ambient concentrations of SO_2 or CO within the South Coast Air Basin from the last three years (CARB 2018).

TABLE 4.3-2
AIR QUALITY DATA SUMMARY (2015–2017)

		Monitoring Data by Year		
Pollutant	**Standard[a]**	**2015**	**2016**	**2017**
Upland Monitoring Station – 1350 San Bernardino Road				
Ozone				
Highest 1 Hour Average (ppm)[b]		**0.136**	**0.156**	**0.150**
Days over State Standard	0.09	49	33	66
Highest 8 Hour Average (ppm)[b]		**0.106**	**0.116**	**0.128**
Days over National Standard	0.075	53	65	72
Days over State Standard	0.070	69	89	89
Particulate Matter (PM_{10})				
Highest 24 Hour Average ($\mu g/m^3$)[b] – State Measurement		NA	NA	NA
Est. Days over State Standard[c]	50	NA	NA	NA
Highest 24 Hour Average ($\mu g/m^3$)[b] – National Measurement		69.6	184.0	106.5
Est. Days over National Standard[c]	150	0	1	0
State Annual Average ($\mu g/m^3$)[b]	20	NA	NA	NA
Particulate Matter ($PM_{2.5}$)				
Highest 24 Hour Average ($\mu g/m^3$)[b]		**73.4**	**44.9**	**53.2**
Est. Days over National Standard[c]	35	NA	NA	NA
State Annual Average ($\mu g/m^3$)[b]	12	**16.0**	17.6	NA
Nitrogen Dioxide (NO_2)				
Highest 1 Hour Average (ppb)[b] – State Measurement		71	70	64
Days over State Standard	180	0	0	0
Highest 1 Hour Average (ppb)[b] – National Measurement		71.6	70.1	64.1
Days over National Standard	100	0	0	0
State Annual Average (ppb)[b]	30	15	16	15

Pollutant	Standard[a]	Monitoring Data by Year 2015	2016	2017
Riverside-Rubidoux Monitoring Station – 5888 Mission Boulevard				
Ozone				
Highest 1 Hour Average (ppm)[b]		**0.132**	**0.0.142**	**0.145**
Days over State Standard	0.09	31	33	47
Highest 8 Hour Average (ppm)[b]		**0.106**	**0.105**	**0.119**
Days over National Standard	0.075	39	47	58
Days over State Standard	0.070	59	71	82
Particulate Matter (PM_{10})				
Highest 24 Hour Average ($\mu g/m^3$)[b] – State Measurement		**107.4**	NA	NA
Est. Days over State Standard[c]	50	92.2	NA	NA
Highest 24 Hour Average ($\mu g/m^3$)[b] – National Measurement		69	NA	NA
Est. Days over National Standard[c]	150	0	NA	NA
State Annual Average ($\mu g/m^3$)[b]	20	40.0	NA	41.3
Particulate Matter ($PM_{2.5}$)				
Highest 24 Hour Average ($\mu g/m^3$)[b]		**61.1**	**60.8**	**50.3**
Est. Days over National Standard[c]	35	10.3	5.1	7.2
State Annual Average ($\mu g/m^3$)[b]	12	**15.4**	**12.5**	**14.5**
Nitrogen Dioxide (NO_2)				
Highest 1 Hour Average (ppb)[b] – State Measurement		57	73	63
Days over State Standard	180	0	0	0
Highest 1 Hour Average (ppb)[b] – National Measurement		57.4	73.1	63.0
Days over National Standard	100	0	0	0
State Annual Average (ppb)[b]	30	14	14	14
Mira Loma Van Buren Monitoring Station – 5130 Poinsettia Place				
Ozone				
Highest 1 Hour Average (ppm)[b]		**0.127**	**0.140**	**0.144**
Days over State Standard	0.09	29	34	41
Highest 8 Hour Average (ppm)[b]		**0.105**	**0.106**	**0.112**
Days over National Standard	0.075	36	43	48
Days over State Standard	0.070	51	70	72
Particulate Matter (PM_{10})				
Highest 24 Hour Average ($\mu g/m^3$)[b] – State Measurement		**109.0**	NA	NA
Est. Days over State Standard[c]	50	123.8	NA	NA
Highest 24 Hour Average ($\mu g/m^3$)[b] – National Measurement		112.0	NA	NA
Est. Days over National Standard[c]	150	0	NA	NA
State Annual Average ($\mu g/m^3$)[b]	20	**43.4**	NA	NA
Particulate Matter ($PM_{2.5}$)				
Highest 24 Hour Average ($\mu g/m^3$)[b]		**60.5**	**50.9**	**63.9**
Est. Days over National Standard[c]	35	17.6	7.3	10.1
State Annual Average ($\mu g/m^3$)[b]	12	NA	**14.0**	**13.5**
Nitrogen Dioxide (NO_2)				
Highest 1 Hour Average (ppb)[b] – State Measurement		68	64	65
Days over State Standard	180	0	0	0
Highest 1 Hour Average (ppb)[b] – National Measurement		68.1	64.9	65.1
Days over National Standard	100	0	0	0
State Annual Average (ppb)[b]	30	13	13	13

Pollutant	Standard[a]	Monitoring Data by Year 2015	2016	2017
Perris Monitoring Station – 237 ½ N D Street				
Ozone				
Highest 1 Hour Average (ppm)[b]		**0.124**	**0.131**	**0.120**
Days over State Standard	0.09	25	23	33
Highest 8 Hour Average (ppm)[b]		**0.103**	**0.099**	**0.106**
Days over National Standard	0.075	31	30	52
Days over State Standard	0.070	50	56	86
Particulate Matter (PM_{10})				
Highest 24 Hour Average ($\mu g/m^3$)[b] – State Measurement		**178.0**	NA	NA
Est. Days over State Standard[c]	50	25.7	NA	NA
Highest 24 Hour Average ($\mu g/m^3$)[b] – National Measurement		188.0	76.0	75.4
Est. Days over National Standard[c]	150	6.6	0	0
State Annual Average ($\mu g/m^3$)[b]	20	**31.4**	NA	NA
Norco Monitoring Station – USNSWC Corona Division				
Particulate Matter (PM_{10})				
Highest 24 Hour Average ($\mu g/m^3$)[b] – State Measurement		**85.0**	NA	NA
Est. Days over State Standard[c]	50	NA	NA	NA
Highest 24 Hour Average ($\mu g/m^3$)[b] – National Measurement		87.0	62.0	85.1
Days over National Standard[c]	150	NA	NA	0
State Annual Average ($\mu g/m^3$)[b]	20	NA	NA	NA

a Generally, state standards and national standards are not to be exceeded more than once per year.
b ppm = parts per million; ppb = parts per billion; µg/m3 = micrograms per cubic meter.
c PM10 and PM2.5 are not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.

Values in **bold** are in excess of at least one applicable standard. NA = Not Available.
SOURCE: CARB, 2018a. *iADAM: Air Quality Data Statistics*, 2015 through 2017; https://www.arb.ca.gov/adam/index.html

Both CARB and USEPA use the type of monitoring data shown in Table 4.3-2 to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment. The current attainment status for the Project area is provided in **Table 4.3-3**.

Sensitive Receptors

Land uses such as schools, hospitals, and convalescent homes are considered to be sensitive to poor air quality conditions because infants, children, the elderly, and people with health afflictions (especially respiratory ailments) are more susceptible to respiratory infections and other air-quality-related health problems than the general public. Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants

present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution, even though exposure periods during exercise are generally short.

TABLE 4.3-3
PROJECT AREA ATTAINMENT STATUS

	Designation/Classification	
Pollutant	**Federal Standards**	**State Standards**
Ozone – one hour	No Federal Standard	Nonattainment
Ozone – eight hour	Nonattainment	Nonattainment
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
CO	Unclassified/Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Unclassified/Attainment	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility-Reducing Particles	No Federal Standard	Unclassified

SOURCES: CARB, 2018b. Area Designations Maps/ State and National. http://www.arb.ca.gov/desig/adm/adm.htm

As the Project area is located within the Santa Ana River Watershed Basin, which consists of numerous cities in San Bernardino, Riverside and Orange Counties, it is likely that some of the various Project components consisting of pipelines, pump stations, production wells, and new and/or upgraded groundwater treatment facilities would be located in proximity to sensitive land uses such as residences, schools, hospitals, daycare centers, etc.

4.3.2 Regulatory Framework

The Project area is located in the central portion of the SoCAB. Air quality in the Project area is regulated by USEPA, CARB, and SCAQMD. In addition, the numerous cities, where the Project components are located, all have their own respective city general plans, many of which contain air quality policies that establish a policy foundation to implement local air quality improvement measures. Following is a discussion of each jurisdiction's air quality policies.

Federal

The Federal Clean Air Act (FCAA) requires the USEPA to identify National Ambient Air Quality Standards (NAAQS, or national standards) to protect public health and welfare. National standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, respirable particulate matter (PM_{10} and $PM_{2.5}$), and lead. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public

health and welfare criteria set forth in the FCAA. California has adopted more stringent ambient air quality standards for the criteria air pollutants (referred to as California Ambient Air Quality Standards [CAAQS], or state standards) and has adopted air quality standards for some pollutants for which there is no corresponding national standard. **Table 4.3-4** presents current national and state ambient air quality standards and provides a brief discussion of the related health effects and principal sources for each pollutant.

TABLE 4.3-4
STATE AND NATIONAL CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES

Pollutant	Averaging Time	State Standard	National Standard (Primary)	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 hour	0.09 ppm	---	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROG) and nitrogen oxides (NOx) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
	8 hours	0.070 ppm	0.070 ppm		
Nitrogen Dioxide	1 hour	0.18 ppm	0.100 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	Annual Avg.	0.030 ppm	0.053 ppm		
Carbon Monoxide	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Sulfur Dioxide	1 hour	0.25 ppm	0.75 ppb	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	3 hours	---	0.5 ppm		
	24 hours	0.04 ppm	0.14 ppm		
	Annual Avg.	---	0.03 ppm		
Respirable Particulate Matter (PM10)	24 hours	50 $\mu g/m^3$	150 $\mu g/m^3$	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Avg.	20 $\mu g/m^3$	---		
Fine Particulate Matter (PM2.5)	24 hours	---	35 $\mu g/m^3$	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.
	Annual Avg.	12 $\mu g/m^3$	12.0 $\mu g/m^3$		
Lead	Monthly Avg.	1.5 $\mu g/m^3$	---	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	---	1.5 $\mu g/m^3$		
	Rolling 3-month Average	---	0.15 $\mu g/m^3$		
Hydrogen Sulfide	1 hour	0.03 ppm	No National Standard	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Geothermal Power Plants, Petroleum Production and refining

Pollutant	Averaging Time	State Standard	National Standard (Primary)	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Sulfates	24 hour	25 μg/m^3	No National Standard	Breathing difficulties, aggravates asthma, reduced visibility	Produced by the reaction in the air of SO2.
Visibility Reducing Particles	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, discourages tourism.	See PM2.5.

ppm = parts per million; μg/m^3 = micrograms per cubic meter.

SOURCES: CARB, 2016b. *Ambient Air Quality Standards,* available at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf
CARB, 2009b. *ARB Fact Sheet: Air Pollution Sources, Effects and Control,* http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm

The FCAA required each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The FCAA added requirements for states containing areas that violate the NAAQS to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA has responsibility to review all state SIPs to determine if they conform to the mandates of the FCAA and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area and may impose additional control measures. Failure to submit an approvable SIP or to implement the plan within mandated timeframes can result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

Regulation of TACs, termed HAPs under federal regulations, is achieved through federal, state and local controls on individual sources. The 1977 Clean Air Act Amendments required the USEPA to identify National Emission Standards for Hazardous Air Pollutants (NESHAPs) to protect public health and welfare. These substances include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals.

State

California Air Resources Board

CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets the CAAQS, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's SIP, for which it works closely with

the federal government and the local air districts. The SIP is required for the state to take over implementation of the FCAA from the USEPA.

California Clean Air Act

The CARB manages air quality, regulates mobile emissions sources, and oversees the activities of county APCDs and regional AQMDs. CARB establishes state ambient air quality standards and vehicle emissions standards. California has adopted ambient standards that are more stringent than the federal standards for the criteria air pollutants, as shown in Table 4.3-2. Under the California Clean Air Act (CCAA) patterned after the FCAA, areas have been designated as attainment or nonattainment with respect to the state standards. Table 4.3-3 summarizes the attainment status with California standards in the vicinity of the proposed individual projects included in the Project area.

On-Road and Off-Road Vehicle Rules

In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to DPM and other TACs (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given time.

In 2008, CARB also approved the Truck and Bus Regulation to reduce PM and NO_X emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). The requirements were amended to apply to nearly all diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. For the largest trucks in the fleet, those with a GVWR greater than 26,000 pounds, there are two methods to comply with the requirements. The first way is for the fleet owner to retrofit or replace engines, starting with the oldest engine model year, to meet 2010 engine standards, or better. This is phased over 8 years, starting in 2015 and would be fully implemented by 2023, meaning that all trucks operating in the state subject to this option would meet or exceed the 2010 engine emission standards for NO_X and particulate matter by 2023. The second option, if chosen, requires fleet owners, starting in 2012, to retrofit a portion of their fleet with diesel particulate filters (DPFs) achieving at least 85 percent removal efficiency, so that by January 1, 2016 their entire fleet is equipped with DPFs. However, DPFs do not lower NO_X emissions. Thus, fleet owners choosing the second option must still comply with the 2010 engine emission standards for their trucks and busses by 2020.

In addition to limiting exhaust from idling trucks, CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower (hp) such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation adopted by CARB on July 26, 2007 aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission controlled models (13 CCR Section 2449). Implementation is staggered based on fleet size (which is the total of all off-road horsepower under common ownership or control), with large fleets beginning compliance in 2014, medium fleets in 2017, and small fleets in 2019. Each

fleet must demonstrate compliance through one of two methods. The first option is to calculate and maintain fleet average emissions targets, which encourages the retirement or repowering of older equipment and rewards the introduction of newer cleaner units into the fleet. The second option is to meet the Best Available Control Technology (BACT) requirements by turning over or installing Verified Diesel Emission Control Strategies (VDECS) on a certain percentage of its total fleet horsepower. The compliance schedule requires that BACT turn overs or retrofits (VDECS installation) be fully implemented by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

Toxic Air Contaminants

The State Air Toxics Program was established in 1983 under Assembly Bill (AB) 1807 (Tanner). A total of 243 substances have been designated TACs under California law; they include the 189 (federal) HAPs adopted in accordance with AB 2728. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources; however, AB 2588 does not regulate air toxics emissions. Toxic air contaminant emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment and, if specific thresholds are violated, are required to communicate the results to the public in the form of notices and public meetings.

In August of 1998, CARB identified particulate emissions from diesel-fueled engines (i.e., DPM) as TACs. CARB subsequently developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (CARB 2000). The document represents proposals to reduce diesel particulate emissions, with the goal of reducing emissions and associated health risks by 75 percent in 2010 and by 85 percent in 2020. The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra-low sulfur diesel fuel on diesel-fueled engines.

CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* in 2005 (CARB 2005). The primary goal in developing the handbook was to provide information that will help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution. The handbook highlights recent studies that have shown that public exposure to air pollution can be substantially elevated near freeways and certain other facilities (i.e., distribution centers, rail yards, chrome platers, etc.). However, the health risk is greatly reduced with distance. For that reason, CARB provided some general recommendations aimed at keeping appropriate distances between sources of air pollution and sensitive land uses, such as residences.

Regional

SCAQMD

The SCAQMD has jurisdiction over air quality for the individual proposed projects that are within the Project area. The SCAQMD adopted an Air Quality Management Plan (AQMP) in December 2012 for determination of the significance of a project's contribution to local or regional pollutant concentrations. The purpose of the AQMP is to set forth a comprehensive

program that will lead the South Coast Air Basin into compliance with the Federal 24-hour $PM_{2.5}$ air quality standard, and to provide an update to the SoCAB's commitments towards meeting federal 8-hour ozone standards (SCAQMD 2013). The AQMP contains baseline emissions inventory and projected emissions based on the Southern California Association of Governments' (SCAG) regional growth projections.

Air Quality Management Plan

The SCAQMD has adopted a series of AQMPs to meet the CAAQS and NAAQS. The most recent adopted plan is the 2012 Air Quality Management Plan which incorporates the latest scientific and technological information and planning assumptions, including growth projections, to achieve federal standards for air quality in the SoCAB (SCAQMD 2013). It incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources and on- and off-road mobile sources. The 2012 AQMP includes new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches. Additionally, it highlights the significant amount of emission reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal CAA.

The key undertaking of the 2012 AQMP is to bring the SoCAB into attainment with the NAAQS for the 24-hour $PM_{2.5}$ standard. It also intensifies the scope and pace of continued air quality improvement efforts toward meeting the 2024 8-hour O_3 standard deadline with new measures designed to reduce reliance on the federal CAA Section 182(e)(5) long-term measures for NO_X and VOC reductions. The SCAQMD expects exposure reductions to be achieved through implementation of new and advanced control technologies as well as improvement of existing technologies.

CARB approved the 2016 AQMP on March 23, 2017. Key elements of the 2016 AQMP include implementing fair-share emissions reductions strategies at the federal, state, and local levels; establishing partnerships, funding, and incentives to accelerate deployment of zero and near-zero-emissions technologies; and taking credit from co-benefits from greenhouse gas, energy, transportation and other planning efforts (SCAQMD 2017). The strategies included in the 2016 AQMP are intended to demonstrate attainment of the NAAQS for the federal non-attainment pollutants ozone and PM2.5 (SCAQMD 2017). Similar to the 2012 AQMP, the 2016 AQMP relies on "…aggressive mobile source control strategy supplemented with focused and strategic stationary source control measures". The 2016 AQMP also recognizes the reduction in traditional air pollutants which occur as a "co-benefit" with the reduction in global warming pollutants achieved through Greenhouse Gas (GHG) programs and policies, and commercial building energy efficiency measures (SCAQMD 2017). Vehicles and appliances (boilers, water heaters, space heaters, etc.) used in the construction and operation of the Project would comply with applicable regulations. While the 2016 AQMP was adopted by the SCAQMD and CARB, it has not yet received USEPA approval for inclusion in the SIP. Therefore, until such time as the 2016 AQMP is approved by the USEPA, the 2012 AQMP remains the applicable AQMP.

Air Quality Guidance Documents

The SCAQMD published the *California Environmental Quality Act (CEQA) Air Quality Handbook* to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts (SCAQMD 1993). The *CEQA Air Quality Handbook* provides standards, methodologies, and procedures for conducting air quality analyses in EIRs and was used extensively in the preparation of this analysis. However, the SCAQMD is currently in the process of replacing the *CEQA Air Quality Handbook* with the Air Quality Analysis Guidance Handbook.[1] While this process is underway, the SCAQMD recommends that lead agencies avoid using the screening tables in Chapter 6 (Determining the Air Quality Significance of a Project) and the on-road mobile source emission factors in Table A9-5-J1 through A9-5-L, as they are outdated. The SCAQMD instead recommends using other approved models to calculate emissions from land use projects, such as the California Emissions Estimator Model (CalEEMod) software, initially released in 2011 and updated in 2016.

The SCAQMD has published a guidance document called the *Final Localized Significance Threshold Methodology* that is intended to provide guidance in evaluating localized effects from mass emissions during construction (SCAQMD 2008).

SCAQMD Rules and Regulations

All projects are subject to SCAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction anticipated under the proposed Project would include the following:

Rule 401 – Visible Emissions. This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in visible emissions. Specifically, the rule prohibits the discharge of any air contaminant into the atmosphere by a person from any single source of emission for a period or periods aggregating more than 3 minutes in any 1 hour that is as dark or darker in shade than that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

Rule 402 – Nuisance. This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in a public nuisance. Specifically, this rule prohibits any person from discharging quantities of air contaminants or other material from any source such that it would result in an injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. Additionally, the discharge of air contaminants would also be prohibited where it would endanger the comfort, repose, health, or safety of any number of persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

Rule 403 – Fugitive Dust. This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any

[1] Available at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

activity or human-made condition capable of generating fugitive dust, and requires best available control measures to be applied to earthmoving and grading activities.

Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines. This rule applies to stationary compression ignition (CI) engine greater than 50 brake horsepower and sets limits on emissions and operating hours. In general, new stationary emergency standby diesel-fueled engines greater than 50 brake horsepower are not permitted to operate more than 50 hours per year for maintenance and testing.

4.3.3 Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the significance of air quality impacts are based on Appendix G of the *CEQA Guidelines*. The proposed Project would have a significant effect on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan (see Impact 4.3-1, below);
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (see Impact 4.3-2, below);
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative threshold for ozone precursors) (see Impact 4.3-3, below);
- Expose sensitive receptors to substantial pollutant concentrations (see Impact 4.3-4, below);
- Create objectionable odors affecting a substantial number of people (see Impact 4.3-5, below).

As guided by Appendix G of the *CEQA Guidelines*, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. As such, the significance thresholds and analysis methodologies in SCAQMD's *CEQA Air Quality Handbook* are used in evaluating project impacts. The SCAQMD has established regional daily mass emissions thresholds for criteria pollutants and ozone precursors, which are shown in **Table 4.3-5.**

TABLE 4.3-5
SCAQMD REGIONAL AIR QUALITY SIGNIFICANCE THRESHOLDS

	Mass Daily Thresholds (lbs/day)	
Pollutant	**Construction**	**Operations**
Oxides of Nitrogen (NO_X)	100	55
Reactive Organic Gases (ROG)	75	55
Respirable Particulate Matter (PM_{10})	150	150
Fine Particulate Matter ($PM_{2.5}$)	55	55
Oxides of Sulfur (SO_X)	150	150
Carbon Monoxide (CO)	550	550
Lead[a]	3	3
TACs (including carcinogens and non-carcinogens	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	

[a] As the proposed plan would not involve the development of any major lead emissions sources, lead emissions are not analyzed further in the EIR.

SOURCE: SCAQMD, 2015b.

Aside from regional air quality impacts, projects in the SoCAB are also required to analyze local air quality impacts. As discussed previously, SCAQMD has developed localized significance thresholds (LSTs) that represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards, and thus would not cause or contribute to localized air quality impacts. LSTs are developed based on the ambient concentrations of that pollutant for each of the 38 source receptor areas (SRAs) in the SoCAB. The localized thresholds, which are found in the mass rate look-up tables in SCAQMD's *Final Localized Significance Threshold Methodology* document, were developed for use on projects that are less than or equal to five acres in size and are only applicable to the following criteria pollutants: NOx, CO, PM_{10}, and $PM_{2.5}$.

The applicable construction LSTs for SRA 22 (Corona/Norco Area), SRA 23 (Metropolitan Riverside), and SRA 34 (Southwest San Bernardino Valley) in which the plan activities are located, are shown in **Table 4.3-6**. The applicable construction LSTs for each proposed activity at the nearest residential use within SRAs 22, 23, and 33 are presented below.

It should be noted that with regards to NOx emissions, the two principal types of NOx are NO and NO_2, with the vast majority (95 percent) of the NOx emissions being comprised of NO. However, because adverse health effects are associated with NO_2 and not NO, the analysis of localized air quality impacts associated with NOx emissions is focused on NO_2 levels. For combustion sources, SCAQMD assumes that the conversion of NO to NO_2 is complete at a distance of 5,000 meters from the source.

TABLE 4.3-6
SCAQMD LOCALIZED AIR QUALITY SIGNIFICANCE THRESHOLDS

Proposed Activity	SRA	Site Size (Acres)[b]	Distance to Receptor (Meters)	Allowable emissions (pounds/day) as a function of receptor distance (meters) from site boundary			
				NO_x[a]	CO	PM_{10}	$PM_{2.5}$
Arlington Recharge	23	≤ 1	25	118	602	4	3
Cannon Pump Station	23	>1 to < 2	25	170	883	7	4
ID-4 Crossing Refurbishment	22	>2 to 5 or more	500	778	22,490	228	113
Chino Basin Production Well	33	≤ 1	25	118	863	5	4
Arundo Removal	22	>2 to 5 or more	50	302	2,470	37	11
	23	>2 to 5 or more	50	302	2,178	40	10

[a] The localized thresholds listed for NOx in this table take into consideration the gradual conversion of NO to NO_2.The analysis of localized air quality impacts associated with NOx emissions focuses on NO_2 levels as they are associated with adverse health effects.

[b] The site size for the localized air quality significance threshold is classified into one of three categories. They are as follows: (1) ≤ 1 acre, (2) >1 acre to < 2 acres, and (3) >2 acres to 5 or more acres.

SOURCE: SCAQMD, 2009.

Methodology

This EIR section focuses on the nature and magnitude of the change in the air quality environment due to implementation of the proposed plan. Air pollutant emissions associated with the proposed plan would result from the construction of the proposed activities, including the drilling of wells, installation of pipelines, and vegetation removal. The emissions generated by these activities and other secondary sources have been estimated and compared to the applicable thresholds of significance recommended by SCAQMD.

Construction

Short-term construction-generated emissions of criteria air pollutants and ozone precursors associated with the proposed plan were modeled using CalEEMod Version 2016.3.2, as recommended by SCAQMD. CalEEMod was used to determine whether short-term construction-related emissions of criteria air pollutants associated with the proposed plan would exceed SCAQMD's applicable regional thresholds and whether mitigation would be required.

The duration of use for each construction phase, types of equipment, construction equipment specifications, the number of workers, vendors and haul trucks, and vehicle miles traveled were estimated based on reasonable assumptions of a worst-case daily construction scenario. The worst-case annual construction scenarios modeled for each project component represent the maximum amount of construction equipment used, acres disturbed, and vehicle trips traveled in order to represent a peak day of emissions generated during construction as a result of program implementation. Because the proposed components of the Project would all occur within the

SoCAB, total emissions from activities that would overlap over the course of the construction period for all five specific projects have been totaled to determine the regional impact on air quality emissions. Modeling was based on project-specific data, where available. Where project-specific information was not available, reasonable assumptions based on other similar projects and default model settings were used to estimate criteria air pollutant and ozone precursor emissions. All construction assumptions are provided in **Appendix B** of this EIR.

In addition to regional pollutant emissions, localized impacts on sensitive receptors must also be addressed. The potential for localized effects from the on-site portion of daily emissions are evaluated at nearby sensitive receptor locations that could be impacted by the proposed plan based on the SCAQMD's LST methodology, which utilizes on-site mass emission rate look-up tables and project-specific modeling, where appropriate. According to SCAQMD's LST methodology, LSTs are only applicable to the on-site construction emissions that are generated by a project and do not apply to emissions generated offsite such as mobile emissions on roadways from worker, vendor, and haul truck trips. LSTs are only applicable to the following criteria pollutants: NOx, CO, PM_{10}, and $PM_{2.5}$. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area (SRA) and distance to the nearest sensitive receptor. For PM_{10} and $PM_{2.5}$, LSTs were derived based on requirements in SCAQMD Rule 403, Fugitive Dust. The mass rate look-up tables were developed for each SRA and can be used to determine whether or not a project may generate significant adverse localized air quality impacts.

For the purpose of analyzing localized air quality impacts, SCAQMD has developed LSTs for project size categories of less than or equal to 1 acre, greater than 1 acre to 2 acres and greater than 2 acres to greater than or equal to 5 acres based on their distances to the nearest sensitive receptors. Under conditions where the Project's on-site construction emissions, with or without mitigation is below the LST threshold, the Project would result in less than significant impacts. Where emissions, implementing all appropriate mitigation, exceed the LSTs, air dispersion modeling would be required to fully evaluate the potential impacts of the proposed Project on its surrounding off-site sensitive receptors.

Because the proposed activities would occur in different locations and impact different local receptors, each component of the Project is compared individually to the applicable LST threshold for each Project component (site size, location to the nearest receptor, etc.).

Operation and Maintenance

Long-term (i.e., operational) operation of the proposed facilities would result in minimal activity including occasional maintenance. Therefore, emissions of criteria air pollutants and precursors associated with the Project are anticipated to be minimal and is not analyzed further.

CO Hotspots

Localized areas where ambient concentrations exceed state and/or federal standards are termed CO hotspots. Emissions of CO are produced in greatest quantities from motor vehicle combustion and are usually concentrated at or near ground level because they do not readily disperse into the atmosphere, particularly under cool, stable (i.e., low or no wind) atmospheric conditions. Carbon monoxide decreased dramatically in the SoCAB with the introduction of the catalytic converter in 1975. No exceedances of CO have been recorded at monitoring stations in the SoCAB for some time and the basin is currently designated as a CO attainment area for both the CAAQS and NAAQS.

Long-term operation of the proposed facilities would result in minimal activity including occasional maintenance. Therefore, Project operations would not contribute to potential CO hotpots and is not analyzed further.

TAC Emissions

DPM was identified as a TAC by CARB in 1998. The potential cancer risk from the inhalation of DPM outweighs the potential for all other health impacts. The greatest potential for TAC emissions during Project construction would be related to DPM emissions associated with heavy-duty equipment during construction activities. Construction activities associated with the Project would be sporadic, transitory, and short term in nature. OEHHA is responsible for developing and revising guidelines for performing health risk assessments (HRAs) under the State's the Air Toxics Hot Spots Program Risk Assessment (AB 2588) regulation. In March 2015, OEHHA adopted revised guidelines that update the previous guidance by incorporating advances in risk assessment with consideration of infants and children using Age Sensitivity Factors (ASF). The revised OEHHA Guidance takes into account the sensitivity of children to TAC emissions, different breathing rates, and time spent at home. Children have a higher breathing rate compared to adults and would likely spend more time at home resulting in longer exposure durations.

As noted above, the greatest potential for TAC emissions would be related to diesel particulate matter emissions associated with heavy equipment operations during construction activities. In addition, incidental amounts of toxic substances such as oils and solvents would be used. These products would comply with all applicable SCAQMD rules for their manufacture and use. The Project will be subject to several SCAQMD rules designed to limit exposure to TACs during construction activities. The Project would be required to comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. The analysis incorporates a qualitative discussion of health risk based on the type and length of construction activities.

Impacts Discussion

Air Quality Plan

Impact 4.3-1: The proposed Project would not conflict with or obstruct implementation of the applicable air quality plan.

The AQMP was adopted by the SCAQMD as a program to lead the Air Basin into compliance with several criteria pollutant standards and other federal requirements. It relies on emissions forecasts based on demographic and economic growth projections provided by SCAG's Regional Transportation Program (SCAQMD 2012). SCAG is charged by California law to prepare and approve "the portions of each AQMP relating to demographic projections and integrated regional land use, housing, employment, and transportation programs, measures and strategies (SCAQMD 2012)." As discussed previously, projects whose growth is included in the SCAG projections used in the formulation of the AQMP are considered to be consistent with the plan and not to interfere with its attainment. The SCAQMD recommends that, when determining whether a project is consistent with the current AQMP, a lead agency must assess whether the project would directly obstruct implementation of the plan and whether it is consistent with the demographic and economic assumptions upon which the plan is based (SCAQMD 1993).

The proposed Project would result in an increase in short-term employment compared to existing conditions. Although the Project will require workers over the construction process, these jobs are temporary in nature. Construction jobs under the Project would not conflict with the long-term employment projections upon which the AQMP is based, specifically as the majority of construction workers are employed through a construction company and are not hired specifically for a single construction job.

Control strategies in the AQMP with potential applicability to short-term emissions from construction activities include strategies denoted in the AQMP as MOB-08 and MOB-10, which are intended to reduce emissions from on-road and off-road heavy-duty vehicles and equipment by accelerating replacement of older, emissions-prone engines with newer engines meeting more stringent emission standards. Trucks and other vehicles in loading and unloading queues would be parked with engines off to reduce vehicle emissions during construction activities. Additionally, the Project would comply with CARB requirements to minimize short-term emissions from on-road and off-road diesel equipment. The Project would also comply with SCAQMD regulations for controlling fugitive dust pursuant to SCAQMD Rule 403.

Compliance with these requirements is consistent with and meets or exceeds the AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities. Because the Project would not conflict with the control strategies intended to reduce emissions from construction equipment, the Project would not conflict with or obstruct implementation of the AQMP, and impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Air Quality Standards/Violations

Impact 4.3-2: The proposed Project could violate an air quality standard or contribute substantially to an existing or projected air quality violation.

Construction activities associated with the proposed Project would generate pollutant emissions during construction activities. The worst-case daily construction emissions were calculated to determine maximum daily construction emissions (pounds per day) for the Project. Results of the criteria pollutant calculations are presented in **Table 4.3-7.** The Project includes five components occurring within the same time period at five different locations within the basin. Therefore, as a worst case analysis, it is assumed that various phases of construction could overlap. As shown in Table 4.3-7, construction-related daily emissions for the criteria and precursor pollutants (VOC, CO, SO_X, PM10, and PM2.5) would be below SCAQMD significance thresholds. However, without mitigation, NOx emissions would exceed the SCAQMD's threshold. These calculations include appropriate dust control measures required to be implemented during each phase of development, as required by SCAQMD Rule 403 (Control of Fugitive Dust). Therefore, with respect to regional emissions from construction activities, impacts would be potentially significant.

TABLE 4.3-7
MAXIMUM UNMITIGATED REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY) [a]

Source	VOC	NO_X	CO	SO_2	PM10[b]	PM2.5[b]
Individual Project Components						
Arlington Production Wells (2019)	1.07	10.63	8.51	0.02	1.46	0.61
Arlington Production Wells (2020)	0.99	9.88	8.35	0.02	1.42	0.56
Arlington Production Wells (2020)	3.70	36.36	32.00	0.06	2.41	1.84
Arlington Production Wells (2021)	3.35	32.69	31.48	0.06	2.16	1.61
Arlington Production Wells (2022)	3.02	28.75	31.05	0.06	1.92	1.38
Arlington Production Wells (2023)	2.80	25.97	30.78	0.06	1.76	1.23
Cannon Pump Station (2020)	4.74	47.07	41.39	0.08	2.82	2.28
Cannon Pump Station (2021)	4.29	42.23	40.72	0.08	2.51	1.99
Cannon Pump Station (2022)	3.85	36.95	40.16	0.08	2.20	1.70
Cannon Pump Station (2023)	3.75	35.05	42.20	0.08	2.09	1.60
ID-4 CRA Crossing (2019)	1.34	12.77	9.21	0.02	1.39	0.72
ID-4 CRA Crossing (2020)	1.20	11.55	8.84	0.02	1.30	0.64
Chino Basin Production Wells, Refurbishment and Treatment System (2019)	3.28	32.46	26.20	0.06	1.99	1.64

Source	VOC	NO_X	CO	SO_2	PM10[b]	PM2.5[b]
Chino Basin Production Wells, Refurbishment and Treatment System (2020)	3.03	30.15	25.97	0.06	1.80	1.47
Arundo Removal (2019)	5.20	50.43	31.09	0.05	15.06	9.32
Arundo Removal (2020)	4.93	47.27	30.65	0.05	14.87	9.14
Arundo Removal (2021)	4.69	44.80	30.32	0.05	14.68	8.96
Arundo Maintenance (2021)	0.00	0.00	0.04	0.00	0.01	0.00
Arundo Maintenance (2022)	0.00	0.00	0.03	0.00	0.01	0.00
Arundo Maintenance (2023)	0.00	0.00	0.03	0.00	0.01	0.00
Overlapping Phases						
Arlington Wells + ID-4 + Chino Basin (2019)	5.69	55.85	43.92	0.11	4.83	2.97
Arlington Wells + ID-4 + Chino Basin + Arundo (2019)	10.89	106.28	75.00	0.16	19.90	12.28
Arlington Wells + ID-4 + Chino Basin + Arundo (2020)	10.16	98.86	73.81	0.16	19.39	11.80
Arlington Facilities + Cannon PS + Chino Basin + Arundo (2020)	16.40	160.85	130.01	0.25	21.90	14.72
Arlington Facilities + Cannon PS + Arundo (2020)	13.37	130.70	104.04	0.19	20.09	13.25
Arlington Facilities + Cannon PS + Arundo (2021)	12.32	119.72	102.52	0.18	19.34	12.56
Arlington Facilities + Cannon PS + Arundo M (2021)	7.64	74.92	72.24	0.13	4.68	3.60
Arlington Facilities + Cannon PS + Arundo M (2022)	6.87	65.70	71.24	0.13	4.13	3.09
Arlington Facilities + Cannon PS + Arundo M (2023)	6.55	61.03	73.02	0.14	3.86	2.83
Maximum Daily Construction Emissions	***16.40***	***160.85***	***130.01***	***0.25***	***21.90***	***14.72***
SCAQMD Significance Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	**Yes**	No	No	No	No

NOTES:
[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix B.
[b] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

SOURCE: ESA, 2018

With incorporation of Mitigation Measure AIR-1, emissions of NOx would be reduced to below significance thresholds. Results of the mitigated criteria pollutant concentrations are presented in **Table 4.3-8**. As shown, with incorporation of mitigation measure AIR-1, impacts from regional emissions of NOx during construction activities would be reduced to less than significant levels.

TABLE 4.3-8
MAXIMUM MITIGATED REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY) [a]

Source	VOC	NO_X	CO	SO_2	PM10[b]	PM2.5[b]
Individual Project Components						
Arlington Production Wells (2019)	0.59	10.12	11.81	0.02	1.46	0.62
Arlington Production Wells (2020)	0.58	9.97	11.67	0.02	1.46	0.62
Arlington Pipeline/Facilities (2020)	1.59	27.26	36.36	0.06	2.02	1.56
Arlington Pipeline/Facilities (2021)	1.55	27.07	36.21	0.06	2.00	1.55

Source	VOC	NO_X	CO	SO_2	PM10[b]	PM2.5[b]
Arlington Pipeline/Facilities (2022)	1.53	26.96	36.11	0.06	2.00	1.54
Arlington Pipeline/Facilities (2023)	1.50	26.57	36.00	0.06	1.99	1.54
Cannon Pump Station (2020)	2.10	35.55	47.67	0.08	2.33	1.95
Cannon Pump Station (2021)	2.05	35.29	47.49	0.08	2.31	1.93
Cannon Pump Station (2022)	2.01	35.13	47.37	0.08	2.30	1.92
Cannon Pump Station (2023)	2.06	36.49	50.01	0.08	2.40	2.01
ID-4 CRA Crossing (2019)	1.34	12.77	9.21	0.02	1.39	0.72
ID-4 CRA Crossing (2020)	1.20	11.55	8.84	0.02	1.30	0.64
Chino Basin Production Wells, Refurbishment and Treatment System (2019)	0.75	12.98	15.48	0.03	1.02	0.75
Chino Basin Production Wells, Refurbishment and Treatment System (2020)	0.73	12.83	15.40	0.03	1.02	0.74
Arundo Removal (2019)	1.20	23.68	31.50	0.05	13.46	7.93
Arundo Removal (2020)	1.19	23.66	31.45	0.05	13.46	7.93
Arundo Removal (2021)	1.18	23.63	31.41	0.05	13.45	7.93
Arundo Maintenance (2021)	0.00	0.00	0.04	0.00	0.01	0.00
Arundo Maintenance (2022)	0.00	0.00	0.03	0.00	0.01	0.00
Arundo Maintenance (2023)	0.00	0.00	0.03	0.00	0.01	0.00
Overlapping Phases						
Arlington Wells + ID-4 + Chino Basin (2019)	2.68	35.86	36.50	0.07	3.87	2.09
Arlington Wells + ID-4 + Chino Basin+ Arundo (2019)	3.88	59.54	68.00	0.12	17.32	10.02
Arlington Wells + ID-4 +Chino Basin+ Arundo (2020)	3.70	58.01	67.36	0.12	17.24	9.94
Arlington Facilities + Cannon PS+ Chino Basin + Arundo (2020)	5.62	99.30	130.88	0.21	18.82	12.18
Arlington Facilities + Cannon PS+ Arundo (2020)	4.88	86.47	115.48	0.19	17.80	11.44
Arlington Facilities + Cannon PS + Arundo (2021)	4.78	85.99	115.12	0.18	17.77	11.41
Arlington Facilities + Cannon PS + Arundo M (2021)	3.60	62.36	83.74	0.13	4.33	3.48
Arlington Facilities + Cannon PS + Arundo M (2022)	3.54	62.10	83.52	0.13	4.31	3.46
Arlington Facilities + Cannon PS + Arundo M (2023)	3.56	63.06	86.04	0.14	4.40	3.55
Maximum Daily Construction Emissions	***5.62***	***99.30***	***130.88***	***0.21***	***18.82***	***12.18***
SCAQMD Significance Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

NOTES:

[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix B.

[b] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

SOURCE: ESA, 2018

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

AIR-1: For each project during construction, off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 emissions standards at a minimum and Tier 4 where available. A copy of each unit's certified tier specification or model year specification shall be available upon request at the time of mobilization of each applicable unit of equipment. The mitigation applies to off-road equipment and does not apply to on-road vehicles.

Significance Determination after Mitigation: Less than Significant

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Cumulative Increase of Criteria Pollutant

Impact 4.3-3: The proposed Project could result in a cumulatively considerable net increase of a criteria pollutant.

The SCAQMD neither recommends quantified analyses of cumulative construction or operational emissions nor provides methodologies or thresholds of significance to be used to assess cumulative construction or operational impacts. Individual cumulative projects that exceed the SCAQMD recommended daily thresholds for an individual project would cause a cumulatively considerable impact.

The Project area is located within the SoCAB, which is considered the cumulative study area for air quality. The SoCAB is currently classified as a state nonattainment area for ozone, PM10, and $PM_{2.5}$, and is a federal nonattainment area for ozone and PM2.5. Based on SCAQMD's cumulative air quality impact methodology, SCAQMD recommends that if an individual project results in air emissions of criteria pollutants (ROG, CO, NOx, SO_X, PM10, and PM2.5) that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the program region is in nonattainment under an applicable federal or state ambient air quality standard.

As shown in Table 4.3-6 above, regional construction emissions of NOx would exceed the SCAQMD's daily thresholds prior to implementation of mitigation. Therefore, the proposed Project's contribution to cumulative NOx for regional construction emissions would be cumulatively considerable.

With regard to toxic air contaminants, the proposed Project would not result in substantial pollutant concentrations during construction activities that would exceed project-level TAC thresholds. Project construction activities would be short-term and would include the use of off-road equipment that would comply with increasingly stringent emissions requirements. Therefore,

the proposed Project would not expose sensitive receptors to substantial pollutant concentrations and impacts would not be cumulatively considerable.

The emissions from construction of the Project are not predicted to exceed any applicable SCAQMD regional or local impact threshold with implementation of mitigation measure AIR-1 and therefore, are not expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Therefore, the Project would not result in a cumulatively considerable net increase for non-attainment pollutants or ozone precursors and would result in a less than significant impact for construction emissions.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

The implementation of Mitigation Measure AIR-1 is required.

Significance Determination after Mitigation: Less than Significant

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Sensitive Receptors

Impact 4.3-4: The proposed Project could expose sensitive receptors to substantial pollutant concentrations.

Localized Significance

The localized construction air quality analysis was conducted using the methodology described in the SCAQMD Localized Significance Threshold Methodology. The screening criteria provided in the LST Methodology were used to determine localized construction emissions thresholds for each component of the Project. The Project consists of five different components at different locations. As previously discussed, SCAQMD recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the Project. Therefore, localized emissions are analyzed for each of the five Project components and thresholds are determined by each project component's site conditions (such as site size and location of nearest sensitive receptor).

Using the LST Methodology, the results of the analysis determined localized Project-related construction emissions would not exceed applicable thresholds of significance for any of the five Project components, as shown in **Table 4.3-9**. Therefore, Project-related localized construction emissions would be less than significant.

TABLE 4.3-9
MAXIMUM UNMITIGATED LOCALIZED CONSTRUCTION EMISSIONS (POUNDS PER DAY) [a, b]

Source	NO_X	CO	PM10[c]	PM2.5[c]
Arlington Production Wells and Pipeline Project				
Maximum Localized Daily Construction Emissions	34.58	30.56	2.01	1.72
Applicable SCAQMD Significance Threshold	118	602	4	3
Exceeds Threshold?	**No**	**No**	**No**	**No**
Cannon Pump Station Project				
Maximum Localized Daily Construction Emissions	44.87	40.98	2.40	2.16
Applicable SCAQMD Significance Threshold	170	883	7	4
Exceeds Threshold?	**No**	**No**	**No**	**No**
ID-4 CRA Crossing Refurbishment				
Maximum Localized Daily Construction Emissions	11.49	7.80	1.03	0.62
Applicable SCAQMD Significance Threshold	778	22,490	228	113
Exceeds Threshold?	**No**	**No**	**No**	**No**
Chino Basin Production Wells, Refurbishment and Treatment System				
Maximum Localized Daily Construction Emissions	30.74	24.68	1.60	1.53
Applicable SCAQMD Significance Threshold	118	862	5	4
Exceeds Threshold?	**No**	**No**	**No**	**No**
Santa Ana River Arundo Removal				
Maximum Localized Daily Construction Emissions	50.16	30.54	14.93	9.28
Applicable SCAQMD Significance Threshold[d]	302	2,178	37	10
Exceeds Threshold?	**No**	**No**	**No**	**No**

[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix B.
[b] See Table 3.3-5 site size and receptor distance assumptions for the applicable SCAQMD LST threshold.
[c] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.
[d] Arundo removal would take place within two monitoring areas (see Table 3.3-5). The lower threshold for each pollutant has been utilized as a worst-case analysis.

SOURCE: ESA, 2018

Project construction activities would be temporary and short term in nature with varying levels of construction activity occurring on a daily basis. The most intensive DPM generating construction activities would be during Arundo removal activities due to the amount of equipment required. However, Arundo removal activities would occur along the Santa Ana River in a linear fashion, moving from segment to segment. Therefore, DPM emissions would not be concentrated near any one receptor for extended periods of time.

Construction would occur at five locations that are not located near enough to create additive DPM emissions affecting any one receptor. Construction activities for the Arlington Production

Wells and Pipeline project, Cannon Pump Station project, ID-4 CRA Crossing Refurbishment, Chino Basin Production Wells, Refurbishment and Treatment System project, and Santa Ana River Arundo Removal would be located as close as 25 feet, 30 feet, 1,700 feet, 30 feet, and 50 feet from the nearest sensitive receptors, respectively. However, construction activities would occur at distances of 2,000 feet or more from other off-site sensitive receptors. Considering the tendency for DPM to fall out from an exhaust stream once emitted to the atmosphere (through a process called dry deposition), and dependent on other properties such as wind patterns, direction, and local topography, receptors that are further away from the site could be less impacted than those closer to the site. It has been demonstrated that at a distance of 1,000 feet from these sources, air pollution, including DPM emissions, can be reduced up to 80 percent. (CARB 2005)

CARB recommends that there be a buffer between sources of heavy DPM emissions such as distribution centers, rail yards, and ports, to reduce exposure. (CARB 2005) CARB did not directly assess construction activities in their Land Use Handbook. However, for example, in 2005 CARB found that off-site lifetime residential health risks from DPM drop to acceptable levels at 500-1,000 feet from the fenceline of distribution centers, dependent on the number and types of trucks and equipment present. These risks assume that DPM equipment is running onsite for 300 hours per week with an engine operating load factor of 60 percent. (CARB 2005) Construction equipment runs for approximately 40 hours per week, per piece of equipment and the average equipment operating load factors is closer to 40 percent. (CARB 2005) Therefore, construction sites with approximately 11 pieces of diesel-powered equipment running simultaneously could produce weekly emissions analogous to those studied by the CARB.

Since the time of the CARB guidelines, emission factors for diesel powered vehicles, both on- and off-road equipment, have improved substantially, due to tightening federal engine standards and CARB ATCMs requiring early adoption of these standards in California fleets (discussed above). Specifically, in 2004 the EPA instituted the Tier 4 emissions standard requirement that reduces PM emissions by up to 95 percent. Currently all new equipment being purchased must meet the EPA Tier 4 requirement, and there are restrictions and regulations governing the purchasing of used equipment. As of 2016, Tier 0 and Tier 1 equipment cannot be added to any fleet. By 2018 for larger and medium fleets and 2023 for small fleets, all equipment added must meet at a minimum Tier 3 requirements. Additionally, all fleets must meet fleet average emission targets or best available control measures which become more stringent in the future.

The fleet of construction equipment expected to operate across the Project's five sites beginning in 2019 will be substantially cleaner than those used to establish CARB's recommended set-back distances through the use of Tier 3 equipment, at a minimum (as required by Mitigation Measure AIR-1). Tier 4 equipment would be utilized where available.

In addition, incidental amounts of toxic substances such as oils and solvents would be used. These products would comply with all applicable SCAQMD rules for their manufacture and use. The Project will be subject to several SCAQMD rules designed to limit exposure to TACs during construction activities. The Project would be required to comply with the CARB ATCM that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and

the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction.

Given the short-term nature of construction activities, type of construction activities occurring at the five sites, and the increasing stringency in emission requirements of off-road construction fleets, the TAC emissions from construction activities would result in a less than significant incremental increase in lifetime carcinogenic health risks to offsite receptors.

Therefore, the Project's construction emissions would not exceed the TAC thresholds, and the Project would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Odors

Impact 4.3-5: The proposed Project could create objectionable odors affecting a substantial number of people.

During construction activities, only short-term, temporary odors from construction employee vehicle exhaust, construction equipment engines, and potential use of herbicide for *Arundo donax* removal would occur. These odors would be temporary, and would be transitory within each individual project area. The odors would also disperse rapidly and would be typical of the existing construction equipment activities. Because Project construction would not cause objectionable odors affecting a substantial number of people and would be of relatively limited duration, impacts would be less than significant.

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The Project does not include any uses identified by SCAQMD as being associated with substantial odors. As a result, Project operations are not expected to discharge contaminants into the air in quantities that would cause a nuisance, injury, or annoyance to the public or property pursuant to SCAQMD Rule 402. Therefore, the Project would not create adverse odors affecting a substantial number of people, and impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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4.3.4 References

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4.4 Biological Resources

This section describes the environmental setting for biological resources, as well as applicable regulatory framework, potential impacts associated with implementation of the proposed Project, and mitigation measures to reduce those impacts to a level of less than significant.

4.4.1 Environmental Setting

This section includes a broad overview of the biological resources in the project areas. Common biological resources within the project areas are discussed, but the focus will be on sensitive biological resources that are regulated by federal, state, and local agencies including vegetation communities, sensitive habitats, and special-status plants and animals. Data provided in this section was obtained primarily from the following sources:

- A Classification of California Vegetation USDA-Forest Service vegetation mapping (CALVEG 1997-2009);
- Lidar Data for Prado Basin and Portions of the Santa Ana River (USACE 2015)
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) Online Occurrence Records (CDFW 2018);
- California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (CNPS 2018);
- IEUA Facilities Master Plan Draft Public Environmental Impact Report (ESA 2016);
- Review of the draft Upper Santa Ana River Habitat Conservation Plan documents (Upper SAR HCP 2014).
- Sterling Natural Resource Center Draft Environmental Impact Report (ESA 2015);
- USFWS Online Mapper of Critical Habitat for Threatened and Endangered Species (USFWS 2018a);
- USFWS National Wetland Inventory Online Mapper (USFWS 2018b);
- Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

Regional Setting

The Project region is characterized by the highly urbanized San Bernardino Valley and Los Angeles Basin, which are separated from the Mojave Desert to the north by the San Gabriel and San Bernardino Mountains. The region is within the Santa Ana River Watershed, which is a relatively arid watershed defined by the Santa Ana River that spans approximately 100 miles from the San Bernardino Mountains to the Pacific Ocean. The Mediterranean climate in the region is dry, with mild winters and hot summers in the valleys, and light snow and warm summers in the highest mountain elevations.

Local Setting

Chino Basin

The Chino Basin area is an alluvial valley that is relatively flat from east to west, sloping north to south at a 1 to 2 percent grade. Basin elevation ranges from 2,000 feet above mean sea level (amsl) adjacent to the San Gabriel Mountain foothills to approximately 500 feet amsl near Prado Basin. The area that encompasses the proposed Project is bordered to the north by the San Gabriel Mountains; to the east by the Rialto-Colton Basin, the Jurupa Mountains and the Riverside County/San Bernardino County boundary; to the south by the Prado Basin; and to the west by the Chino Hills, and the Pomona and Claremont Basins (IEUA 2000).

The Chino Basin is bounded on the east by the Rialto-Colton fault; on the southeast by the contact with impermeable rocks forming the Jurupa Mountains and low divides connecting the exposures. On the south, the basin is bounded by contact with impermeable rocks of the Puente Hills and by the Chino fault; on the northwest by the San Jose fault; and on the north by impermeable rocks of the San Gabriel Mountains and by the Cucamonga fault. San Antonio Creek and Cucamonga Creek drain the surface of the subbasin southward to join Santa Ana River (DWR 2006). Chino Hills State Park is located adjacent to the Prado Basin, and provides a refuge for native natural communities that are contiguous with other open space, providing habitat linkage and wildlife movement corridors.

Riverside-Arlington Basin

The Riverside-Arlington Basin underlies part of the Santa Ana River Valley in northwest Riverside County and southwest San Bernardino County. This basin is bound by impermeable rocks of Box Springs Mountains on the southeast, Arlington Mountain on the south, La Sierra Heights and Mount Rubidoux on the northwest, and the Jurupa Mountains on the north. The northeast boundary is formed by the Rialto-Colton fault, and a portion of the northern boundary is a groundwater divide beneath the City of Bloomington. The Santa Ana River flows over the northern portion of the basin (DWR 2004).

Prado Basin and Santa Ana River

The Santa Ana River watershed is the largest coastal river system in Southern California. The Santa Ana Watershed includes parts of San Bernardino, Riverside, Orange, and Los Angeles Counties and covers nearly 3,000 square miles. The watershed includes a diversity of terrain including mountains, foothills, valleys, and the coastal plain. The main river is the Santa Ana River, which contains more than 50 tributaries (SAWA 2017).

The upper Santa Ana River flows through Prado Basin. This basin behind Prado Dam supports the largest riparian woodland in Southern California (Warner and Hendrix 1984) and is home to a wide array of sensitive plants and animals. The Prado Basin riparian woodland is sustained by surface flows, rising groundwater and periodically by surface water stored behind Prado Dam in Riverside County.

Vegetation Communities and Land Uses

The vegetation communities and land uses of each project are described below and depicted in **Figure 4.4-1a** through **Figure 4.4-1e**. 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); however, plant communities, land uses, and habitats not clearly described within the manual were characterized based on the dominant species or other visual characteristics of the community.

Chino Basin Production Wells, Refurbishment and Treatment System

The Chino Basin Production Wells, Refurbishment and Treatment System is located at the existing Well 34 operated and maintained by IEUA-member agency Monte Vista Water District in the City of Montclair, south of Interstate 10.

Barren/Developed

This category represents non-vegetated barren ground that is caused by urbanization when land is cleared prior to be being paved, as well as developed areas. This land-use type also represents other mechanically caused barren ground, such as open quarries or mined areas, barren ground along highways, and other areas cleared of vegetation prior to construction. Developed areas apply to landscapes that are dominated by urban structures, residential units, or other developed land uses such as roadways, city parks, and paved surfaces.

Barren/developed areas on the Chino Basin ProductionWells, Refurbishment and Treatment System site contain bare soil and gravel with only a few scattered non-native species, including red-stem filaree (*Erodium cicutarium*), flax-leaved horseweed (*Conyza bonariensis*), and red brome (*Bromus rubens*). Barren/developed areas comprise 0.82 acre of the Well 34 site.

Ornamental (Non-native)

Ornamental or non-native shrub species dominate this alliance, although other non-native conifers, hardwoods, and grasses may be present in this alliance. Mapped areas of this alliance are usually in developed areas, including urban and residential landscapes, parks, recreational areas, highways, cemeteries, etc. The areas along the edge of the street and at the driveway entrance were mapped as non-native/ornamental. There are no trees on site. Species observed include manzanita (*Arctosaphylos sp.*), rosemary (*Rosmarinus officinalis*), and crape myrtle. Ornamental vegetation comprises approximately 0.18 acre of the Chino Basin Production Wells, Refurbishment and Treatment System site.

Arlington Production Wells and Pipeline Project

The Arlington Production Wells and Pipeline includes the installation of two production wells and pipeline along existing urban streets within the City of Riverside.

SOURCE: ESRI; Riverside County; San Bernardino County; ESA

SARCCUP

Figure 4.4-1a

IEUA Well Refurbishment and Treatment System Vegetation Communities/Land Uses

ESA

SOURCE: ESRI; Riverside County; San Bernardino County; ESA

SARCCUP

Figure 4.4-1b

Arlington Production Wells and Pipeline Vegetation Communities/Land Uses

ESA

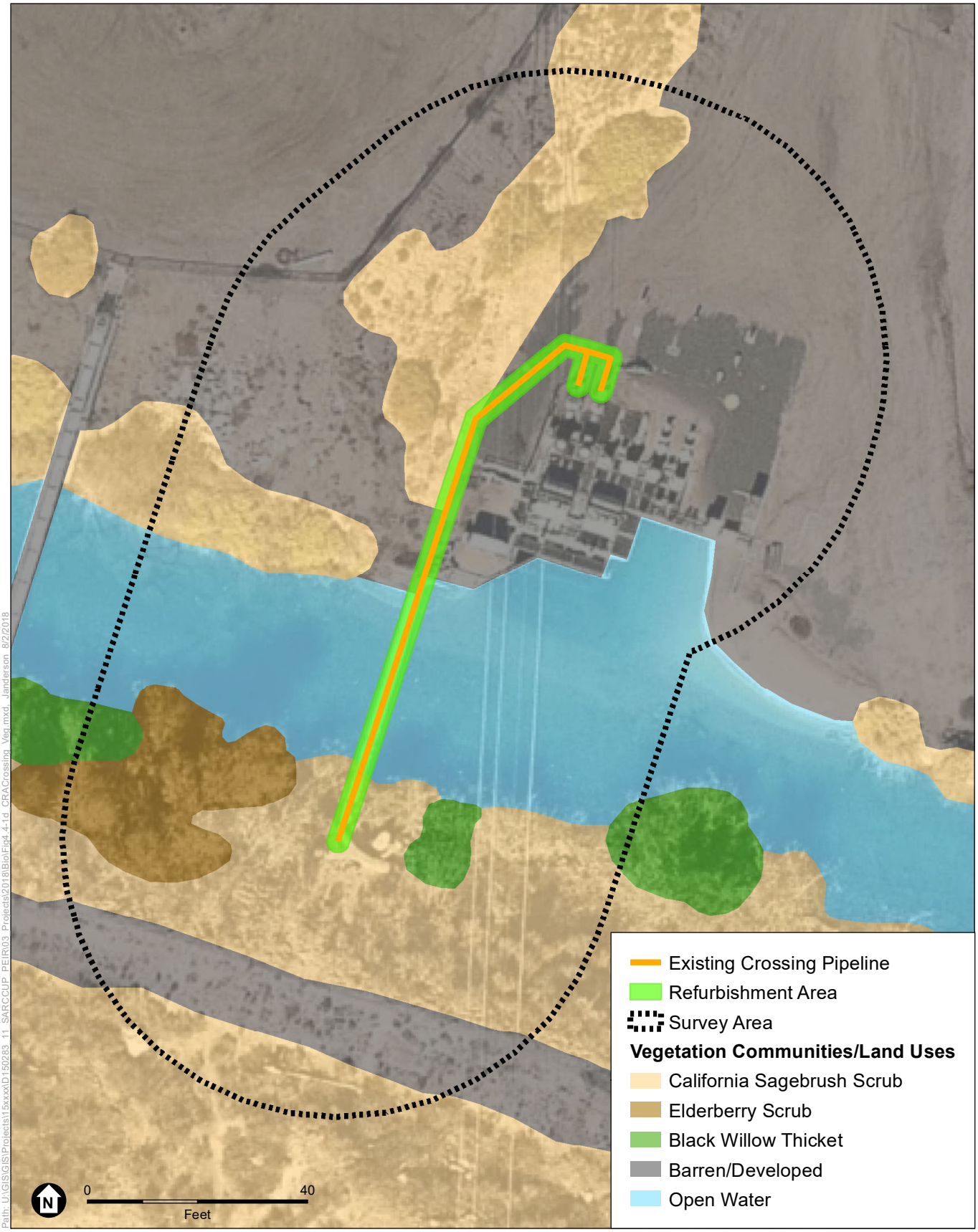
SOURCE: Mapbox Satellite Streets; Riverside County; ESA

SARCCUP

Figure 4.4-1c

WMWD Pump Station Project Vegetation Communities/Land Uses

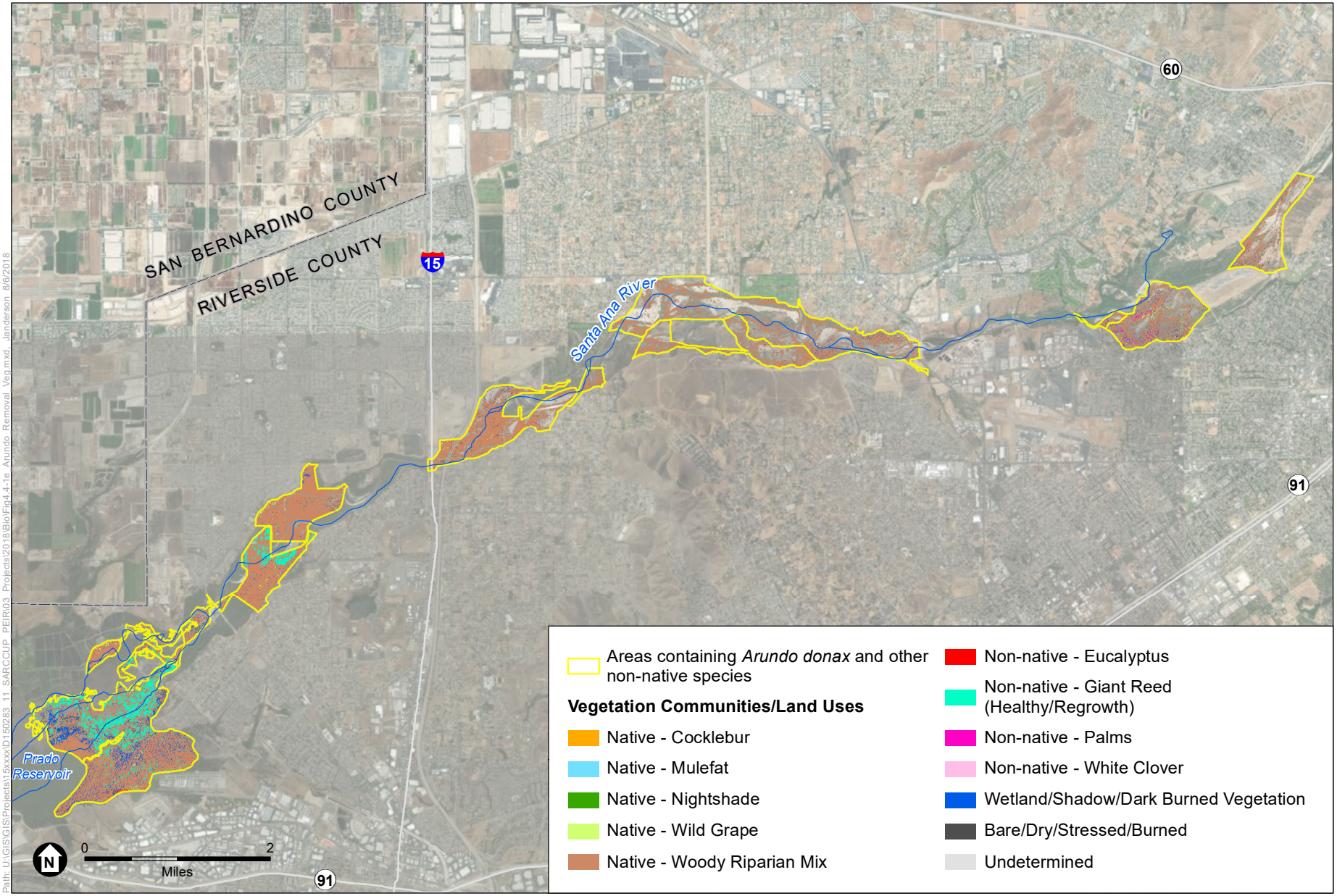
ESA



SOURCE: Mapbox Satellite Streets; Riverside County; ESA

SARCCUP

Figure 4.4-1d
ID-4 CRA Crossing Refurbishment Vegetation Communities/ Land Uses



SOURCE: ESRI; USACE 2015

SARCCUP

Figure 4.4-1e

Santa Ana River Arundo Removal Vegetation Communities/Land Uses

ESA

Ornamental/Developed

This category applies to landscapes that are dominated by urban structures, residential units, or other developed land use elements such as roadways, city parks, and schools. Mixtures of ornamental or non-native conifer and hardwood species are the dominant ornamental plants observed. Small amounts of non-native hardwood, conifer, shrubs, and grasses were also observed in this community. Tree species observed include southern magnolia (Magnolia grandiflora), saucer magnolia (*Magnolia x soulangiana*), Peruvian pepper tree (*Schinus molle*), crape myrtle (*Lagerstroemia indica*), blue jacaranda (*Jacaranda mimosifolia*), Hong Kong orchid tree (*Bauhinia X blakeana*), Canary Island date palm (*Phoenix canariensis*), date palm (*Phoenix dactylifera*), California fan palm (*Washingtonia filifera*), Mexican fan palm (*Washingtonia robusta*), queen palm (*Syagrus romanzoffiana*), pine (*Pinus sp*.), Italian cypress (*Cupressus sempervirens*), and river red gum (*Eucalyptus camaldulensis*).

Ornamental grass species observed include silver carpet daisy (*Dymondia margaretae*), Bermuda grass (*Cynodon dactylon*), and festuca turf grass (*Festuca sp*.). Ornamental shrubs observed include gold mound lantana (*Lantana camara*), star jasmine (*Trachelospermum jasminoides*), Japanese privet (*Ligustrum japonicum*), rose (*Rosa sp*.), and lily of the Nile (*Agapanthus africanus*). Approximately 102.65 acres of this community occupies the Arlington Production Well and Pipeline project site.

Cannon Pump Station

The Cannon Pump Station project would include the relocation and installation of a pump and installation of a second pump station within the City of Riverside at the southwest corner of Alessandro Boulevard and Overlook Parkway. The project site is an undeveloped lot within a residential neighborhood.

Black Willow Thicket Alliance

The Black Willow Thicket Alliance is defined by the dominance of any single or combination of tree species of willow (*Salix spp*.), such as Goodding black (*Salix gooddingii*), red (*Salix laevigata*), or arroyo (*Salix lasiolepis*). It has been mapped along streambanks below 1600 ft. (488 m) in the Coast Section and mainly below about 8,200 feet. (2,501 meters) in the Mountains Section. Areas within the canyon pump station site contain small willow patches dominated by Goodding black willow. Understory scrub species include mulefat (*Baccharis salicifolia*), as well as non-native tobacco tree (*Nicotiana glauca*) and salt cedar (*Tamarix ramosissima*). Approximately 0.63 acre of this community occupies the Canyon Pump Station site. This community is considered by CDFW to be a sensitive natural community.

Brittlebush Scrub Alliance

This alliance is dominated by either the shrubs brittlebush (*Encelia farinose*) tolerant of arid environments in the coast or desert. The associated species include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), coast cactus (O*puntia littoralis*), and lemonade berry (*Rhus integrifolia*). Flat upland areas within the Canyon Pump Sstation site contain encelia scrub. The scrub areas were observed mostly adjacent to the willow areas and were dominated by brittlebush with some scattered four-winged saltbush as well as

non-native short-pod mustard (*Hirschfeldia incana*), and tobacco tree. Approximately 0.65 acre of this community occupies the Canyon Pump Station site. This community is considered by CDFW to be a sensitive natural community.

Ornamental (Non-native)

Mixtures of ornamental or non-native conifer and hardwood species comprise the dominant species of this community. Small amounts of non-native pure stands of hardwood, conifer, shrubs, and grasses may be also associated with this community. Mapped areas of this alliance are usually in developed areas, including urban and residential landscapes, parks, recreational areas, highways, cemeteries, etc. The areas mapped as non-native ornamental at the Canyon Pump Station site are dominated by non-native pines (*Pinus sp*.) with some red river gum (*Eucalyptus camaldulensis*). There is very little understory and this community contains mostly pine needles. Approximately 0.29 acre of this community occupies the Cannon Pump Station site.

Barren

Urban development in Southern California occurs in phases. When land is cleared prior to being paved, this category represents the occurrence of non-vegetated barren ground that is caused by urbanization. This land-use type also represents other mechanically caused barren ground, such as open quarries or mined areas, barren ground along highways, and other areas cleared of vegetation prior to construction. This category has been mapped extensively throughout this region, usually adjacent to agricultural areas, already established urbanized centers or paved areas of the landscape. The slope areas and some of the flat areas of the Cannon Pump Station site has recently been cleared and contain only bare soil. Approximately 2.27 acres of this classification occupies the Cannon Pump Station site.

ID-4 CRA Crossing Refurbishment

The ID-4 CRA Crossing Refurbishment project would include refurbishment of pipes at the WMWD pump facility upstream from Lake Matthews in Riverside County. Proposed activities include the refurbishment of the existing pipeline that crosses the existing drainage where Colorado River water moves into Lake Matthews. The drainage has steep slopes and is located adjacent to the existing pump facilities at the project site.

Black Willow Thicket Alliance

The Black Willow Thicket Alliance is defined by the dominance of any single or combination of tree species of willow (*Salix spp*.), such as Goodding black (*Salix gooddingii*), red (*Salix laevigata*), or arroyo (*Salix lasiolepis*). It has been mapped along streambanks below 1600 ft. (488 m) in the Coast Section and mainly below about 8200 ft. (2501 m) in the Mountains Section. Areas within the CRA Crossing site contain small willow patches dominated by Goodding black willow. Understory scrub species include mulefat (*Baccharis salicifolia*), as well as non-native tobacco tree (*Nicotiana glauca*) and salt cedar (*Tamarix ramosissima*). The willow patches are located on the slopes of the drainage. This alliance comprises approximately 0.01 acre of the ID-4 CRA Crossing Refurbishment site. This community is considered by CDFW to be a sensitive natural community.

Blue Elderberry Stands Alliance

Shrub forms of blue elderberry (*Sambucus nigra*) have been mapped in most subsections of the Coast and Mountain Sections from western Santa Barbara to southern San Diego Counties at elevations generally below about 7000 feet (2135 meters). Elderberry stands are usually associated with the drier edges of riparian areas or within ephemeral drainages. Elderberry stands at the CRA Crossing are on the southern bank of the drainage. The elderberry contain understory of mulefat, and California sagebrush (*Artemisia californica*). The blue elderberry stands alliance comprises approximately 0.02 acre of the site. This community is considered by CDFW to be a sensitive natural community.

California Sagebrush Alliance

This alliance occurs in several habitats, including coastal environments such as the dunes south of Point Conception and coastal slopes of the Coastal Section. It also is found in more interior low-elevation locations below the Lower Montane Mixed Conifer Alliance and in local pockets of disturbed or dry sites, typically at elevations below about 3,000 feet (915 meters). The alliance usually has a prominent California sagebrush (*Artemisia californica*) component along with a varying mixture of other shrubs, subshrubs, and perennials. These associates include black or purple sage (*Salvia mellifera*, *Salvia leucophylla*), laurel sumac (*Malosma laurina*), lemonade berry (*Rhus integrifolia*), California buckwheat (*Eriogonum fasciculatum*), coyote brush (*Baccharis pilularis*), California encelia (*Encelia californica*), minor amounts of chamise (*Adenostoma fasciculatum*), deerweed (*Acmispon glaber*), and grasses. These species produce a vegetative cover, which rapidly invades disturbed areas. This type intergrades with the Lower Montane Chaparral, California Buckwheat (*Eriogonum fasciculatum*), and Sumac (*Rhus spp*.) shrub alliances. Atripex scrub areas observed at the CRA Crossing site were dominated by California sagebrush, with some scattered four-winged saltbush and non-native grasses. The California sagebrush alliance comprises approximately 0.13 acre of the site.

Barren/Developed

This category represents non-vegetated barren ground that is caused by urbanization when land is cleared prior to be being paved, as well as developed areas. This land-use type also represents other mechanically caused barren ground, such as open quarries or mined areas, barren ground along highways, and other areas cleared of vegetation prior to construction. Developed areas apply to landscapes that are dominated by urban structures, residential units, or other developed land uses such as roadways, city parks, and paved surfaces. Developed areas include the existing water district pump infrastructure. Barren/developed areas comprise approximately 0.19 acre of the site.

Open Water

Open water habitat includes permanent sources of surface water such as lakes, streams, canals, bays, and other water bodies. These areas typically support minimal vegetation, except along the margins of the water body, where wetland or emergent vegetation may occur. The area mapped as open water on the ID-4 CRA Crossing Refurbishment site is a segment of the California Aqueduct, which conveys Colorado River water to Lake Matthews. The channel was flowing and

approximately 6–8 feet deep at the time of the survey. Open water habitat comprises approximately 0.09 acre of the site.

Santa Ana River Arundo Removal

The vegetation communities depicted in **Figure 4.4-1e** were mapped by the U.S. Army Corps of Engineers (USACE) in 2015 and the acreages are summarized in **Table 4.4-1**. Since the focus of the Santa Ana River Arundo Removal project is on the removal of giant reed (*Arundo donax*) areas, and the riparian mixed hardwood alliance comprises the majority of the arundo removal site, the general descriptions for these alliances are provided below.

TABLE 4.4-1
VEGETATION COMMUNITIES AND LAND USES WITHIN THE ARUNDO REMOVAL LOCATIONS

Vegetation Communities and Land Uses	Grand Total (Acres)
Bare/Dry/Stressed/Burned	32.83
Native – Cocklebur	0.67
Native – Mulefat	0.62
Native – Nightshade	0.06
Native – Wild Grape	14.15
Native – Woody Riparian Mix	1746.29
Non-native – Eucalyptus	6.14
Non-native – Giant Reed (Healthy/Regrowth)	187.78
Non-native – Palms	5.60
Non-native – White Clover	0.71
Undetermined[1]	1291.73
Wetland/Shadow/Dark Burned Vegetation	125.80
Grand Total (Acres)	**3412.38**

[1] USACE 2015 lidar data included areas that were mapped as "undetermined."
Source: USACE 2015.

Woody Riparian Mix (Riparian Mixed Hardwood Alliance)

Most perennially flowing streamside sites in Southern California are not occupied by a single dominant hardwood species, but rather a mixture of deciduous trees and shrubs whose composition changes along the stream length. The Riparian Mixed Hardwood Alliance includes any combination of native obligate or facultative riparian hardwoods. Within the arundo removal areas, this vegetation community is dominated by Gooding's black willow (*Salix gooddingii*), red willow (Salix laevigata), arroyo willow (*Salix lasiolepis*), and Fremont cottonwood *(Populus fremontii)*. There are also patches of emergent vegetation along the banks and sandbars including cattails (*Typha sp*.), tall flatsedge (*Cyperus eragrostis*), marsh purslane (*Ludwigia peploides*) and fringed willow herb (*Epilobium ciliatum*). Large patches of giant reed were also observed within the sandbars and edges of willow areas. Other trees species observed along the upland edges of the riparian areas include tree-of-heaven (*Ailanthus altissima*), Mexican fan palm (*Washingtonia robusta*), and blue elderberry (*Sambucus nigra*).

This community is also known as Southern Cottonwood Willow Riparian Forest, which is considered by CDFW to be a sensitive natural community.

Giant Reed Alliance

This non-native and herbaceous alliance is dominated by stands of giant reed. Associated species include tree and shrub willows (*Salix* spp.), mulefat (*Baccharis salicifolia*) shrubs, and other riparian hardwoods such as Fremont cottonwood.

Common Wildlife

Based on a biological reconnaissance survey performed by ESA biologist Dale Hameister on June 19, 2018, the areas that encompass the five specific projects provide habitat for a variety of common wildlife species.

Chino Basin Production Wells, Refurbishment and Treatment System

The Chino Basin Production well site contains very little wildlife habitat since the majority of the survey area contains a disturbed area of gravel. Wildlife observed during the survey includes Anna's hummingbird and American crow.

Arlington Recharge Project

The Arlington Recharge site is within a highly developed urban area. Wildlife expected to occur include typical urban species including house finch (*Haemorhous mexicanus),* mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), black phoebe (*Sayornis nigricans*), house sparrow (*Passer domesticus*), song sparrow (*Melospiza melodia*), European starling (*Sturnus vulgaris*), American crow (*Corvus brachyrhynchos*), red-shouldered hawk (*Buteo lineatus*), and barn owl (*Tyto alba*). Common reptiles expected to occur in the vicinity include San Diego alligator lizard (*Elgaria multicarinata webbii*) and western fence lizard (*Sceloporus occidentalis*).

Cannon Pump Station

The Cannon Pump Station project site contains a mix of ornamental trees, willow patches, and brittlebush scrub. Wildlife observed include red-tailed hawk (*Buteo jamaicensis*), song sparrow, house finch, Nuttal's woodpecker (*Picoides nuttallii*), and Bewick's wren. Mammals or mammal sign observed include coyote and desert cottontail. Woodrat (*Neotoma* sp.) nests were observed within the willow patches, but the species was not determined. Reptiles observed include side-blotched lizard (*Uta stansburiana elegans*) and Great Basin fence lizard (*Sceloporus occidentalis longipes*).

ID-4 CRA Crossing Refurbishment

The ID-4 CRA Crossing Refurbishment site is located adjacent to a steep engineered channel with flowing water and small patches of willows, elderberry, and scrub on the banks of the channel. Species observed include northern mockingbird, house finch, and American crow.

Santa Ana River Arundo Removal

The woody riparian habitat found in the Santa Ana River Arundo Removal site provides habitat for a large number of common and sensitive wildlife species. Species observed during surveys include black-crowned night heron (*Nycticorax nycticorax*), yellow-breasted chat (*Icteria virens*), yellow warbler (*Setophaga petechia*), blue grosbeak (*Passerina caerulea*), black-headed grosbeak (*Pheucticus melanocephalus*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), great blue heron (*Ardea herodias*), mallard (*Anas platyrhynchos*), American coot (*Fulica americana*), Bewick's wren (*Thryomanes bewickii*), house wren (*Troglodytes aedon*), house finch, song sparrow, red-tailed hawk, and Cooper's hawk (*Accipiter cooperii*). The area is known to provide habitat for sensitive wildlife species, which is further discussed under Special Status Species.

Sensitive Natural Communities

According to the CNDDB, four sensitive natural communities occur within the Project area, including California Walnut Woodland, Southern Coast Live Oak Riparian Forest, Southern Cottonwood Willow Riparian Forest, and Southern Sycamore Alder Riparian Woodland. Based on the field survey and available information, three sensitive natural communities (woody riparian mix, black willow thicket and blue elderberry stands) occur within the Project area and are located at the specific sites as discussed below.

Chino Basin Production Wells, Refurbishment and Treatment System

No sensitive natural communities occur at this specific project site.

Arlington Production Wells and Pipeline

No sensitive natural communities occur at this specific project site.

Cannon Pump Station

Two sensitive natural communities occur at this specific project site, and they include 0.63 acre of black willow thicket and 0.65 acre of brittlebush scrub.

ID-4 CRA Crossing Refurbishment

Two sensitive natural communities occur at this specific project site, and they include 0.01 acre of black willow thicket and 0.02 acre of blue elderberry stands.

Santa Ana River Arundo Removal

One sensitive natural community occurs within this specific project site, and it includes 1,746.29 acres of woody riparian mix.

Special-Status Species

Special-status species are those plants and animals that, because of their rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as "sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special-status species" in this report, following a convention that has developed in practice but has no official sanction. More specifically, special-status species include:

- Plants or animals listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA) (50 Code of Federal Regulations [CFR] 17.12 [listed plants], 17.11 [listed animals] and various notices in the Federal Register [FR] [proposed species]).
- Plants or animals that are candidates for possible future listing as threatened or endangered under the federal ESA (61 CFR 40, February 28, 1996);
- Plants or animals listed or proposed for listing by the State of California as threatened or endangered under the California ESA (14 California Code of Regulations [CCR] 670.5);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
- Plants that meet the definitions of rare and endangered under CEQA (*CEQA Guidelines*, Section 15380);
- Plants considered under the CNPS to be "rare, threatened or endangered in California" (Lists 1A, 1B, and 2 in CNPS 2008);
- Plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in CNPS 2008), which may be included as special-status species on the basis of local significance or recent biological information; and
- Animals fully protected in California (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).
- Plants or animals covered by a locally or state adopted species conservation plan, including sensitive plants and animals and narrow endemic plants that have reasonable potential to occur on site.

Special-status species considered for this analysis were based on queries of CNDDB, USFWS, and CNPS literature/database review. Special-status plant and wildlife species known to occur or have the potential to occur in the proposed Project region are shown in **Table 4.4-2** and **Table 4.4-3**. These species, known habitat requirements, and regulatory status (federal, state, local) are listed in **Appendix C**. The following criteria were used to determine the potential for occurrence within the proposed Project for each special-status species evaluated:

- Present: Species is known to occur on the proposed Project (based on field observations, CNDDB, USFWS, CNPS, or other records search of the proposed Project) in recent years (i.e., last 10 years).
- High: Species is known to occur within two miles of the proposed Project (based on CNDDB, USFWS, CNPS, or other records search of the proposed Project) in the last 30 years, and there is highly suitable habitat within the proposed Project or immediate vicinity. Suitable habitat includes all necessary habitat elements to support the species (habitat type, soils, cover, food resources, etc.).
- Moderate: Species is known to occur within two miles of the proposed Project; however, the species has few or no known recorded occurrences/populations in the last 30 years. Suitable habitat is present, which includes all necessary habitat elements to support the species (habitat type, soils, cover, food resources, etc.).
- Low: Species is known to occur within three to five miles of the proposed Project vicinity, or there is some suitable habitat within the proposed Project. Suitable habitat for the species could be fragmented, disturbed, or small/limited in size. There are few or no known recent recorded occurrences/populations nearby in the last 30 years.
- Unlikely: Species is not known to occur within two miles of the proposed Project, there are either few or no known recorded occurrences/populations nearby, and there is no suitable habitat within the proposed Project area.

Based on the above standards, 40 special-status plant species were assessed as having a moderate or higher potential to occur in the five specific project areas as described in Table 4.4-2.

Based on the above standards, 42 special-status animal species were assessed as having a moderate or higher potential to occur in the five specific project areas as described in Table 4.4-3.

TABLE 4.4-2
POTENTIALLY OCCURRING SENSITIVE PLANT SPECIES

Common Name	Scientific Name	Status1 (Federal/State/ CRPR/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington Project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Chaparral sand - verbena	*Abronia villosa var. aurita*	--/--/1B.1/--	Annual herb found in chaparral, coastal scrub and desert dunes in sandy areas between 75–1600 m.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Parish's oxytheca	*Acanthoscyphus parishii var. parishii*	--/--/4.2/--	Annual herb found in chaparral or lower montane coniferous forest in sandy or gravelly soils. Occurs from 1220–2600 m and blooms from June–September.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Munz's onion	*Allium munzii*	FE/SE/1B.1/NE	Perennial bulbiferous herb found in chaparral, coastal scrub, cismontane woodland, pinyon-juniper woodland, valley and foothill grassland on heavy clay soils. It grows in grasslands and openings within shrublands or woodlands between 295–1070 m.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Watson's amaranth	*Amaranthus watsonii*	--/--/4.3/--	Annual herb found in Mojavean desert scrub and Sonoran desert scrub. Occurs from 20–1700 m and blooms April–September.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**

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Singlewhorl burrobrush	*Ambrosia monogyra*	--/--/2B.2/--	Perennial shrub found in chaparral and Sonoran desert scrub in sandy soils. Occurs from 10–500 m and blooming period is August–November.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
San Diego ambrosia	*Ambrosia pumila*	FE/--/1B.1/NE	Perennial rhizomatous herb found in chaparral, coastal scrub, valley and foothill grassland in alkali sandy loam or clay soils. Persist where disturbance has been superficial, sometimes near margins. Occurs from 20–415 m and blooms from April–October.	**1- Moderate** **2-Low** **3- Low** **4- Low** **5- Low**
California androsace	*Androsace elongata ssp. acuta*	--/--/4.2/--	Annual herb found in chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland. Occurs from 150–1305 m and blooming period is March–June.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
San Gabriel manzanita	*Arctostaphylos glandulosa ssp. gabrielensis*	--/--/1B.2/--	Perennial evergreen shrub found in chaparral. Occurs from 595–1500 m and blooming period is March.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**

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Rainbow manzanita	*Arctostaphylos rainbowensis*	--/--/1B.1/Covered (MSHCP)	Perennial evergreen shrub found with chaparral, usually found in gabbro chaparral in Riverside and San Diego counties at elevations of 270–790 m. Blooms from December - March.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Marsh sandwort	*Arenaria paludicola*	FE/SE/1B.1/--	Perennial stoloniferous herb found in marshes and swamps in sandy, openings. Occurs in 3–170 m and blooming period is May–August.	**1- Moderate** **2-Low** **3- Low** **4- Low** **5- Low**
San Diego sagewort	*Artemisia palmeri*	--/--/4.2/--	Perennial deciduous herb found in chaparral, coastal scrub, riparian forest, riparian scrub, and riparian woodland; sandy, mesic soils at 15–915 m elevation. Blooming period is February–September.	**1- Moderate** **2-Low** **3- Low** **4- Low** **5- Low**
Mojave milkweed	*Asclepias nyctaginifolia*	--/--/2B.1/--	Perennial herb found in Mojavean desert shrub and Pinyon and juniper woodland. Occurs in 875–1700 m and blooming period is May–June	**1- Unlikely** **2- Unlikely** **3- Unlikely** **4- Unlikely** **5- Unlikely**

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Western spleenwort	*Asplenium vespertinum*	--/--/4.2/--	Perennial rhizomatous herb found in chaparral cismontane woodland, and coastal shrub in rocky soil. Occurs in 180– 1000 m and blooming period is February–June.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Crested milk-vetch	*Astragalus bicristatus*	--/--/4.3/--	Perennial herb found in lower montane coniferous forest or upper montane coniferous forest in sandy or rocky, mostly carbonate soils. Occurs from 1700–2745 m and blooming period is May–August.	**1- Unlikely** **2- Unlikely** **3- Unlikely** **4- Unlikely** **5- Unlikely**
Braunton's milk-vetch	*Astragalus brauntonii*	FE/--/1B.1/--	Perennial herb found in recently burned or disturbed areas usually within sandstone with carbonate layers. Habitats include chaparral, coastal scrub, and valley and foothill grassland. Blooming period is August–January; occurs at 4–640 m elevation.	**1- Low** **2- Low** **3- Low** **4- Low** **5- Low**
Horn's milk-vetch	*Astragalus hornii var. hornii*	--/--/1B.1/--	Annual herb found in meadows, seeps, and playas, in lake margins, and alkaline soils. Occurs from 60–850 m and blooming period is May–October.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**

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Jaeger's bush milkvetch	*Astragalus pachypus var. jaegeri*	--/S2/1B.1/Covered (MSHCP)	Perennial shrub that occurs in coastal scrub, chaparral, valley and foothill grassland, and cismontane woodland. Specifically found on dry ridges and valleys, and open sandy slopes; often in grasslands and oak chaparral between 365–915 m.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
San Jacinto Valley crownscale	*Atriplex coronata var. notatior*	FE/--/1B.1/Covered (MSHCP)	Annual herb. Can be found on playas, valley and foothill grassland, and vernal pools. Specifically occurs in alkaline areas in the San Jacinto River Valley between 140–500 m in elevation.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Moderate**
Coulter's saltbush	*Atriplex coulteri*	--/--/1B.2/--	Found on alkaline or clay substrate within coastal bluff scrub, coastal dune, coastal scrub and valley and foothill grassland habitats. Blooming period is March–October. Occurs at elevations from 3–460 m.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Parish's brittlescale	*Atriplex parishii*	--/--/1B.1/Covered (MSHCP)	Found in alkali meadows, vernal pools, playas, and chenopod scrub. Associated with alkaline soils. Blooming period is June–October. Occurs at 25–1900 m in elevation.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**

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Davidson's saltscale	*Atriplex serenana var. davidsonii*	--/--/1B.2/Covered (MSHCP)	Found on alkaline substrate within coastal bluff scrub and coastal scrub habitats. Blooming period is from April–October and occurs at elevations from 10 - 200 m.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
California ayenia	*Ayenia compacta*	--/--/2B.3 /--	Perennial herb found in Mohavean desert scrub, Sonoran desert scrub in rocky soils. Occurs from 150–1095 m and blooming period is March–April.	**1- Unlikely** **2- Unlikely** **3- Unlikely** **4- Unlikely** **5- Unlikely**
Nevin's barberry	*Berberis nevinii*	FE/SE/1B.1/Covered (MSHCP)	Chaparral, cismontane woodland, coastal scrub, riparian scrub. Often on steep north facing slopes or in the banks of sandy washes.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Thread-leaved brodiaea	*Brodiaea filifolia*	FT/SE/1B.1/Covered (MSHCP)	Perennial bulbiferous herb found in cismontane woodland, coastal scrub, playas, valley and foothill grassland, and vernal pools. Usually associated with annual grassland and vernal pools often surrounded by shrubland habitats. Clay soils and at elevations of 25–860 m. Blooming period is from March–June.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**

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Orcutt's brodiaea	*Brodiaea orcuttii*	--/--/1B.1/Covered (MSHCP)	Perennial bulbiferous herb found in vernal pools, valley and foothill grassland, closed-cone coniferous forest, cismontane woodland, chaparral, and meadows. Mesic, clay habitats, sometimes serpentine; usually in vernal pools and small drainages at elevations of 30–1615 m. Blooms from May–July.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Santa Rosa Basalt brodiaea	*Brodiaea santarosae*	--/--/1B.2/--	Perennial bulbiferous herb found on basaltic soils in valley and foothill grassland from 580–1045 m. Blooms from May–June.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Round-leaved filaree	*California macrophylla*	--/--/1B.2/Covered (MSHCP)	Perennial bulbiferous herb found in clay soils and associated with cismontane woodlands and valley-foothill grasslands	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Catalina mariposa lily	*Calochortus catalinae*	--/--/4.2/--	Occurs in heavy soils in chaparral, cismontane woodland, coastal scrub and valley and foothill grassland below 700 m. When occurring on slopes, it is usually associated with coastal scrub vegetation.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Moderate**

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Slender mariposa-lily	*Calochortus clavatus var. gracilis*	--/--/1B.2/--	Perennial bulbiferous herb found in chaparral, coastal shrub, valley and foothill grasslands. Occurs from 320–1000 m and blooming period is March–November.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Plummer's mariposa-lily	*Calochortus plummerae*	--/--/4.2/Covered (MSHCP)	Found in coastal scrub, chaparral, valley and foothill grasslands, cismontane woodlands and lower montane coniferous forests; occurs on rocky or sandy soils, usually of alluvial or granitic material; common after fire. Blooming period is May–July; occurs at elevations of 100–1700 m.	**1- Moderate** **2- Low** **3- Low** **4- Moderate** **5- Low**
Intermediate mariposa lily	*Calochortus weedii var. intermedius*	--/--/1B.2/Covered (MSHCP)	Perennial bulbiferous herb found in coastal scrub, chaparral, valley and foothill grassland on dry, rocky open slopes and rock outcrops at elevations of 120–850 m.	**1- Low** **2-Low** **3- Low** **4- Moderate** **5- Moderate**
Lucky morning-glory	*Calystegia felix*	--/--/3.1/--	Annual rhizomatous herb found in meadows and seeps (sometimes alkaline), riparian scrub (alluvial), historically associated with wetland and marshy places, but possibly in drier situations as well. Possibly silty loam and alkaline. Occurs from 30–215 m and blooming period is March–September.	**1- Moderate** **2-Low** **3- Low** **4- Low** **5- Low**

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Lewis' evening-primrose	*Camissoniopsis lewisii*	--/--/3/--	Annual herb found in sandy or clay soils in cismontane woodlands, valley and foothill grasslands, coastal dunes, and coastal scrub at elevations of 0–300 m.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
Buxbaum's sedge	*Carex buxbaumii*	--/--/4.2/--	Perennial rhizomatous herb found in bogs and fens, meadows and seeps (mesic), and marshes and swamps. Occurs from 3–3300 m and blooming period is March–August.	**1- Moderate** **2-Low** **3- Low** **4- Low** **5- Low**
Bristly sedge	*Carex comosa*	--/--/2B.1/--	Perennial rhizomatous herb found in coastal prairie, marshes and swamps (lake margins), and valley and foothill grasslands. Occurs from 0–625 m and blooming period is May–September.	**1- Moderate** **2 - Low** **3- Low** **4- Low** **5- Low**
Payson's jewel-flower	*Caulanthus simulans*	--/--/4.2/Covered (MSHCP)	An annual herb that occurs in chaparral and coastal scrub, specifically in frequently burned areas, or in disturbed sites such as streambeds; also on rocky, steep slopes on sandy and granitic soils between 90–2,200 m in elevation.	**1- Moderate** **2-Low** **3- Low** **4- Low** **5- Low**

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Southern tarplant	*Centromadia parryi ssp. australis*	--/--/1B.1/--	Valley and foothill grassland, chenopod scrub, meadows, playas, riparian woodland. Alkali meadow, alkali scrub; also in disturbed places. 0–640 m.	**1- High** **2-Low** **3- Low** **4- Moderate** **5- Low**
Smooth tarplant	*Centromadia pungens ssp. laevis*	--/--/1B.1/Covered (MSHCP)	Annual herb associated with valley and foothill grasslands, chenopod scrub, meadows, playas and riparian woodlands from 0–640 m. Blooming period is from April–September.	**1- High** **2-Low** **3- Low** **4- Moderate** **5- Low**
Peninsular spineflower	*Chorizanthe leptotheca*	--/--/4.2/Covered (MSHCP)	Annual herb occurring within chaparral, coastal scrub, and lower montane coniferous forest in alluvial fans or granitic soil. Found in 300–1900 m elevations.	**1- Moderate** **2- Low3- Low** **4- Low** **5- Low**
Salt marsh bird's-beak	*Chloropyron maritimum ssp. maritimum*	FE/SE/1B.2/--	Found within coastal dune, salt marsh, and swamp habitats, at elevations up to1400 m. Blooming period is May–October.	**1- Moderate**
Parry's spineflower	*Chorizanthe parryi var. parryi*	--/--/1B.1/Covered (MSHCP)	Annual herb found in coastal scrub and chaparral, sometimes on the interface of two vegetation types. Associated with dry, sandy soils, dry slopes and flats from 275–1220 m. Blooming period is April–June.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**

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Long-spined spineflower	*Chorizanthe polygonoides var. longispina*	--/--/1B.2/Covered (MSHCP)	Annual herb that occurs in chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools with gabbroic clay. 30–1530 m.	**1- Low** **2-Low** **3- Low** **4- Low** **5- Low**
White-bracted spineflower	*Chorizanthe xanti var. leucotheca*	--/--/1B.2/--	Annual herb found in coastal scrub (alluvial fans), Mojavean desert scrub, and pinyon and juniper woodlands at 300–1200 m elevation. Blooming period is April–June.	**1- High** **2-Low** **3- Low** **4- Low** **5- Low**
Cladium californicum	*Cladium californicum*	--/--/2B.2/--	Perennial rhizomatous herb found in meadows and seeps, and marshes and swamps (alkaline or freshwater). Occurs in 60 - 1600 m and blooming period is June–September.	**1- Moderate** **2-Low** **3- Low** **4- Low** **5- Low**
Peirson's spring beauty	*Claytonia lanceolata var. peirsonii*	--/--/3.1/--	Perennial herb found in subalpine coniferous forest, and upper montane coniferous forest. Occurs in 1510–2745 m and blooming period is March–June.	**1- Unlikely** **2- Unlikely** **3- Unlikely** **4- Unlikely** **5- Unlikely**

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San Miguel savory	*Clinopodium chandleri*	--/--/1B.2/NE	Perennial shrub found in chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. Specifically on rocky, gabbroic or metavolcanic substrate between 120–1,075 m.	**1- Moderate** **2-Low** **3- Low** **4- Low** **5- Low**
Small-flowered morning-glory	*Convolvulus simulans*	--/--/4.2/Covered (MSHCP)	Annual herb found in clay, serpentine seeps in chaparral, coastal scrub and valley and foothill grassland. Occurs from 30–700 m in elevation and blooms from March–July.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Peruvian dodder	*Cuscuta obtusiflora var. glandulosa*	--/--/2B.2/--	Annual vine found in freshwater marshes and swamps. Occurs from 15–280 m in elevation and blooms from July–October.	**1- Moderate2- Low** **3- Low** **4- Low** **5-Low**
Mojave tarplant	*Deinandra mohavensis*	--/SE/1B.3/Covered (MSHCP)	An annual herb that is found in riparian scrub, coastal scrub and chaparral habitats, specifically in low sand bars in river beds and mostly in riparian areas or in ephemeral grassy areas between 640–1600 m in elevation.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Paniculate tarplant	*Deinandra paniculata*	--/--/4.2/--	Annual herb found in coastal scrub, valley and foothill grassland, and vernal pools from 25–940 m. Blooms from April–November.	**1- Low** **2- Low** **3- Low** **4- Moderate** **5-Moderate**

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Cleveland's bush monkeyflower	*Diplacus clevelandii*	--/--/4.2/--	Perennial rhizomatous herb found in chaparral, cismontane woodland, and lower montane coniferous forest in gabbroic, often disturbed areas, openings, and rocky soil. Occurs from 450–2000 m and blooming period is April–July.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Slender-horned spineflower	*Dodecahema leptoceras*	FE/SE/1B.1/NE, Covered (SARHCP)	Annual herb occurring in sandy soils of alluvial origin in chaparral, cismontane woodland, alluvial fan coastal scrub maintained by infrequent flooding. Occurs at elevations of 200–760 m. Blooming period is April–May.	**1- High** **2- High** **3- Low** **4- Low** **5- Low**
Many-stemmed dudleya	*Dudleya multicaulis*	--/--/1B.2/NE	Found in chaparral, coastal scrub and valley and foothill grasslands. Microhabitat includes clayey soils and grassy slopes. Occurs at 15–790 m elevations.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Santa Ana River woollystar	*Eriastrum densifolium* ssp. *sanctorum*	FE/SE/1B.1/Cover ed (MSHCP), (SARHCP)	Perennial herb found in chaparral or coastal scrub habitats (alluvial fans); sandy or gravelly soil. Blooming period is April–September; occurs at elevations from 90–610 m.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**

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Northern limestone buckwheat	*Eriogonum microthecum var. alpinum*	--/--/4.3/--	Perennial herb found in alpine dwarf scrub or Great Bain scrub, sometimes in rocky or gravelly soil. Occurs from 2500–3300 m and blooming period is July–September.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
San Diego button-celery	*Eryngium aristulatum var. parishii*	FE/SE/1B.1/Covered (MSHCP)	Perennial herb found in vernal pools, coastal scrub, valley and foothill grassland. San Diego mesa hardpan and claypan vernal pools and southern interior basalt flow vernal pools, usually surrounded by scrub at elevations of 15-620 m. Blooms from April–June.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
Campbell's liverwort	*Geothallus tuberosus*	--/--/1B.1/--	Found in coastal scrub and vernal pools. Known from mesic soil at elevations of 10-600 m.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Palmer's grapplinghook	*Harpagonella palmeri*	--/--/4.2/Covered (MSHCP)	Annual herb found in chaparral, coastal scrub, and valley and foothill grassland from 20–955 m. Blooms from March–May.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

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Los Angeles sunflower	*Helianthus nuttallii ssp. parishii*	--/--/1A/--	Perennial rhizomatous herb occurs in coastal salt and freshwater marshes and swamps. Blooming period is August–October and occurs at 10–1675 m elevation.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
Tecate cypress	*Hesperocyparis forbesii*	--/--/1B.1/--	Perennial evergreen found within closed-cone coniferous forest, chaparral. Primarily on north-facing slopes; groves often associated with chaparral on clay or gabbroic or metavolcanic soil at 80–1500 m.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Graceful tarplant	*Holocarpha virgata ssp. elongata*	--/--/4.2/Covered (MSHCP)	Annual herb found in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland from 60–1100 m. Blooms from May–November.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Vernal barley	*Hordeum intercedens*	--/--/3.2/Covered (MSHCP)	Annual herb found in coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions) and vernal pools. Occurs from 5–1000 m and blooms from March–June.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

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Mesa horkelia	*Horkelia cuneata var. puberula*	--/--/1B.1/--	Perennial herb found in chaparral, cismontane woodland and coastal scrub habitats; found in gravelly or sandy sites from 70–810 m. Blooms from February–September.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
California satintail	*Imperata brevifolia*	--/--/2B.1/--	Perennial rhizomatous herb found in chaparral, coastal scrub, meadows and seeps, Mojavean desert scrub, riparian scrub at 0–1215 m elevation. Blooming period is September–May.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low 2- Low** **5- Low**
Southern black California walnut	*Juglans californica*	--/--/4.2/--	Perennial deciduous tree found in chaparral, cismontane woodland, and coastal scrub (alluvial) at elevations of 50–900 m. Blooming period is March–August.	**1- High** **2- Low** **3- Low** **4- Low** **5-Low**
Santa Lucia dwarf rush	*Juncus luciensis*	--/--/1B.2/--	Annual herb found in chaparral, Great Basin scrub, lower montane coniferous forest, meadows and seeps, and vernal pools from 300–2,040 m. Blooms from April–July.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/ CRPR/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington Project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Coulter's goldfields	*Lasthenia glabrata ssp. coulteri*	--/--/1B.1/Covered (MSHCP)	Annual herb found in wetland habitats. Microhabitats include coastal salt marshes, playas and vernal pools at elevations up to 1220 m. Blooming period is February–June.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
Heart-leaved pitcher sage	*Lepechinia cardiophylla*	--/--/1B.2/Covered (MSHCP)	Perennial shrub occurring within closed-cone coniferous forests, chaparral, and cismontane woodland at 520–1370 m elevation.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Fragrant pitcher sage	*Lepechinia fragrans*	--/--/4.2/--	Perennial shrub found in chaparral. Occurs from 20 - 310 m and blooming period is March–October.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Robinson's pepper-grass	*Lepidium virginicum var. robinsonii*	--/--/4.3/--	Annual herb found within chaparral and coastal scrub habitats at elevations up to 885 m. Blooming period is January–July.	**1- Moderate** **2- Low** **3- Low** **4- Moderate** **5- Moderate**

Common Name	Scientific Name	Status1 (Federal/State/ CRPR/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington Project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Ocellated Humboldt lily	*Lilium humboldtii ssp. ocellatum*	--/--/4.3/Covered (MSHCP)	Occurs in openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland 30–1800 m in elevation.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
Parish's meadowfoam	*Limnanthes alba ssp. parishii*	--/SE/1B.2/Covered (MSHCP)	Found in meadows, seeps, and vernal pools. Prefers vernally moist areas and temporary seeps of highland meadows and plateaus; often bordering lakes and streams. 600–1760 m.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
San Gabriel linanthus	*Linanthus concinnus*	--/--/1B.2/--	Annual herb found in chaparral, lower montane coniferous forest, and upper montane coniferous forest in rocky soil and openings. Occurs from 1520–2800 m and blooming period is April–July.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Parish's bush-mallow	*Malacothamnus parishii*	--/--/1A/--	Perennial deciduous shrub found in chaparral and coastal scrub habitats. Occurs in elevations of 205–455 m and blooms June–July.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/ CRPR/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington Project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Small-flowered microseris	*Microseris douglasii ssp. platycarpha*	--/--/4.2/Covered (MSHCP)	Annual herb in clay soils found within cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pools at 15–1070 m.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	--/--/1B.2/--	Found in chaparral and cismontane woodlands. Occurs in understory in mixed chaparral, chamise chaparral, and southern oak woodland; sandy soil at elevations of 300–1575 m.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Hall's monardella	*Monardella macrantha ssp. hallii*	--/--/1B.3/Covered (MSHCP)	Found in broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, valley & foothill grassland. On dry slopes and ridges in openings within the above communities. 730–2195 m.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Pringle's monardella	*Monardella pringlei*	--/--/1A/--	Annual herb found in coastal scrub in sandy soils. Occurs from 300–400 m and blooming period is May–June.	**1- Low** **2- Low** **3- Low** **4- Moderate** **5-Moderate**

Common Name	Scientific Name	Status1 (Federal/State/ CRPR/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington Project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Little mousetail	*Myosurus minimus ssp.apus*	--/--/3.1/Covered (MSHCP)	Annual herb found in vernal pools, valley and foothill grasslands on alkaline soils between 20–640 m.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Gambel's water cress	*Nasturtium gambelii*	FE/ST/1B.1/--	Perennial rhizomatous herb found in marshes and swamps (freshwater or brackish). Blooming period is April–October; found at elevations of 5–330 m.	**1-Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
Spreading navarretia	*Navarretia fossalis*	FT/--/1B.1/NE	Annual herb found in vernal pools, chenopod scrub, marshes and swamps, and playas. Associated with San Diego hardpan & San Diego claypan vernal pools, in swales and often surrounded by other habitat types between 30–655 m.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Prostrate vernal pool navarretia	*Navarretia prostrata*	--/--/1B.1/Covered (MSHCP)	Annual herb associated with coastal scrub, valley and foothill grassland, vernal pools from 15–1210 m. Blooms from April–July.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/ CRPR/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington Project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Chaparral nolina	*Nolina cismontana*	--/--/1B.2/--	Found in chaparral and coastal scrub primarily on sandstone and shale substrates, also known from gabbro, at elevations of 140–1275 m.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Short-joint beavertail	*Opuntia basilaris var. brachyclada*	--/--/1B.2/--	Perennial stem succulent found in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland. Occurs at 425–1800 m; blooming period is April–August.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
California Orcutt grass	*Orcuttia californica*	FE/SE/1B.1/NE	Annual herb associated with vernal pools at elevations of 15–660 m. Blooming period is April–August.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
California beardtongue	*Penstemon californicus*	--/--/1B.2/Covered (MSHCP)	Perennial herb found in chaparral, lower montane coniferous forest, and pinyon and juniper woodlands; sandy soil. Blooming period is May–August; occurs at 1170–2300 m elevation.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/ CRPR/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington Project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Allen's pentachaeta	*Pentachaeta aurea ssp. allenii*	--/--/1B.1/--	Annual herb found in coastal scrub openings and valley and foothill grasslands. Blooming period is March–June; occurs at 75–520 m elevation.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Moderate**
Hubby's phacelia	*Phacelia hubbyi*	--/--/4.2/--	Annual herb found in chaparral, coastal scrub, and valley and foothill grasslands in gravelly, rock, talus soils. Occur from 0–1000 m and blooming period is April–July.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Brand's star phacelia	*Phacelia stellaris*	--/--/1B.1/NE	Annual herb found in coastal dunes and coastal scrub. Occurs in 1–400 m and blooming period is March–June.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Fish's milkwort	*Polygala cornuta var. fishiae*	--/--/4.3/Covered (MSHCP)	Perennial deciduous shrub found in chaparral, cismontane woodland, and riparian woodland. Occurs from 100–1,000 m and blooms from May–August.	**1- High** **2- Low** **3- Low** **4- Moderate** **5-Moderate**

Common Name	Scientific Name	Status1 (Federal/State/ CRPR/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington Project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
White rabbit-tobacco	*Pseudognaphalium leucocephalum*	--/--/2B.2/--	Found within riparian woodland, coastal scrub and chaparral habitats. Blooming period is August–November and occurs at elevations up to 1400 m.	**1- High**
				2- Low
				3- Low
				4- Moderate
				5-Moderate
San Gabriel oak	*Quercus durata var. gabrielensis San Gabriel*	--/--/4.2/--	Perennial evergreen shrub found in chaparral and Cismontane woodland. Occurs from 450–1000 m and blooming period is April–May.	**1- Low**
				2- Low
				3- Low
				4- Low
				5-Low
Engelmann oak	*Quercus engelmannii*	--/--/4.2/Covered (MSHCP)	Perennial deciduous tree found in chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland. Occurs from 50–1,300 m in elevation and blooms from March–June.	**1- Low**
				2- Low
				3- Low
				4- Low
				5-Low
Parish's gooseberry	*Ribes divaricatum var. parishii*	--/--/1A/--	Perennial deciduous shrub found in riparian woodland at 65–300 m elevation. Blooms February–April.	**1- Moderate**
				2- Low
				3- Low
				4- Low
				5-Low

Common Name	Scientific Name	Status1 (Federal/State/ CRPR/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington Project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Coulter's matilija poppy	*Romneya coulteri*	--/--/4.2/Covered (MSHCP)	Perennial rhizomatous herb that occurs in chaparral and coastal scrub, often prevalent after a fire. Found at elevations of 20–1200 m.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
Sanford's arrowhead	*Sagittaria sanfordii*	--/--/1B.2/--	Perennial rhizomatous herb that occurs in marshes and swamps (assorted shallow freshwater). Occurs at elevations up to 650 m. Blooming period is May–November.	**1- High** **2- Low** **3- Low** **4- Low** **5-Low**
Chaparral ragwort	*Senecio aphanactis*	--/--/2B.2/--	Annual herb found in chaparral, cismontane woodland, and coastal scrub; soil is sometimes alkaline. Blooming period is January– April and occurs at 15 to 800 m in elevation.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
San Gabriel ragwort	*Senecio astephanus*	--/--/4.3/--	Perennial herb found in coastal bluff scrub and chaparral on rocky slopes. Occurs from 400–1500 m and blooming period is May–July.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/ CRPR/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington Project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Southern mountains skullcap	*Scutellaria bolanderi spp. austromontana*	--/--/1B.2/--	Perennial rhizomatous herb that is found in chaparral, cismontane woodland, and lower montane coniferous forest, in gravelly soils on streambanks or in mesic sites in oak or pine woodland. 425–2000 m.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Hammitt's clay-cress	*Sibaropsis hammittii*	--/--/1B.2/NE	Found in valley and foothill grassland, and chaparral. Mesic microsites in open areas on clay soils in stipa grassland. Often surrounded by adenostoma chaparral at elevations of 730–1065 m.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Salt Spring checkerbloom	*Sidalcea neomexicana*	--/--/2B.2/--	Perennial herb found in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub and playas in alkaline, mesic soils. Found at elevations from 15–1530 m elevation. Blooming period is March–June.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Bottle liverwort	*Sphaerocarpos drewei*	--/--/1B.1/--	Chaparral, coastal scrub. Much of suitable habitat lost to urbanization. Grows in openings; on soil. 90-600 m.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/ CRPR/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington Project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Laguna Mountains jewelflower	*Streptanthus bernardinus*	--/--/4.3/--	Perennial herb found in chaparral and lower montane coniferous forest. Occurs from 670–2500 m and blooming period is May–August.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
San Bernardino aster	*Symphyotrichum defoliatum*	--/--/1B.2/--	Perennial rhizomatous herb that is found in meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, and valley and foothill grassland. It is specifically found in vernally mesic grassland or near ditches, stream and springs; as well as disturbed areas. Elevation limits are 2–2040 m.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
Rigid fringepod	*Thysanocarpus rigidus*	--/--/1B.2/--	Annual herb found in pinyon and juniper woodland on dry rocky slopes. Occurs from 600–2200 m and blooming period is February–May.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
California screw-moss	*Tortula californica*	--/--/1B.2/--	A moss that occurs in chenopod scrub, and valley and foothill grassland habitats. It grows on sandy soils between 10–1,460 m elevation.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

TABLE 4.4-3
POTENTIALLY OCCURRING SENSITIVE WILDLIFE SPECIES

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Invertebrates				
Greenest tiger beetle	*Cicindela tranquebarica viridissima*	--/--/Covered (MSHCP)	Occurs in a few small colonies along the Santa Ana River watershed.	**1- High** **2- Low** **3- Low** **4- Low** **5-Low**
Quino checkerspot butterfly	*Euphydryas editha quino*	FE/--/Covered (MSHCP)	Found in sunny openings within chaparral and coastal sage scrub. Requires high densities of food plants which include: *Plantago erecta, P. ovata,* and *Castilleja exserta.*	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Delhi Sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	FE/--/Covered (MSHCP), (SARHCP)	Associated with arid, sandy habitats with loose, sandy soil. Found in inland desert valleys, rivers, deltas, and beach strands commonly in Delhi fine sands soil.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Riverside fairy shrimp	*Streptocephalus woottoni*	FE/--/Covered (MSHCP)	Known to occur in areas of swales/earth slump basins in grassland, chaparral and coastal sage scrub. Inhabit seasonally wet pools filled by winter/spring rains. Hatch in warm water later in the season.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Fish				
Santa Ana sucker	*Catostomus santaanae*	FT/--/Covered (MSHCP), (SARHCP)	Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, & algae.	**1-Present** **2- Low** **3-Low** **4-Low** **5-Low**
Arroyo chub	*Gila orcutti*	--/SSC/Covered (MSHCP), (SARHCP)	Prefers slow water stream sections with muddy or sandy bottoms. Feeds on aquatic vegetation, insects, and associated invertebrates.	**1-Present** **2- Low** **3-Low** **4-Low** **5-Low**
Santa Ana speckled dace	*Rhinichthys osculus ssp. 3*	--/SSC/Covered (SARHCP)	Requires permanent flowing streams with summer water temps of 17-20 C. Usually inhabits shallow cobble and gravel riffles.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
Amphibians				
Arroyo toad	*Anaxyrus californicus*	FE/SSC/Covered (MSHCP), (SARHCP)	Found in semi-arid regions near washes or intermittent streams, including valley-foothill, desert riparian, and desert wash habitats. Specifically occurs in rivers with sandy banks, willow, cottonwoods, and sycamores. Prefers loose, gravelly areas of streams in drier parts of range.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Northern leopard frog	*Lithobates pipiens*	--/SSC/--	Near permanent or semi-permanent water in a variety of habitats. Highly aquatic species. Shoreline cover, submerged and emergent aquatic vegetation are important habitat characteristics.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
California red-legged frog	*Rana draytonii*	FT/SSC/Covered (MSHCP)	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development and must have access to estivation habitat.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Southern mountain yellow-legged frog	*Rana muscosa*	FE/SE, WL/Covered (MSHCP)	In Southern California the population is restricted to ponderosa pine, montane hardwood-conifer, and montane riparian habitats—always within a few feet of water. Elevation range from 370–2290 m in Southern California.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Western spadefoot	*Spea hammondii*	--/SSC/Covered (MSHCP), (SARHCP)	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rainpools or shallow temporary pools, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Coast Range newt	*Taricha torosa*	--/SSC/Covered (MSHCP)	Found in coastal drainages from Mendocino to San Diego County; lives in terrestrial habitats and will migrate over 1km to breed in ponds, reservoirs and slow moving streams.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
Reptiles				
Silvery legless lizard	*Anniella pulchra pulchra*	--/SSC/--	Along stream terraces with sycamores, cottonwoods, or oaks. Woodlands under leaf litter.	**1- High** **2- Low** **3- Low** **4- Moderate** **5-Low**
California glossy snake	*Arizona elegans occidentalis*	--/--/Covered (SARHCP)	Common in desert habitats, but also occur in chaparral, sagebrush, valley-foothill hardwood, pine juniper, and annual grasslands up to 1830 m. Inhabit mammal burrows, rock outcrops, and, occasionally, burrow in loose soil. Prefer sandy areas with scattered brush, also found in rocky areas.	**1- Moderate** **2- Low** **3- Low** **4- Moderate** **5-Low**
Orange-throated whiptail	*Aspidoscelis hyperythra*	--/SSC, WL/--	Species requires intact habitat within chaparral, cismontane woodland and coastal scrub plant communities. Prefers washes & other sandy areas with patches of brush & rocks. Perennial plants necessary for its major food-termites.	**1- High** **2- Low** **3- Low** **4- Moderate** **5- Moderate**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Coastal whiptail	*Aspidoscelis tigris ssp. stejnegeri*	--/WL/--	Found in deserts and semi-arid areas with sparse vegetation; also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	**1- High** **2- Low** **3- Low** **4- High** **5- Hign**
San Diego banded gecko	*Coleonyx variegatus abbotti*	--/--/Covered (MSHCP)	Found in granite or rocky outcrops in coastal scrub and chaparral habitats.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Moderate**
Red-diamond rattlesnake	*Crotalus ruber*	--/SSC/Covered (MSHCP)	Found in chaparral, woodland, grassland and desert areas. Occurs in rocky, dense vegetation, requires rodent burrows, cracks in rocks or surface cover objects.	**1- Moderate** **2- Low** **3- Low** **4- Moderate** **5- Moderate**
Western pond turtle	*Emys marmorata*	--/SSC/Covered (MSHCP), (SARHCP)	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, below 1800 m elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**1- High** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
California mountain kingsnake (San Bernardino population)	*Lampropeltis zonata (parvirubra)*	--/SSC, WL/--	Scrub or woodland habitat from sea level to 2450 m. Commonly found near streams, wet meadows, or lake shores with boulders, rocks, or rotting logs nearby.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Coast horned lizard	*Phrynosoma blainvillii*	--/SSC/--	Known to occur in sandy washes with within chaparral or coastal scrub habitat. Requires loose soil for burial and abundant supply of harvester ants.	**1- Low** **2- Low** **3- Low** **4- Moderate** **5-Low 4- High**
Coast patch-nosed snake	*Salvadora hexalepis virgultea*	--/SSC	Occurs in coastal scrub in coastal Southern California. Require small mammal burrows for refuge and overwintering sites.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Two-striped gartersnake	*Thamnophis hammondii*	--/SSC/--	Highly aquatic, found in or near permanent or freshwater, often along streams with rocky beds and riparian growth. Ideal habitat is characterized as having dense emergent vegetation for escape from predation, deep and shallow pools of water, open areas along the margins to allow for basking, and upland habitat with access to structures suitable for hibernation and escape from flooding.	**1- High** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
South Coast (common) gartersnake	*Thamnophis sirtalis* ssp.	--/SSC/Covered (SARHCP)	Associated with permanent or semi-permanent bodies of water. Forages is quiet pools or on land. Take cover in small mammal burrows or rock crevices.	**1- Present** **2- Low** **3- Low** **4- Low** **5-Low**
Birds				
Cooper's hawk	*Accipiter cooperi*	--/WL/Covered (MSHCP)	Found in riparian areas, and open woodlands, chiefly of open, interrupted or marginal type. Nests in riparian growths of deciduous trees and live oak woodlands.	**1- High** **2- Low** **3- High** **4- High** **5-High**
Tricolored blackbird	*Agelaius tricolor*	--/CE/Covered (MSHCP), (SARHCP)	Found in freshwater marshes, swamps, and wetlands. Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.	**1- High** **2- Low** **3- Low** **4- Low** **5-Low**
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	--/WL/Covered (MSHCP)	Known to frequent relatively steep, often rocky hillsides with grass and forb species. Resides in Southern California coastal sage scrub and mixed chaparral.	**1- Low** **2- Low** **3- Low** **4- Moderate** **5- Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Grasshopper sparrow	*Ammodramus savannarum*	--/SSC/Covered (MSHCP)	Found in chenopod scrub. Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Golden eagle	*Aquila chrysaetos*	--/FP, WL/Covered (MSHCP)	Rolling foothills, mountain areas, sage-juniper flats, & desert. Nests in cliff-walled canyons and large trees in open habitats	**1-Low** **2- Low** **3- Low** **4- Low** **5-Low**
Bell's sage sparrow	*Artemisiospiza belli belli*	--/WL/Covered (MSHCP)	Lives in shrubland and chaparral dominated by chamise or California sagebrush in foothills and coastal ranges. Nests either on the ground or within shrubs about three feet above ground-level.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Moderate**
Long-eared owl	*Asio otus*	--/SSC/--	Riparian bottomlands grown to tall willows & cottonwoods; also, belts of live oak paralleling stream courses. Require adjacent open land productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Burrowing owl	*Athene cunicularia*	--/SSC/Covered (MSHCP), (SARHCP)	Found in a variety of habitats that contain small mammal burrows, including open, dry annual or perennial grasslands, agricultural, rangelands, deserts and scrublands characterized by low- growing vegetation.	**1- Low** **2- Low** **3- Low** **4- Low** **5- Low**
Ferruginous hawk	*Buteo regalis*	--/WL/Covered (MSHCP)	Found in open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon-juniper habitats. Also documented in dry and irrigated croplands. This species does not nest in Southern California.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Swainson's hawk	*Buteo swainsoni*	--/ST/Covered (MSHCP)	Breed in desert, shrub steppe, agricultural, and grassland habitats. Nests in a variety of tree species in existing riparian forests, remnant riparian trees, shade trees at residences and alongside roads, planted windbreaks, and solitary upland oaks. Typically do not nest in large continuous patches of woodland other than along edges next to open habitats.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Low**
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	--/SSC/Covered (MSHCP), (SARHCP)	Southern California coastal sage scrub. Wrens require tall opuntia cactus for nesting and roosting.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Western snowy plover	*Charadrius alexandrinus nivosus*	FT/SSC/--	Will nest beside or near tidal waters, and includes all nesting colonies on the mainland coast, peninsulas, offshore islands, adjacent bays and estuaries from southern Washington to southern Baja California, Mexico Historic records suggest that nesting western snowy plovers were once more widely distributed in coastal California.	**1- Unlikely** **2- Unlikely** **3- Unlikely** **4- Unlikely** **5-Unlikely**
Western yellow-billed cuckoo	*Coccyzus americanus* ssp. *occidentalis*	FT/SE/Covered (MSHCP), (SARHCP)	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Often a dominance of willow mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**1- High** **2- Low** **3- Low** **4- Low** **5-Low**
Black swift	*Cypseloides niger*	--/SSC/Covered (MSHCP) (breeding)	Found in coastal bluffs and mountains. Forage in a variety of habitats but rest in steep, rocky, and often moist, cliffs. Nests in moist (required) crevices near sea or waterfalls. Does not winter in California.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
White-tailed kite	*Elanus leucurus*	--/FP, WL/Covered (MSHCP)	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**1- High** **2- Low** **3- Low** **4- Low** **5-Moderate**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Southwestern willow flycatcher	*Empidonax traillii extimus*	FE/SE/Covered (MSHCP), (SARHCP)	Occurs within riparian woodlands typically dominated by willows in Southern California.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
California horned lark	*Eremophila alpestris actia*	--/WL/Covered (MSHCP)	Known to occur within the vicinity of marine intertidal and splash zone communities, short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats, and seeps.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Merlin	*Falco columbarius*	--/WL/Covered (MSHCP)	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches. Clumps of trees or windbreaks are required for roosting in open country.	**1- Moderate** **2- Low** **3- Low** **4- Moderate** **5-Moderate**
Bald eagle	*Haliaeetus leucocephalus*	DL/SE, FP/Covered (MSHCP)	Found along open shore, lake margins, and rivers for both nesting and wintering, usually nests within 1 mile of water. Nests in large, old-growth, or dominant live tree w/open branches, especially ponderosa pine.	**1- Low** **2- Low** **3- Low** **4- Low** **5- Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Yellow-breasted chat	*Icteria virens*	--/SSC/Covered (MSHCP), (SARHCP)	Found in dense scrub, often along streams and ponds.	**1- Present** **2- Low** **3- Low** **4- Low** **5- Low**
Loggerhead shrike	*Lanius ludovicianus*	--/SSC/Covered (MSHCP)	Broken woodlands, savannah, pinyon-juniper, Joshua tree, & riparian woodlands, and desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**1- High** **2- Low** **3- Low** **4- Moderate** **5-Moderate**
White-faced ibis	*Plegadis chihi*	--/WL/Covered (MSHCP)	Occurs in shallow freshwater marsh with dense tule thickets for nesting interspersed with areas of shallow water for foraging.	**1- High** **2- Low** **3- Low** **4- Low** **5-Low**
Coastal California gnatcatcher	*Polioptila californica* ssp. *californica*	FT/SSC/Covered (MSHCP), (SARHCP)	Coastal sage scrub habitat in arid washes, on mesas or on slopes of coastal hills. Permanent resident of coastal sage scrub below 2500 ft.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Moderate**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Yellow warbler	*Setophaga petechia*	--/SSC/Covered (MSHCP)	Found in riparian (often willow) forests along streams and wetlands—typically in low, open-canopy riparian woodland. Breeds in riparian woodlands up to 2500 m, montane chaparral, open ponderosa pine, and mixed conifer habitats.	**1- Present** **2- Low** **3- Low** **4- Low** **5-Low**
Least Bell's vireo	*Vireo bellii pusillus*	FE/SE/Covered (MSHCP), (SARHCP)	Known to occur in riparian forest, scrub, and woodland habitats. Nests primarily in willow, baccharis, or mesquite habitats	**1- Present** **1- Low** **2- Low** **3- Low** **4- Moderate** **5-Moderate**
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	--/SSC/--	Forages in emergent wetland in moist, open areas. Breeds only where large insects are abundant, prefers to nest in large wetlands but will nest in dense emergent wetland with cattails or tules.	**1- High** **2- Low** **3- Low** **4- Low** **5-Low**
Mammals				
Pallid bat	*Antrozous pallidus*	--/SSC/--	Known to occur in a wide variety of habitats including deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting; particularly associated with buildings and bridges.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Northwestern San Diego pocket mouse	*Chaetodipus fallax* ssp. *fallax*	--/SSC/Covered (MSHCP)	Found in coastal scrub, chaparral, grasslands, sagebrush, etc. in sandy, herbaceous areas, usually in association with rocks or coarse gravel.	**1- High** **2- High** **3- Low** **4- Low** **5- Moderate**
Pallid San Diego pocket mouse	*Chaetodipus fallax pallidus*	--/SSC/--	Found in desert wash, pinyon and juniper woodlands, and Sonoran desert scrub in eastern San Diego County. Sandy herbaceous areas, usually in association with rocks or coarse gravel.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5-Moderate**
Townsend's big-eared bat	*Corynorhinus townsendii*	--/SC, SSC/--	Roosting: caves, mine shafts or other open cavities. Foraging: woodlands, coastal scrub, grasslands, chaparral.	**1- Low** **2- Low** **3- Low** **4- Low** **5- Low**
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	FE/SSC/ Covered (MSHCP), (SARHCP)	Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and flood plains. Needs early to intermediate seral stages.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Stephens' kangaroo rat	*Dipodomys stephensi*	FE/ST/Covered (MSHCP)	Primarily found in annual and perennial grasslands, also occurs in coastal scrub and sagebrush with sparse canopy cover.	**1- Moderate** **2- Low** **3- Low** **4- Low** **5- Moderate**
Western mastiff bat	*Eumops perotis californicus*	--/SSC/--	Known to occur throughout California and occupies a wide variety of habitats, including grasslands, shrublands, cismontane woodland's; most common in open, dry habitats with rocky areas for roosting.	**1- High** **2- High** **3- Low** **4- Low** **5- Low**
Hoary bat	*Lasiurus cinereus*	--/S4/--	Prefers open habitats or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**1- High** **2- Low** **3- Low** **4- Low** **5-Moderate**
Western yellow bat	*Lasiurus xanthinus*	--/SSC/--	Found in valley foothill riparian, desert riparian, desert wash and palm oasis habitats. Roosts in trees, particularly palms, forages over water and among trees.	**1- High** **2- Low** **3- Low** **4- Moderate** **5-Moderate**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
San Diego black-tailed jackrabbit	*Lepus californicus* ssp. *bennettii*	--/SSC/Covered (MSHCP), (SARHCP)	Associated with open grassland and brushland, and coastal sage scrub habitats in Southern California.	**1- High** **2- Low** **3- Low** **4- Low** **5-High**
Yuma myotis	*Myotis yumanensis*	--/S4/--	This species is typically associated with a nearby water source. Maternity colonies are found in buildings, under bridges, and in mines and caves.	**1- High** **2- Low** **3- Low** **4- Low** **5-Low**
San Diego desert woodrat	*Neotoma lepida* ssp. *intermedia*	--/SSC/Covered (MSHCP)	Coastal scrub of Southern California. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops & rocky cliffs & slopes.	**1-High** **2- Low** **3- Low** **4-High** **5- Low**
pocketed free-tailed bat	*Nyctinomops femorosaccus*	--/SSC/Covered (MSHCP)	Found in a variety of arid areas in S. California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc.	**1- Moderate** **2- Moderate** **3- Low** **4- Low** **5-Low**

Common Name	Scientific Name	Status1 (Federal/State/Local)	Habitat	Potential to Occur within the Project Arundo Removal Area (1), Chino Basin Production Well Site (2), Arlington project (3) Cannon Pump Station (4), ID-4 CRA Crossing Refurbishment (5)
Big free-tailed bat	*Nyctinomops macrotis*	--/SSC/--	Inhabit low-lying, arid areas with high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Southern grasshopper mouse	*Onychomys torridus ramona*	--/SSC/--	Found in desert areas, especially scrub habitats with friable soils for digging, prefers low to moderate shrub cover.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**
Los Angeles pocket mouse	*Perognathus longimembris* ssp. *brevinasus*	--/SSC/Covered (MSHCP), (SARHCP)	Lower elevation grasslands & coastal sage communities. Open ground with fine sandy soils. May not dig extensive burrows, hiding under weeds & dead leaves instead.	**1- Moderate** **2- Low** **3- Low** **4- Moderate** **5-Moderate**
American badger	*Taxidea taxus*	--/SSC/--	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Various habitats ranging from coastal sand dunes to montane coniferous forests. Needs open, uncultivated ground.	**1- Low** **2- Low** **3- Low** **4- Low** **5-Low**

Critical Habitat

The USFWS designates Critical Habitat, which is a specific geographic area, or areas that contain features essential for the conservation of a federally threatened or endangered species, and that may require special management and protection to ensure its continued availability and ecological function. Critical Habitat may include an area that is not currently occupied by the species, but is deemed essential for its conservation. Designated and Proposed Critical Habitat units within the Project area are shown in **Figure 4.4-2**.

Within the Project area, designated Critical Habitat occurs within the arundo removal site along the Santa Ana River. Designated Critical Habitat for Santa Ana sucker (*Catostomus santaanae*) occurs throughout the arundo removal site, while Critical Habitat for least Bell's vireo (*Vireo bellii pusillus*) occurs in Prado Basin and the majority of the Santa Ana River. Designated critical habitat for southwestern willow flycatcher (*Empidonax traillii extimus*) and Proposed Critical Habitat for yellow-billed cuckoo (*Coccyzus americanus*) occurs within the Prado Basin and along the Santa Ana River immediately upstream of Prado Basin. Designated or Proposed Critical Habitat does not occur within the other project sites.

Jurisdictional Resources

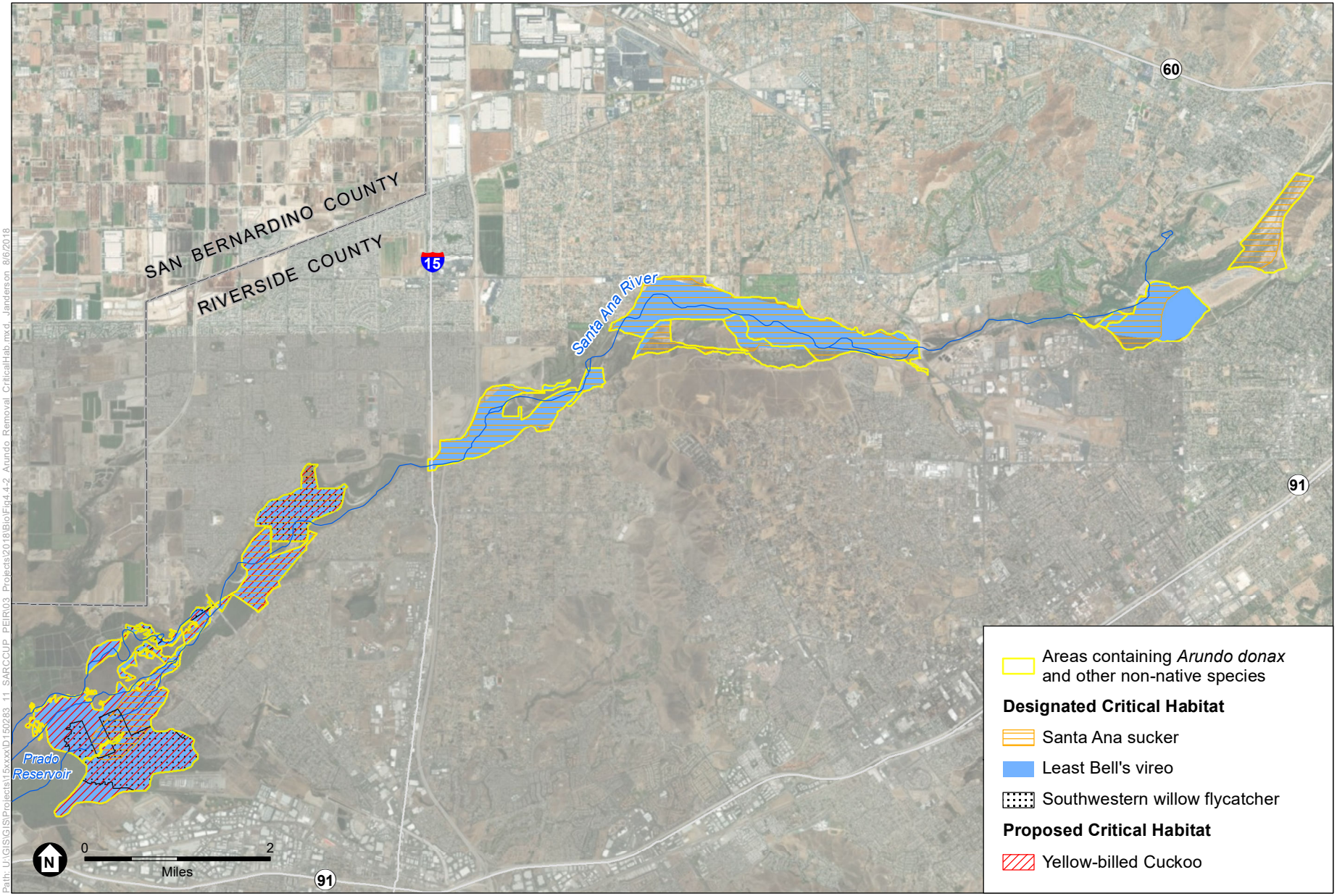
Wetlands and permanent and intermittent drainages, creeks, and streams identified as waters of the U.S. are generally subject to the jurisdiction of the USACE and Regional Water Quality Control Board (RWQCB) under Section 404 and Section 401, respectively, of the Federal Clean Water Act. Waters of the U.S. are defined as those susceptible to interstate commerce and are called "traditional navigable waters" that includes bodies of water that have a connection to the seas and their tributaries, those subject to the ebb and flow of the tide, and interstate wetlands. Wetlands are defined as areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions; generally including swamps, marshes, bogs, and similar areas.

Streambeds are subject to regulation by the CDFW under Section 1602 of the California Fish and Game Code. A stream is defined under these regulations as a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. This definition includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. CDFW jurisdiction typically extends to the edge of the riparian vegetation canopy.

A formal jurisdictional delineation, followed by agency verification, would be required to determine the extent of jurisdictional resources within the Project area.

Chino Basin Production Wells, Refurbishment and Treatment System

Based on the biological reconnaissance survey, this specific project site does not support potential jurisdictional resources.



SOURCE: ESRI

SARCCUP

Figure 4.4-2

Potential Santa Ana River Arundo Removal Designated and Proposed Critical Habitat

ESA

Arlington Production Wells and Pipeline

Based on the biological reconnaissance survey, this specific project site does not support potential jurisdictional resources.

Cannon Pump Station

Based on the biological reconnaissance survey, the Canyon Pump Station project site does not appear to support any drainages or evidence of surface flows. However, based on review of the National Wetlands Inventory, a blue-line stream traverses the site (USFWS 2018), and riparian vegetation consisting of black willow thicket occupies 0.63 acre of the site.

ID-4 CRA Crossing Refurbishment

Based on the biological reconnaissance survey, the ID-4 CRA Crossing Refurbishment site does support open water habitat and riparian vegetation that could be considered jurisdictional resources. Specifically, habitats mapped as Elderberry Scrub, Black Willow Thicket, and Open Water within the ID-4 CRA Crossing Refurbishment site (Figure 4.4-1d) may be subject to the jurisdiction of the USACE, RWQCB, and/or CDFW.

Santa Ana River Arundo Removal

The Santa Ana River is a known water of the U.S. because it flows into the Pacific Ocean, and all of the creeks and drainages that are tributary to the Santa Ana River fall under the jurisdiction of the USACE, RWQCB, and/or CDFW. Although a formal wetland delineation has not been conducted for the Santa Ana River Arundo Removal site, many areas within the site that are along the Santa Ana River and Prado Basin would be subject to the jurisdiction of the USACE, RWQCB and/or CDFW including the areas mapped as Wetland and Woody Riparian Mix (Figure 4.4-1e).

Wildlife Movement

Wildlife movement occurs through areas of habitat linkages and movement corridors. Habitat linkages are contiguous areas of open space that connect two larger habitat areas. Linkages provide for both diffusion and dispersal for a variety of species within the landscape. In addition, linkages can serve as primary habitat for some smaller species. Corridors are linear linkages between two or more habitat patches. Corridors provide for movement and dispersal, but do not necessarily include habitat capable of supporting all life history requirements of a species.

Wildlife movement corridors and habitat linkages are critical for the survivorship of ecological systems for several reasons. Corridors and linkages can connect water, food, and cover sources, spatially linking these three resources with wildlife in different areas. In addition, wildlife movement between habitat areas provides for the potential of genetic exchange between wildlife species populations, thereby maintaining genetic variability and adaptability to maximize the success of wildlife responses to changing environmental conditions. This is especially critical for small populations subject to loss of variability from genetic drift and effects of inbreeding. The nature of corridor use and wildlife movement patterns varies among species.

The Santa Ana River and its tributaries, including the Prado Basin Reservoir, provide linkage between the San Bernardino Mountains and all open space between there and the Pacific Ocean, which is important for fish species such as Santa Ana Sucker and arroyo chub as well as numerous terrestrial wildlife species. Neo-tropical migratory birds use the Prado Basin Reservoir and other riparian forests associated with the Santa Ana River. Upwards of 230 species of waterfowl, shorebirds, songbirds, and raptors are known to occur in the Prado Basin, many of which are migratory species. The foothills of the San Gabriel Mountains and the drainages that flow out of the mountains are also import areas for wildlife movement, as the drainages provide linkage between the mountains and the Santa Ana River to the south.

Habitat Conservation Plans

Upper Santa Ana River Habitat Conservation Plan

Ten local public agencies of the Santa Ana River Watershed, including Valley District, and USFWS, CDFW, and stakeholder organizations are collaborating to complete a draft Upper Santa Ana River Habitat Conservation Plan (Upper SAR HCP) and associated watershed-wide Conservation Strategy for aquatic dependent resources. The Phase 1 Report for the Upper SAR HCP was completed in March of 2014. 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 which have become exceedingly rare in arid Southern California. The Upper SAR HCP will streamline the incidental take permitting process for twenty-three 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. The draft list of covered species and proposed projects can be viewed online at http://www.uppersarhcp.com/covered-species/. The Upper SAR HCP is under development and has not been adopted by the wildlife agencies at this time. The arundo removal areas are located within the proposed Upper SAR HCP.

Stephens' Kangaroo Rat Habitat Conservation Plan

In October 1988 the Stephens' kangaroo rat (SKR) was listed as an endangered species by the U.S. Fish and Wildlife Service (USFWS). Under the ESA, both the SKR and its habitat are protected from any type of disturbance resulting in take of the species. The net effect was to freeze new development on more than 22,000 acres throughout western Riverside County. At the time of listing very little was known about the animal, its geographical distribution, or its habitat needs. In order to address the severe economic impacts of the SKR listing, the Riverside County Habitat Conservation Agency (RCHCA) prepared a Short-Term Habitat Conservation Plan (HCP). This HCP, approved by the USFWS and CDFG in August 1990, was intended as an interim conservation program designed to afford protection to the SKR while a plan providing for the establishment of permanent preserves could be developed. The ID-4 CRA Crossing Refurbishment site is located within the SKRHCP.

Western Riverside County Multiple Species Habitat Conservation Plan

The Western Riverside County MSHCP involves the assembly and management of a 500,000-acre Conservation Area for the conservation of natural habitats and their constituent wildlife populations. The MSHCP was developed to serve as a HCP pursuant to the Natural Communities Conservation Planning (NCCP) Act and Section 10(a)(1)(B) of the FESA. It encompasses 1.26 million acres and includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line as well as jurisdictional areas of the cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto. The overarching purpose of the plan is to balance development and economic interests with species and lands conservation goals. The MSHCP permits development of lands and take of species "in exchange for the assembly and management of a coordinated MSHCP Conservation Area" (Riverside County 2004).

The approval of the MSHCP and the Implementing Agreement (IA) by the USFWS and the CDFW allows signatories of the IA to issue take authorizations for the 146 species covered by the MSHCP (termed "covered species"), including state and federally listed species, as well as other identified sensitive species. The take authorization includes impacts to the habitats of the covered species. The MSHCP requires any new development to pay fees to support the financing for the MSHCP. The fees are intended to meet mitigation requirements for CEQA, FESA, and CESA. The MSHCP is further broken down into core areas and linkages, which are the focus of reserve and preservation actions. The arundo removal site is located within conserved lands, and some areas are within criteria cells (RCA 2018). While the remaining four specific project sites are not located within conserved lands or criteria cells, the MSHCP still applies to all five specific projects.

4.4.2 Regulatory Framework

The regulatory framework is discussed as it pertains to the management and conservation of biological resources, and the permitting process for proposed development projects in and adjacent to areas with significant biological resources.

Federal

Federal Endangered Species Act

The USFWS and National Marine Fisheries Service (NMFS) have responsibility for administration of the federal ESA. The ESA provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered in the U.S. or elsewhere. The federal ESA has four major components: 1) provisions are made for listing species, 2) requirements for federal agency consultation with USFWS or NMFS, 3) prohibitions against taking of listed species, and 4) the provisions for permits that allow incidental take of listed species for otherwise lawful activities. Take, as defined in the federal ESA, means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The ESA also requires the preparation of recovery plans and the designation of critical habitat for listed species.

The Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter, or take any migratory bird listed in Title 50 of the Code of Federal Regulations CFR Part 10. Take is defined as possession or destruction of migratory birds, their nests, or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MTBA.

Federal Clean Water Act (33 USC 1251 through 1376)

The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires a project operator for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. to obtain state certification, thereby ensuring that the discharge will comply with provisions of the CWA. The RWQCB administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the United States. Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the United States, including wetlands. USACE implementing regulations are found at 33 CFR 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the United States Environmental Protection Agency in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Wetlands and Other Waters of the United States

Aquatic resources, including riparian areas, wetlands, and certain aquatic vegetation communities, are considered sensitive biological resources and can fall under the jurisdiction of several regulatory agencies. USACE exerts jurisdiction over waters of the United States, including all waters that are subject to the ebb and flow of the tide; wetlands and other waters such as lakes, rivers, streams (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds; and tributaries of the above features. The extent of waters of the United States is generally defined as that portion that falls within the limits of the ordinary high water mark (OHWM). Typically, the OHWM corresponds to the two-year flood event.

Wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas, are defined by USACE as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b]; 40 CFR 230.3[t]). Indicators of three wetland parameters (i.e., hydric soils, hydrophytic vegetation, and wetlands hydrology), as determined by field investigation, must be present for a site to be classified as a wetland by USACE (USACE 1987).

State

California Endangered Species Act (California Fish and Game Code Section 2050 et seq.)

The CESA establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no state agency consultation procedures under the CESA. For projects that would affect a listed species under both the CESA and the FESA, compliance with the FESA would satisfy the CESA if CDFW determines that the federal incidental take authorization is "consistent" with the CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species listed under the CESA only, the project operator would have to apply for a take permit under Section 2081(b).

California State Fish and Game Code Section 1602

Under these sections of the California Fish and Game Code, the project operator is required to notify CDFW prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events.

Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement, which becomes part of the plans, specifications, and bid documents for the project.

California Fully Protected Species

California fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species.

California State Fish and Game Code Sections 2080 and 2081

Section 2080 of the California Fish and Game Code states that "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as

otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act." Pursuant to Section 2081 of the code, CDFW may authorize individuals or public agencies to import, export, take, or possess state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or Memoranda of Understanding if the take is incidental to an otherwise lawful activity, impacts of the authorized take are minimized and fully mitigated, the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and the project operator ensures adequate funding to implement the measures required by CDFW, which makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

California State Fish and Game Code Sections 3503, 3503.5, 3513, and 3800

Section 3503 of the California Fish and Game Code 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 its 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. This statute does not provide for the issuance of any type of incidental take permit.

Section 3800 of the California Fish and Game Code affords protection to all nongame birds, which are all birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds. Section 3513 of the California Fish and Game Code upholds the MBTA by prohibiting any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA.

California Environmental Quality Act Guidelines, Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, *CEQA Guidelines* Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected and requires findings of significance if there would be substantial losses. Natural communities listed by CNDDB as sensitive are considered by CDFW to be significant resources and fall under the

CEQA Guidelines for addressing impacts. Local planning documents such as general plans often identify these resources as well.

Native Plant Protection Act (California Fish and Game Code Sections 1900 through 1913)

California's Native Plant Protection Act (NPPA) requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The project operator is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

California Wetland Definition

Unlike the federal government, California has adopted the Cowardin et al. (1979) definition of wetlands. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes (at least 50 percent of the aerial vegetative cover); (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and saturated with water or covered by shallow water at some time during the growing season of each year.

Under normal circumstances, the federal definition of wetlands requires all three wetland identification parameters to be met, whereas the Cowardin definition requires the presence of at least one of these parameters. For this reason, identification of wetlands by state agencies consists of the union of all areas that are periodically inundated or saturated or in which at least seasonal dominance by hydrophytes may be documented or in which hydric soils are present.

Section 401 Clean Water Act

Under Section 401 of the CWA, the local RWQCB, Santa Ana RWQCB, must certify that actions receiving authorization under Section 404 of the CWA also meet state water quality standards. The RWQCB requires projects to avoid impacts to wetlands if feasible and requires that projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. Compensatory mitigation for impacts to wetlands and/or waters of the state is required.

Porter-Cologne Water Quality Control Act

The RWQCB also has jurisdiction over waters deemed "isolated" or not subject to Section 404 jurisdiction under the SWANCC decision (*Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers*, 531 U.S. 159 [2001]). Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the state and prospective dischargers are required obtain authorization through an Order of Waste Discharge or waiver thereof from the RWQCB and comply with other requirements of Porter-Cologne Act.

Local

The Project area encompasses unincorporated land within two counties and two incorporated cities. Each of these jurisdictions has its own independent General Plan and municipal code that pertain to biological resources. The County of Riverside and County of San Bernardino have tree removal permit requirements. The City of Riverside has a tree preservation ordinance, but the City of Montclair does not have an ordinance protecting trees.

4.4.3 Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the level of significance of impacts to biological resources are based on Appendix G of the *CEQA Guidelines*. The proposed Project would have a significant impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (see Impact 4.4-1, below);
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS (see Impact 4.4-2, below);
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (see Impact 4.4-3, below);
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (see Impact 4.4-4, below);
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (see Impact 4.4-5, below); or
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (see Impact 4.4-6, below).

Impacts Discussion

Special Status Plants

Impact 4.4-1a: The proposed Project could have significant effects on plant species because the Project could have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status plant species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

Chino Basin Production Wells, Refurbishment and Treatment System

This project involves construction of a new groundwater treatment system that will extract up to 3,000 AFY from an existing well. The infrastructure for the groundwater treatment system includes installation of piping and concrete slabs, as well as connections to existing sewer and brine lines within Palo Verde Street. The Well 13 site is located at the intersection of Etiwanda and Philadelphia in City of Jurupa Valley The Well 34 site is an existing well site that is barren/developed and supports limited ornamental vegetation along the northern perimeter and on the north side of Palo Verde Street. Based on the lack of native habitat and the disturbed nature of the site, special-status plants are not expected to occur. No impact would occur to special-status plants at the Well 34 site.

Groundwater extraction may lower groundwater levels in areas with groundwater-supported ecosystems. The Well 34 site is located within the Chino Basin. All groundwater extractions in the Chino Basin are regulated under the adjudication by the Chino Basin Watermaster. As part of the overall management of SARCCUP impacts to groundwater management, the Watermaster is responsible for ensuring that groundwater levels are maintained sufficiently to support groundwater-dependent ecosystems. The use of one additional well within the large Chino Basin would not substantially affect groundwater levels in areas that support vegetation, which are typically on the southern border of the Basin near the Prado Basin and Santa Ana River. Through the responsible groundwater basin management imposed by the Watermaster, the refurbishment of Well 34 would not lower groundwater levels sufficiently to impact groundwater-dependent ecosystems.

Arlington Production Wells and Pipeline

The project involves construction of two extraction wells and associated distribution pipelines within existing roadways. As such, this site supports developed or ornamental vegetation. Based on the lack of native habitat and developed land uses within and surrounding the site, special-status plants are not expected to occur. No impact would occur to special-status plants.

Groundwater extraction may lower groundwater levels in areas with groundwater-supported ecosystems. The Arlington Wells and Pipeline would be located within the Arlington/Riverside Groundwater Basin. Groundwater extractions in the Arlington/Riverside Groundwater Basin are managed by WMWD. As part of the overall management of SARCCUP impacts to groundwater management, WMWD is responsible for ensuring that groundwater levels are maintained sufficiently to support groundwater-dependent ecosystems. The use of one additional well within the large Arlington/Riverside Groundwater Basin would not substantially affect groundwater levels in areas that support vegetation, which are typically on the southern border of the Basin near the Prado Basin and Santa Ana River. Through the responsible groundwater basin management imposed by WMWD, the Arlington Wells and Pipeline would not lower groundwater levels sufficiently to impact groundwater-dependent ecosystems.

Cannon Pump Station

The project involves the construction of a pump station, associated pipelines, a new driveway, and removal of an existing booster station. Permanent and temporary impacts to native habitats

consisting of brittlebush scrub and black willow thicket would occur. As shown in Table 4.4-2, the following special-status plants have a moderate or higher potential to occur on the project site: Plummer's mariposa lily, intermediate mariposa lily, southern tarplant, smooth tarplant, paniculate tarplant, Robinson's pepper-grass, Pringle's monardella, Fish's milkwort, and white rabbit-tobacco. If these plant species occur within the project construction area, potential project impacts could occur during construction activities, which would be considered a significant impact.

Implementation of Mitigation Measure BIO-1 would require focused surveys within the project impact footprint prior to construction, avoidance where feasible, and appropriate compensation for unavoidable impacts to special-status plants through consultation with the CDFW and USFWS. Implementation of Mitigation Measure BIO-2 would require worker environmental awareness training for the construction crew to assist workers with identifying and avoiding impacts to sensitive biological resources.

ID-4 CRA Crossing Refurbishment

The project would implement one of two refurbishment alternatives to ensure the existing pipe crossing is protected. The two options include the following: 1) implementing a split casing that covers the crossing to direct leaks to a proposed sump fiberglass-reinforced plastic tank, or 2) reinforcing the existing pipe with fiberglass material and with flexible HDPE or Cured-In-Place Pipe inside. Temporary impacts to native habitats consisting of California sagebrush scrub, elderberry scrub, and black willow thicket could occur as a result of access and/or staging areas, while open water habitat would be avoided. As shown in Table 4.4-2, the following special-status plants have a moderate or higher potential to occur on the project site: San Jacinto Valley crownscale, Catalina mariposa lily, intermediate mariposa lily, paniculate tarplant, Robinson's pepper-grass Pringle's monardella, Fish's milkwort, and white rabbit-tobacco. If these plant species occur within the project construction area, potential project impacts could occur during construction activities, which would be considered a significant impact.

Implementation of Mitigation Measure BIO-1 would require focused surveys within the project impact footprint prior to construction, avoidance where feasible, and appropriate compensation for unavoidable impacts to special-status plants through consultation with the CDFW and USFWS. Implementation of Mitigation Measure BIO-2 would require worker environmental awareness training for the construction crew to assist workers with identifying and avoiding impacts to sensitive biological resources.

Santa Ana River Arundo Removal

The project would remove *Arundo donax* and other invasive plant species within an approximately 640-acre area along the Santa Ana River between Prado Dam and the Interstate 10 Freeway crossing in Riverside. The project would involve eradication of giant reed and other invasive plants, including tamarisk (*Tamarix sp.*), perennial pepperweed (*Lepidium latifolium*), tree of heaven (*Ailanthus altissima*), castor bean (*Ricinius communis*), various palms (*Phoenix canariensis* and *Washingtonia robusta*), pampas grass (*Cortaderia selloana*), and others. Techniques that will be used include removal by hand using chainsaws, brush cutters, or other

power tools. As described in the project description, hand removal is the only method allowed in mixed stands; however, pure stands of invasive plants would likely require tractor-mounted mulching mowers. Therefore, potential impacts to native plants, including special-status plants, would be avoided. Impacts would be less than significant.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

BIO-1: **Special-Status Plants**. The following measures will reduce potential project-related impacts to special-status plant species that may occur on or adjacent to the Cannon Pump Station project and the ID-4 CRA Crossing sites.

a. Prior to the start of construction, a focused botanical survey will be conducted during the appropriate blooming periods to determine the presence/absence of any of the special-status species with a moderate or high potential to occur. The focused botanical survey will be conducted by a botanist or qualified biologist knowledgeable in the identification of local special-status plant species, and according to accepted protocol outlined by the CDFW. Special-status plants detected during the botanical survey will be flagged for avoidance to the extent feasible.

b. If impact avoidance is not feasible, the impacted acreage supporting the special-status plant species and the number of individual plants impacted within the construction area will be quantified. If a special-status plant species is discovered in a project impact area, consultation with CDFW and/or USFWS will be required prior to the impact occurring to develop an appropriate mitigation strategy. Depending on the sensitivity of the species, relocation or seed collection may be an acceptable option to avoid significant impacts, as determined through consultation with the resource agencies. The number of individual plants impacted will be replaced at a minimum of 1:1.

BIO-2: **Worker Environmental Awareness Program**. Prior to construction at the Cannon Pump Station project and the ID-4 CRA Crossing sites, a Worker Environmental Awareness Program (WEAP) shall be implemented for work crews by a qualified biologist(s) prior to the commencement of construction activities and prior to site access by workers. Training materials and briefings shall include but not be limited to, discussion of the federal and state Endangered Species Acts, the consequences of noncompliance with 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.

Significance Determination after Mitigation: Less than Significant

Special Status Wildlife

Impact 4.4-1b: The proposed Project could have significant effects on wildlife species because the Projects could have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status wildlife species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

Chino Basin Production Wells, Refurbishment and Treatment System

Based on the lack of trees and limited vegetation on the project site, there is limited foraging and no suitable roosting habitat for bats on the Well 34 site. However, potential foraging and roosting habitat occurs adjacent to the site. The Interstate 10 freeway overpass north of the site, and the large trees in the Wilderness Basin Park to the east of the site provide potential roost sites. Additionally, the San Antonio Channel and Wilderness Basin Park adjacent to the site provide open water and riverine habitats that are important to bats because they offer a permanent water source and are important habitats for foraging.

It is possible that breeding or nonbreeding bats may be present adjacent to the Well 34 site and could be subject to disturbance during construction activities. The appropriately timed disturbance of a nonbreeding roost would not be considered significant; however, the loss of an active maternity roost, even of relatively common species such as the Mexican free-tailed bat would be significant. Based on their known range and available habitat in the project area, bat species that could be impacted by the project include western mastiff bat and pocket free-tailed bat. However, disturbance on the site would be similar to activities routinely occurring in the area including traffic on the neighboring streets and the constant noise of the Interstate 10 freeway. Since construction activities would be temporary and would not significantly increase noise generation at the site or directly affect any roosting sites, impacts to bats would be less than significant.

One special-status mammal, northwestern San Diego pocket mouse, has the potential to occur on the Well 34 site. This species can be found in sandy, herbaceous areas, usually in association with rocks or coarse gravel. Site preparation or construction of the new groundwater treatment system could result in injury or mortality of this species if it is present on site. Therefore, the Project could result in significant impacts to the San Diego pocket mouse. Implementation of Mitigation Measure BIO-3 would reduce potential direct impacts to San Diego pocket mouse to less than significant.

Arlington Production Wells and Pipeline

The construction footprint of the two extraction wells and associated pipelines would be located within existing road right-of-ways. The Arlington Production wells and Pipeline alternative sites support ornamental vegetation and developed uses. Street trees align the existing roads that could support special-status avian species such as Cooper's hawk. Any tree disturbance or removal associated with the well or pipeline construction could disturb Cooper's hawk or other birds/raptors that may nest in the trees, possibly resulting in inadvertent removal of an active nest or nest abandonment. Therefore, the project could result in a potential significant impact on

birds/raptors nesting in trees in the area. Implementation of Mitigation Measure BIO-4 would avoid and minimize potential impacts to Cooper's hawk and other avian species that could nest in the area.

Cannon Pump Station

The project site supports ornamental, barren, brittlebush scrub, and black willow thicket habitats that could potentially support the following special-status wildlife species: silvery legless lizard, California glossy snake, orange-throated whiptail, coastal whiptail, red-diamond rattlesnake, coast horned lizard, Cooper's hawk, Southern California rufous-crowned sparrow, merlin, loggerhead shrike, least Bell's vireo, western yellow bat, San Diego desert woodrat, and Los Angeles pocket mouse.

Construction of a pump station, booster station, associated pipelines, and a new driveway would result in permanent and temporary impacts to native habitats that may support special-status wildlife. An estimated 0.11 acre and 0.46 acre of brittlebush scrub would be permanently and temporarily impacted, respectively. Permanent impacts to black willow thicket can be avoided, but approximately 0.23 acre of this habitat, which is capable of supporting least Bell's vireo, would be temporarily impacted, which would be considered significant. Implementation of Mitigation Measures BIO-2 through BIO-5 would avoid or minimize potential impacts to special-status wildlife, nesting birds, and least Bell's vireo to reduce potentially significant impacts to less than significant.

ID-4 CRA Crossing Refurbishment

The ID-4 CRA Crossing Refurbishment site supports California sagebrush scrub, elderberry scrub, black willow thicket, barren/developed, and open water habitats that could potentially support the following special-status wildlife species: orange-throated whiptail, coastal whiptail, red-diamond rattlesnake, Cooper's hawk, Bell's sage sparrow, white-tailed kite, merlin, loggerhead shrike, coastal California gnatcatcher, least Bell's vireo, northwestern San Diego pocket mouse, pallid San Diego pocket mouse, Stephen's kangaroo rat, hoary bat, western yellow bat, San Diego black-tailed jackrabbit, and Los Angeles pocket mouse.

Refurbishment of the ID-4 CRA Crossing could result in temporary impacts to 0.13 acre of California sagebrush scrub, 0.02 acre of elderberry scrub, and 0.01 acre of black willow thicket as a result of access and/or staging areas, while open water habitat would be avoided. Implementation of Mitigation Measures BIO-2 through BIO-5 would be required to avoid or minimize potential impacts to the special-status wildlife species listed above except for coastal California gnatcatcher and Stephen's kangaroo rat. Mitigation Measures BIO-6 and BIO-7 would require focused surveys for coastal California gnatcatcher and Stephen's kangaroo rat, respectively, to determine species presence/absence and appropriate avoidance and impact minimization measures.

Santa Ana River Arundo Removal

The Santa Ana River Arundo Removal project would remove giant reed within approximately 640 acres along the Santa Ana River between Prado Basin and the State Route 60 crossing in

Riverside. The arundo removal site supports various open water, wetland, floodplain, and riparian habitats that are occupied or potentially occupied by a number of special-status wildlife species. The following special-status wildlife species are known to be present within the proposed arundo removal locations: Santa Ana sucker, arroyo chub, south coast garter snake, yellow-breasted chat, yellow warbler, and least Bell's vireo. Focused surveys for southwestern willow flycatcher most recently conducted in 2017 were negative (SAWA 2017; Zembal et al. 2017); therefore, there is a low potential for this species to occur, and this species is not further addressed in this document.

The following special-status wildlife species have the potential to occupy the site: greenest tiger beetle, Santa Ana speckled dace, western spadefoot, coast range newt, California glossy snake, orange-throated whiptail, coastal whiptail, red-diamond rattlesnake, western pond turtle, two-striped garter snake, Cooper's hawk, tricolored blackbird, long-eared owl, Swainson's hawk, western yellow-billed cuckoo, white-tailed kite, merlin, loggerhead shrike, white-faced ibis, yellow-headed blackbird, northwestern San Diego pocket mouse, pallid San Diego pocket mouse, Stephen's kangaroo rat, western mastiff bat, hoary bat, western yellow bat, San Diego black-tailed jackrabbit, yuma myotis, San Diego desert woodrat, pocketed free-tailed bat, and Los Angeles pocket mouse. Implementation of Mitigation Measures BIO-2 through BIO-6 would be required to avoid or minimize potential impacts to most of the special-status wildlife species listed above.

Arundo removal and monitoring and maintenance activities post removal would be conducted outside of all wetted areas. No equipment or personnel would be allowed to enter the water to perform arundo removal activities. The Santa Ana River in this area is known to support Santa Ana sucker, arroyo chub, south coast garter snake, as well as other sensitive aquatic wildlife species. Hand power tools and tractor-mounted mulching mowers from the river banks would be utilized to remove the invasive plants. Large, mechanized equipment would not be used in the stream. Nevertheless, stream channel substrate consisting of a mosaic of loose sand, gravel, cobble, and boulder substrates necessary to maintain various life stages of Santa Ana sucker as well as other special-status fish, may be temporarily modified or moved when workers are hand cutting the invasive plants or when arundo stands are being mowed. Mitigation Measure BIO-8 would require avoidance of the Santa Ana sucker spawning season, which would minimize potential impacts to Santa Ana suckers as well as other native fish that may occupy the area.

The *Arundo donax* removal activities would occur along the Santa Ana River, within designated critical habitat for Santa Ana sucker, least Bell's vireo, southwestern willow flycatcher, and proposed critical habitat for yellow-billed cuckoo (Figure 4.4-2). The removal of giant reed and other invasive plant species along this segment of the Santa Ana River would enhance existing riparian vegetation and allow for native recruitment of additional riparian habitat. This project would improve the riparian function and quality of the existing habitat for these listed species as well as other wildlife, and would not result in adverse modification of designated or proposed critical habitat. Impacts to critical habitat would be less than significant.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

BIO-3: **Preconstruction Wildlife Surveys**. Project construction at the Chino Basin Production Wells, Refurbishment and Treatment System site, Cannon Pump Station, and ID-4 CRA Crossings sites should avoid, where possible, special status natural communities and other vegetation communities that provide suitable habitat for a special-status species known to occur within the project area. Prior to construction activities, if construction occurs within a special status natural community or other vegetation community that provides suitable habitat for a special status species, a presence/absence survey of any special-status wildlife species must be conducted to determine if the habitat supports any special-status species. If special-status species are determined to occupy any portion of a project site, avoidance and minimization measures shall be implemented such as temporary fencing, inspection of trenches and holes for entrapped wildlife each morning prior to the onset of project construction, inspection of pipes, culverts, and similar construction material for entrapped wildlife, to avoid direct impacts to wildlife to the greatest extent feasible.

BIO-4: **Nesting Avian Species.** If removal of on-site trees and vegetation associated with the proposed project occurs during the non-nesting season (September 1 to January 31 for songbirds; September 1 to January 14 for raptors), no nesting survey or biological monitor are required.

If the removal of on-site trees and vegetation associated with construction at the Chino Basin Production Wells, Refurbishment and Treatment System site, Arlington Pipelines and Wells, Cannon Pump Station, ID-4 CRA Crossings, and Arundo Removal sites occurs during the nesting season (February 1 to August 31 for songbirds; January 15 to August 31 for raptors), a qualified biologist shall conduct a survey prior to vegetation removal activities to determine if there are active nests within the on-site trees and vegetation proposed for removal. If an active nest is not found, no biological monitor is required. If active nests are detected, a minimum buffer (e.g., 300 feet for songbirds or 500 feet for raptors) around the nest shall be delineated and flagged, and no construction activity shall occur within the buffer area until a qualified biologist determines the nesting species have fledged and are no longer active or the nest has failed. The buffer may be modified (i.e., increased or decreased) and/or other recommendations proposed (e.g., a temporary soundwall) as determined appropriate by the qualified biologist to minimize impacts. The qualified biologist shall monitor the removal of on-site trees and vegetation. Nest buffer distance will be based on species, specific location of the nest, the intensity of construction activities, existing disturbances unrelated to the proposed program present in the program area, and other factors.

BIO-5: **Least Bell's Vireo.** If suitable nesting least Bell's vireo habitat is proposed to be removed at the ID-4 CRA Crossing site or Arundo Removal sites during the non-nesting season (September 16 to March 14), no nesting survey or biological monitor is required.

If suitable nesting least Bell's vireo habitat is proposed to be removed during the nesting season (March 15 to September 15), a qualified biologist shall conduct a USFWS protocol survey for least Bell's vireo within suitable nesting habitat the season prior to initiation of work activities to determine their presence or absence within 500 feet of proposed work limits. In accordance with the USFWS survey protocol, surveys shall consist of eight site visits conducted 10 days apart during the period of April 10 to July 31. The results shall be submitted in a report to the USFWS.

If the focused surveys do not indicate the presence of least Bell's vireo, no further mitigation is required. If occupied habitat and/or nesting individuals are determined to be present based on the focused survey, work shall be delayed until the non-nesting season.

BIO-6: **Coastal California Gnatcatcher.** If suitable nesting coastal California gnatcatcher habitat is proposed to be removed at the ID-4 CRA Crossing site during the non-nesting season (July 1 to March 14), no nesting survey or biological monitor is required.

If suitable nesting coastal California gnatcatcher habitat is proposed to be removed during the nesting season (March 15 to June 30), a qualified biologist shall conduct a USFWS protocol survey for coastal California gnatcatcher within suitable nesting habitat the season prior to initiation of work activities to determine their presence or absence within 500 feet of proposed work limits. In accordance with the USFWS protocol for the coastal California gnatcatcher (USFWS 1997), focused surveys shall be conducted by a permitted biologist a minimum of: a) six (6) surveys at least on week apart between March 15-June 30; or b) nine (9) surveys conducted at least two weeks apart between July 1 to March 14. The results shall be submitted in a report to the Corps, USFWS, and CDFW. If an active nest is not found, no biological monitor is required. If active nests are detected, the work shall be delayed until after the nesting season is finished.

BIO-7: **Stephen's Kangaroo Rat.** Prior to the start of construction within potential Stephen's kangaroo rat habitat, a qualified biologist holding a valid section 10(a)(1)(A) permit from USFWS shall inspect the ID-4 CRA Crossing site work area, including stockpiles, for Stephen's kangaroo rat and evidence of activity (i.e., scat, sign, burrows, dust baths). If the species is discovered, project designs will be modified if possible to avoid the occupied areas. If avoidance is infeasible, WMWD will consult with the SKRHCP to initiate coverage under the

SKRHCP that will include pre-construction trapping and relocation as well as habitat compensation pursuant to the SKRHCP requirements.

BIO-8: **Santa Ana Sucker.** Arundo and other invasive plant species removal activities that may affect wetted stream substrate is not allowed during the Santa Ana sucker spawning season (March 1 to July 31).

Significance Determination after Mitigation: Less than Significant

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Sensitive Natural Communities

Impact 4.4-2: The proposed Project could have significant effects on habitat because the projects could have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS.

Chino Basin Production Wells, Refurbishment and Treatment System

The project site is an existing well site that is barren/developed and supports limited ornamental vegetation along the northern perimeter and on the north side of Palo Verde Street. The site does not support any sensitive natural communities. No impact would occur.

Groundwater extraction may lower groundwater levels in areas with groundwater-supported ecosystems. The Well 34 site is located within the Chino Basin. All groundwater extractions in the Chino Basin are regulated under the adjudication by the Chino Basin Watermaster. As part of the overall management of SARCCUP impacts to groundwater management, the Watermaster is responsible for ensuring that groundwater levels are maintained sufficiently to support groundwater-dependent ecosystems. The use of one additional well within the large Chino Basin would not substantially affect groundwater levels in areas that support vegetation, which are typically on the southern border of the Basin near the Prado Basin and Santa Ana River. Through the responsible groundwater basin management imposed by the Watermaster, the refurbishment of Well 34 would not lower groundwater levels sufficiently to impact groundwater-dependent ecosystems.

Arlington Production Wells and Pipeline

The project site supports developed or ornamental vegetation. The site does not support any sensitive natural communities. No impact would occur.

Groundwater extraction may lower groundwater levels in areas with groundwater-supported ecosystems. The Arlington Wells and Pipeline would be located within the Arlington/Riverside Groundwater Basin. Groundwater extractions in the Arlington/Riverside Groundwater Basin are managed by WMWD. As part of the overall management of SARCCUP impacts to groundwater management, WMWD is responsible for ensuring that groundwater levels are maintained sufficiently to support groundwater-dependent ecosystems. The use of one additional well within

the large Arlington/Riverside Groundwater Basin would not substantially affect groundwater levels in areas that support vegetation, which are typically on the southern border of the Basin near the Prado Basin and Santa Ana River. Through the responsible groundwater basin management imposed by WMWD, the Arlington Wells and Pipeline would not lower groundwater levels sufficiently to impact groundwater-dependent ecosystems.

Cannon Pump Station

The project site supports 0.63 acre of black willow thicket, a sensitive natural community. No permanent impacts to black willow thicket are expected, but approximately 0.23 acre could be temporarily disturbed from pipeline installation. Implementation of Mitigation Measure BIO-9 would require revegetation of this sensitive habitat.

ID-4 CRA Crossing Refurbishment

The ID-4 CRA Crossing Refurbishment site supports two sensitive natural communities: elderberry scrub and black willow thicket. Refurbishment of the ID-4 CRA Crossing could result in temporary impacts to 0.02 acre of elderberry scrub and 0.01 acre of black willow thicket as a result of access and/or staging areas. Open water habitat would be avoided. Implementation of Mitigation Measure BIO-9 would require revegetation of elderberry scrub and black willow thicket if impacts are unavoidable.

Santa Ana River Arundo Removal

The project site supports approximately 1,746 acres of native, woody riparian habitat (a sensitive natural community) that would be enhanced through eradication of giant reed and other invasive plants. As previously discussed, techniques used include hand removal within mixed stands of native and non-native vegetation, while pure stands of invasive plants would likely require mulching mowers. The arundo removal would improve riparian habitat within the watershed by removing invasive plant species to allow for native recruitment.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

BIO-9: **Revegetation Plan.** During construction at the Cannon Pump Station site and ID-4 CRA Crossing site, sensitive natural communities and native habitats shall be avoided to the extent feasible. If impacts to sensitive natural communities are unavoidable, prior to vegetation removal or disturbance, a qualified biologist shall be on site to establish and mark limits of sensitive habitats to be avoided to the extent feasible. The biological monitor shall document and quantify any impacts to sensitive habitats to determine the extent and type of habitats required for restoration. Restoration of sensitive habitat vegetation shall occur on the project sites if feasible.

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. Appropriate restoration measures shall be prescribed based on site location, slope, and remoteness. The plan shall identify cover standards that shall be developed for each plant community target, and cover values established for each layer (i.e., herb, shrub, and/or tree layers). The plan shall identify the quantity and quality of habitats to be restored on site.

The project proponent shall implement the revegetation plan following construction activities to ensure no permanent net loss of sensitive habitats would occur.

Significance Determination after Mitigation: Less than Significant

Implementation of Mitigation Measures BIO-2 and BIO-11 would require worker environmental awareness training, and revegetation of unavoidable impacts to sensitive natural communities.

Federally Protected Wetlands

Impact 4.4-3: The proposed Project could have significant effects on wetlands because the projects could have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Chino Basin Production Wells, Refurbishment and Treatment System

The project site does not support any wetlands or other potentially jurisdictional resources. No impact would occur.

Arlington Production Wells and Pipeline

The project site does not support any wetlands or other potentially jurisdictional resources since the site consists of existing roadways. However, it is possible that underground culverts or storm drains that may cross the pipeline alignments might need to be modified or relocated to accommodate the proposed pipeline. Underground culverts or storm drains can potentially be considered waters of the U.S.; therefore, impacts to these waters could be regulated under Section 404 and 401 of the Clean Water Act as well as Section 1602 of the California Fish and Game Code. Best Management Practices (BMPs) would be incorporated into the design and construction phase of the project to ensure that no pollutants or silt drain into a federal or state protected jurisdictional habitat pursuant to the General Construction Permit SWPPP. Implementation of BMPs to comply with the construction SWPPP would ensure that impacts to wetlands and riparian habitats during construction would be avoided.

Cannon Pump Station

The project site does not appear to support any wetlands or drainage features. However, based on review of the National Wetlands Inventory, a blue-line stream is mapped on the site (USFWS 2018). Pursuant to Mitigation Measure BIO-10, prior to construction, a jurisdictional delineation would be required to determine whether the drainage is a water of the United States. If the drainages are federally jurisdictional a 404 Permit from the USACE would be required. If the drainages are determined to be state jurisdictional features, a Streambed Alteration Agreement would be required from the CDFW. However, BMPs would be incorporated into the design and construction phase of the project to ensure that no pollutants or silt drain into a federal or state protected jurisdictional habitat would occur pursuant to the General Construction Permit SWPPP. Implementation of BMPs to comply with the construction SWPPP and compliance with required permit conditions would ensure that impacts to wetlands and riparian habitats during construction would be less than significant. Impacts would be reduced to less than significant.

ID-4 CRA Crossing Refurbishment

Based on the biological reconnaissance survey, the ID-4 CRA Crossing Refurbishment site does support open water habitat and riparian vegetation that could be considered jurisdictional resources. Specifically, habitats mapped as Elderberry Scrub, Black Willow Thicket, and Open Water within the ID-4 CRA Crossing Refurbishment site (Figure 4.4-1d) may be subject to the jurisdiction of the USACE, Santa Ana RWQCB, and/or CDFW. However, refurbishment of the existing pipeline would avoid open water habitat; therefore, a permit from the USACE or Santa Ana RWQCB would not be required. Any habitat disturbance would be limited to those located along the embankments, on each side of the crossing. This project could result in temporary impacts to 0.02 acre of elderberry scrub and 0.01 acre of black willow thicket, which are sensitive natural communities that are also subject to Section 1602 of the California Fish and Game Code. Impacts to these habitats would require a streambed alteration agreement from CDFW prior to disturbance. Mitigation Measure BIO-10 would ensure that federally jurisdictional features obtain a 404 Permit from the USACE and any state jurisdictional features would obtain a Streambed Alteration Agreement from the CDFW. Implementation of Mitigation Measure BIO-10 would ensure that impacts would be less than significant.

Santa Ana River Arundo Removal

The Santa Ana River is a known water of the U.S. because it flows into the Pacific Ocean, and all of the creeks and drainages that are tributary to the Santa Ana River fall under the jurisdiction of the USACE, RWQCB, and/or CDFW. Although a formal wetland delineation has not been conducted for the arundo removal project area, many areas within the arundo removal site along the Santa Ana River and Prado Basin would be subject to the jurisdiction of the USACE, Santa Ana RWQCB, and/or CDFW, including the areas mapped as Wetland and Woody Riparian Mix (Figure 4.4-1e). However, giant reed would be cut and the root balls would be left intact to avoid uprooting vegetation. Further, hand tools or mowers would be used to cut the giant reed such that heavy equipment in the stream would be avoided. Therefore, based on these methods of Arundo removal, water quality impacts (i.e., increased sedimentation) are minimized, and there would be no discharge of dredged or fill material into waters of the U.S. As such, a Section 404/401 permit

from the USACE and Santa Ana RWQCB would not be required. However, a Streambed Alteration Agreement from CDFW would be required for arundo removal activities.

Implementation of Mitigation Measure BIO-2 would train construction workers to be able to distinguish between native riparian plants and invasive plants, which would avoid or minimize impacts to sensitive wetland/riparian vegetation. Implementation of BMPs to comply with the construction SWPPP and compliance with required permit conditions would ensure that impacts to wetlands and riparian habitats during construction would be less than significant. The SARCCUP arundo removal project would improve wetland and riparian habitat within the watershed by removing invasive plant species to allow for native recruitment. Impacts would be less than significant.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

BIO-10: **Jurisdictional Wetlands and Waters.** Prior to implementation of the Cannon Pump Station Project, a jurisdictional delineation of wetlands and water courses shall be conducted for the purposes of identifying features or habitats that would be subject to the jurisdiction of the USACE, Santa Ana RWQCB, and CDFW. The findings shall be included in a jurisdictional delineation report suitable for submittal to these agencies for obtaining a Section 404 Clean Water Act permit (CWA), Section 401 Water Quality Certification (WQC), Waste Discharge Requirements (WDR), and/or streambed alteration agreement (SAA).

Prior to activities that would result in the discharge of fill or dredged material within waters of the U.S., a Section 404 CWA permit shall be obtained from the USACE and a Section 401 WQC shall be obtained from the Santa Ana RWQCB. Prior to activities within streams, ponds, seeps or riparian habitat, or use of material from a streambed, the project applicant shall obtain a WDR for impacts to waters not subject to the CWA, provide written notification to CDFW pursuant to Section 1602 of the Fish and Game Code, ensure the notification is complete as provided in Section 1602, and comply with the terms of conditions of any agreement CDFW may issue in response to the notification.

Significance Determination after Mitigation: Less than Significant

Wildlife Corridors and Nursery Sites

Impact 4.4-4: The proposed Project could have significant effects on the movement of species because the projects could interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Chino Basin Production Wells, Refurbishment and Treatment System

Implementation of the proposed project would occur within the boundaries of the existing treatment facility. Based on the lack of trees and limited non-native vegetation on the Well 34 site, there is limited suitable nesting habitat for birds covered under the Migratory Bird Treaty Act (MBTA) that may be moving through the project area. However, ground-nesting birds such as killdeer (*Charadrius vociferous*) could nest on site. Implementation of BIO-4 would require a preconstruction nesting bird survey to avoid and minimize impacts to nesting birds.

In addition, because the facility is fenced and there are no streams or channels on the project site, the proposed project would not impact the movement of native resident or migratory fish.

Arlington Production Wells and Pipeline

The proposed pipeline alternatives would be located underground and within existing roadway rights-of-way. However, pipeline construction activities such as trenching could impact nesting birds or raptors protected under the MBTA or their active nests through indirect noise impacts, or if tree disturbance/removal is required for pipeline installation. Implementation of BIO-4 would require a preconstruction nesting bird survey to avoid and minimize impacts to nesting birds.

There are no streams or channels on the Arlington site; therefore, this project would not impact the movement of native resident or migratory fish.

Cannon Pump Station

The project site supports large trees and vegetation that may be utilized by nesting birds and raptors protected under the MBTA. Potential impacts would be similar to those described for the Arlington project. Implementation of BIO-4 would require a preconstruction nesting bird survey to avoid and minimize impacts to nesting birds.

There is no suitable fish habitat on the project site; therefore, this project would not impact the movement of native resident or migratory fish.

ID-4 CRA Crossing Refurbishment

The project site supports large trees and vegetation that may be utilized by nesting birds and raptors protected under the MBTA. Potential impacts would be similar to those described for the Arlington project. Implementation of BIO-4 would require a preconstruction nesting bird survey to avoid and minimize impacts to nesting birds.

While fish may occupy the open water habitat, open water habitat would be avoided. Therefore, this project would not impact the movement of native resident or migratory fish.

Santa Ana River Arundo Removal

As previously discussed, the Santa Ana River, including the Prado Basin Reservoir, provides an important wildlife linkage between the San Bernardino Mountains and all open space between there and the Pacific Ocean. Therefore, the arundo removal site is an important corridor for aquatic wildlife movement, migratory birds, as well as numerous terrestrial wildlife species. The site can also be considered a wildlife nursery site since wildlife species such as least Bell's vireo and Santa Ana sucker are known to breed or spawn. Potential impacts would be similar to those discussed in Impact 4.4-1b.

Implementation of Mitigation Measure BIO-4 would avoid or minimize impacts to migratory birds. Implementation of Mitigation Measure BIO-8 would require avoidance of the Santa Ana sucker spawning season, which would minimize potential impacts to Santa Ana suckers as well as other native fish that may occupy or move through the area.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

Implementation of Mitigation Measure BIO-4 and BIO-8 is required.

Significance Determination after Mitigation: Less than Significant

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Local Policies or Ordinances Protecting Biological Resources

Impact 4.4-5: The proposed Project would not have significant effects on biological resources because the program could have conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Chino Basin Production Wells, Refurbishment and Treatment System

The site does not support any native habitats or sensitive natural communities. Therefore, this project would not conflict with any local policies or ordinances protecting biological resources within the City of Montclair. No impact would occur.

Arlington Production Wells and Pipeline

The site does not support any native habitats or sensitive natural communities but does support street trees that may be protected under the City of Riverside's tree preservation ordinance. The trees may be trimmed, removed, or relocated to accommodate the pipeline installation. The contractors would comply with local tree ordinances where applicable. As a result, impacts would be less than significant.

Cannon Pump Station

The project supports native habitats, sensitive natural communities, and native trees. The contractors would comply with local tree ordinances where applicable. As a result, impacts would be less than significant.

ID-4 CRA Crossing Refurbishment

The project supports native habitats, sensitive natural communities, and native trees. The contractors would comply with local tree ordinances where applicable. As a result, impacts would be less than significant.

Santa Ana River Arundo Removal

The Santa Ana River Arundo Removal project supports native habitats, sensitive natural communities, and native trees. Impacts to these biological resources may conflict with the County of Riverside General Plan and tree removal permit requirements. The contractors would comply with local tree ordinances where applicable. As a result, impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Conservation Plans

Impact 4.4-6: The proposed Project would not have significant effects on a conservation plan because the projects could have conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Chino Basin Production Wells, Refurbishment and Treatment System

The site is not located within an adopted habitat conservation plan or natural community conservation plan. Therefore, the project would not conflict with such a plan.

Arlington Production Wells and Pipeline

The site is located within the Western Riverside County MSHCP; however, the project site is not located within any conserved lands or criteria cells (RCA 2018). Further, the project site consists of existing developed roads and does not support any native habitat. The project would not conflict with the Western Riverside County MSHCP.

Cannon Pump Station

The site is located within the Western Riverside County MSHCP, and supports native habitats. While, the project site is not located within any conserved lands or criteria cells, potential impacts to native habitat may conflict with the provisions of the Western Riverside County MSHCP. Mitigation Measures BIO-5 through BIO-8 would ensure that no impacts to listed species covered in the MSHCP or SKRHCP would occur and no permanent loss of habitat would occur. Therefore, the project would be consistent with the applicable conservation plans. Impacts would be less than significant.

ID-4 CRA Crossing Refurbishment

The site supports native habitats and is located within the Western Riverside County MSHCP and SKRHCP. While, the project site is not located within any conserved lands or criteria cells, potential impacts to native habitat may occur. Mitigation Measures BIO-5 through BIO-8 would ensure that no impacts to listed species covered in the MSHCP or SKRHCP would occur and no permanent loss of habitat would occur. Therefore, the project would be consistent with the applicable conservation plans. Impacts would be less than significant.

Santa Ana River Arundo Removal

The project is located within the Western Riverside County MSHCP and the proposed Upper SAR HCP. The project would improve the riparian habitat conditions within the Santa Ana River watershed, thereby enhancing habitat conditions for federally and state listed wildlife species, and other wildlife, known to occupy the project area. Habitat restoration and enhancement is in line with the objectives of the Western Riverside County MSHCP and Upper SAR HCP, and would not conflict with the provisions of either HCP. No impact would occur.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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4.4.4 References

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4.5 Cultural Resources

This chapter addresses the potential impacts of the proposed Program to cultural resources in accordance with the significance criteria established in Appendix G of the *CEQA Guidelines.*

Cultural resources include prehistoric and historic sites, structures, districts, places, and landscapes, or any other physical evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious or any other reason. Under CEQA, paleontological resources, although not associated with past human activity, are grouped within cultural resources. For the purposes of this analysis, cultural resources may be categorized into the following groups: archaeological resources, historic resources (including architectural/engineering resources), contemporary Native American resources, human remains, and paleontological resources.

4.5.1 Existing Setting

Regional Setting

Prehistoric Setting

The chronology of Southern California is typically divided into three general time periods: the Early Holocene (11,000 to 8,000 before present [B.P.]), the Middle Holocene (8,000 to 4,000 B.P.), and the Late Holocene (4,000 B.P. to A.D. 1769). Within this general timeframe, the archaeology of Southern California is typically described in terms of cultural "complexes." A complex is a specific archaeological manifestation of a general mode of life, characterized archaeologically by technology, particular artifacts, economic systems, trade, burial practices, and other aspects of culture.

While it is not certain when humans first came to California, their presence in Southern California by about 11,000 B.P has been well documented. At Daisy Cave, on San Miguel Island, cultural remains have been radiocarbon dated to between 11,100 and 10,950 years B.P. (Byrd and Raab 2007). In western Riverside County, few Early Holocene sites are known to exist. One exception is site CA-RIV-2798, which contains deposits dating to as early as 8,580 cal. B.P. (Grenda 1997). During the Early Holocene, the climate of Southern California became warmer and more arid and the human population, residing mainly in coastal or inland desert areas, began exploiting a wider range of plant and animal resources.

The primary Early Holocene (11,000 to 8,000 B.P.) cultural complex in Southern California is the San Dieguito Complex, which dates between approximately 10,000 and 8,000 B.P. The people of the San Dieguito Complex inhabited the chaparral zones of southwestern California, exploiting the plant and animal resources of these ecological zones (Warren 1967). Leaf-shaped and large-stemmed projectile points, scraping tools, and crescentics are typical of San Dieguito Complex material culture.

During the Middle Holocene (8,000 to 4,000 B.P.), there is evidence for the processing of acorns for food and a shift toward a more generalized economy. Around 7,000 B.P., millingstone

cultures appeared, characterized by the collection and processing of plant foods, particularly acorns, the hunting of a wider variety of game animals, and trade with neighboring regions intensified (Byrd and Raab 2007). A number of Middle Holocene sites are located in the San Bernardino Mountains and Cajon Pass, including the Sayles Complex and the Crowder Canyon sites (Brock et al. 1986).

The Middle Holocene La Jolla Complex is essentially a continuation of the San Dieguito Complex. La Jolla groups lived in chaparral zones or along the coast, often migrating between the two. La Jolla peoples produced large, coarse stone tools, but also produced well-made projectile points, and milling slabs. The La Jolla Complex represents a period of population growth and increasing social complexity, and it was also during this period that the first evidence of the exploitation of marine resources and the grinding of seeds for flour appears, as indicated by the abundance of millingstones in the archaeological record (Byrd and Raab 2007).

Contemporary with the La Jolla Complex, the Pauma Complex has been defined at coastal and adjacent inland sites in inland Riverside County (True 1958). The Pauma Complex is similar in technology to the La Jolla Complex; however, evidence of coastal subsistence is absent from Pauma Complex sites (Moratto 1984). The Pauma and La Jolla Complexes may either be indicative of separate inland and coastal groups with similar subsistence and technological adaptations, or, alternatively, may represent inland and coastal phases of one group's seasonal rounds. The latter hypothesis is supported by the lack of hidden and deeply buried artifacts at Pauma sites, indicating that these sites may have been temporary camps for resource gathering and processing.

During the Late Holocene (4,000 B.P. to A.D. 1769), native populations of Southern California were becoming less mobile and populations began to gather in small sedentary villages with satellite resource-gathering camps (Byrd and Raab 2007). Evidence indicates that the overexploitation of larger, high-ranked food resources may have led to a shift in subsistence towards a focus on acquiring greater amounts of smaller resources, such as shellfish and small-seeded plants (Byrd and Raab 2007). Around 1000 B.P., an episode of sustained drought, known as the Medieval Climatic Anomaly (MCA), occurred. While the effects of this environmental change on prehistoric populations are still being debated, it did lead to a change in subsistence strategies in response to the substantial stress on resources (Jones and Schwitalla 2008).

Although the intensity of trade had already been increasing through the Late Holocene, it reached its zenith in the Late Holocene, with asphaltum (tar), seashells, and steatite being traded from Southern California to the Great Basin. Major technological changes appeared as well, particularly with the advent of the bow and arrow, which largely replaced the use of the dart and atlatl (Byrd and Raab 2007). Small projectile points, ceramics, including Tizon brownware pottery, and obsidian from Obsidian Butte (Imperial County), are all representative artifacts of the Late Holocene.

Ethnographic Setting

The SARCCUP area encompasses regions associated with two ethnographic groups: the Gabrielino-Tongva and the Cahuilla. The following paragraphs provide a detailed description for both groups.

Gabrielino-Tongva

The Chino Basin Production Wells, Refurbishment and Treatment System project and the western portion of the Arundo Removal project components are located in a region traditionally occupied by the Takic-speaking Gabrielino-Tongva. The term "Gabrielino" is a general term that refers to those Native Americans who were administered by the Spanish at the Mission San Gabriel Arcángel. Many contemporary Gabrielino identify themselves by the name "Tongva." Prior to European colonization, the Gabrielino-Tongva occupied a diverse area that included: the watersheds of the Los Angeles, San Gabriel, and Santa Ana rivers; the Los Angeles basin; and the islands of San Clemente, San Nicolas, and Santa Catalina (Kroeber 1925). Their neighbors included the Chumash to the north, the Juaneño to the south, and the Serrano and Cahuilla to the east. The Gabrielino-Tongva are reported to have been second only to the Chumash in terms of population size and regional influence (Bean and Smith 1978). The Gabrielino language was part of the Takic branch of the Uto-Aztecan language family.

The Gabrielino-Tongva were hunter-gatherers who lived in permanent communities located near a stable water and food supply. Community populations generally ranged from 50 to 100 inhabitants, although larger settlements may have existed. The Gabrielino-Tongva are estimated to have had a population numbering around 5,000 in the pre-contact period (Kroeber 1925). Villages are reported to have been the most abundant in the San Fernando Valley, the Glendale Narrows area north of downtown, and around the Los Angeles River's coastal outlets (Gumprecht 2001).

Subsistence consisted of hunting, fishing, and gathering. Small terrestrial game were hunted with deadfalls, rabbit drives, and by burning undergrowth, while larger game such as deer were hunted using bows and arrows. Fish were taken by hook and line, nets, traps, spears, and poison (Bean and Smith 1978). The primary plant resources were the acorn, gathered in the fall and processed in mortars and pestles, and various seeds that were harvested in late spring and summer and ground with manos and metates. The seeds included chia and other sages, various grasses, and islay or holly-leafed cherry.

Gabrielino-Tongva society was characterized by patrilineal, non-localized clans, each clan consisting of several lineages. The Gabrielino-Tongva inhabited large circular, domed houses constructed of willow poles thatched with tule (Bean and Smith 1978). These houses could sometimes hold up to 50 people. Other village structures of varying sizes served as sweathouses, ceremonial enclosures, and granaries.

At the time of Spanish contact, many Gabrielino-Tongva practiced a religion that was centered around the mythological figure *Chinigchinich* (Bean and Smith 1978). This religion may have been relatively new when the Spanish arrived, and was spreading at that time to other neighboring Takic groups. The Gabrielino-Tongva practiced both cremation and inhumation of their dead. A

wide variety of grave offerings, such as stone tools, baskets, shell beads, projectile points, bone and shell ornaments, and otter skins, were interred with the deceased.

Coming ashore on Santa Catalina Island in October of 1542, Juan Rodriguez Cabrillo was the first European to make contact with the Gabrielino-Tongva; the 1769 expedition of Portolá also passed through Gabrielino-Tongva territory (Bean and Smith 1978). Native Americans suffered severe depopulation and their traditional culture was radically altered after Spanish contact. Nonetheless, Gabrielino-Tongva descendants still reside in the greater Los Angeles and Orange County areas and maintain an active interest in their heritage.

Cahuilla

The Arlington, the Cannon Pump Station, the ID-4 CRA Crossing Refurbishment, and the eastern portion of the Arundo Removal project areas are located in a region traditionally occupied by the Cahuilla. The Cahuilla spoke a language belonging to the Cupan group of the Takic subfamily (Bean 1978). The Cahuilla are generally divided into three groups based on their geographic setting: the Pass Cahuilla of the Beaumont/Banning area; the Mountain Cahuilla of the San Jacinto and Santa Rosa Mountains; and the Desert Cahuilla from the Coachella Valley, as far south as the Salton Sea. The Cahuilla occupied territories that ranged from low or moderately low desert to the mountain regions of the Transverse and Peninsular ranges.

Villages were placed near canyons that received substantial precipitation or were adjacent to streams and springs (Bean 1978). House structures of the Cahuilla ranged from “brush shelters to dome-shaped or rectangular structures 15–20 feet long” (Bean 1978). Cahuilla social structure revolved around clans and exogamous moieties (components connected through inter-marriage). Hunting, in conjunction with the exploitation of a variety of available resources, governed the Cahuilla subsistence strategy. The material culture of the Cahuilla was extensive and varied, and included pottery, ornamental items, and a number of knapped stone tools.

Prior to European contact, population estimates for the Cahuilla range from 3,600 to as high as 10,000 persons. Due to European diseases, such as smallpox, the Cahuilla population was decimated during the 19th century. However, unlike other Native American populations in Southern California, the Cahuilla were able to retain their autonomy even after the arrival and increasing control of European explorers and the settling governments that followed. It was not until 1891 that the Cahuilla culture and its population began to succumb to the pressure of European and, later, United States governing bodies (Bean 1978).

Today, there are nine federally recognized tribes in California who share Cahuilla Tribal affiliation, language, and culture, including the Agua Caliente Band of Cahuilla Indians (Agua Caliente), Augustine Band of Cahuilla Indians (Augustine), Cabazon Band of Mission Indians (Cabazon), Cahuilla Band of Mission Indians, Los Coyotes Band of Cahuilla and Cupeño Indians (Los Coyotes), Morongo Band of Mission Indians (Morongo), Ramona Band of Cahuilla Indians (Ramona), Santa Rosa Band of Cahuilla Indians (Santa Rosa), and Torres-Martinez Desert Cahuilla Indians (Torres-Martinez).

Historic Setting

The first European presence in what is now Southern California came in 1542, when Juan Rodriguez Cabrillo led an expedition along the coast. Europeans did not return until 1769, when the expedition of Gaspar de Portola traveled overland from San Diego to San Francisco. Juan Bautista de Anza is credited with the discovery of an inland route from Sonora to the northern coast of California in 1774, bringing him through much of present-day Riverside and San Bernardino counties (Greene 1983; Rolle 2003). With the opening of the overland route, Spanish pueblos were established, evolving into the Spanish system of governance.

In the late 18th century, the Spanish began establishing missions in California and forcibly relocating and converting native peoples (Horne and McDougall 2003). The purpose of the missions was to encourage, by any means necessary, the assimilation of Native populations to adopt the Spanish custom, language, and religion. The mission strategy relied upon an agricultural economy and as such, locations selected for the construction of a mission depended upon three factors: arable soil for crops, an adequate supply of fresh water, and a large local Indian population for labor (Rolle 2003).

In 1821 Mexico, which included much of present-day California, became independent from Spain, and during the 1820s and 1830s the California missions were secularized. Mission property was supposed to have been held in trust for the Native Californians, but instead was handed over to civil administrators and then into private ownership as land grants. After secularization, many former Mission Indians were forced to leave the Missions and seek employment as laborers, ranch hands, or domestic servants (Horne and McDougall 2003). Many ranchos continued to be used for cattle grazing by settlers during the Mexican Period. Hides and tallow from cattle became a major export for Californios (native Hispanic Californians), many of whom became wealthy and prominent members of society.

In 1846, the Mexican-American War broke out. Mexican forces were eventually defeated in 1847 and Mexico ceded California to the United States as part of the Treaty of Guadalupe Hildalgo in 1848. California officially became one of the United States in 1850. While the treaty recognized the right of Mexican citizens to retain ownership of land granted to them by Spanish or Mexican authorities, the claimant was required to prove their right to the land before a patent was given. The process was lengthy and generally resulted in the claimant losing at least a portion of their land to attorney's fees and other costs associated with proving ownership (Starr 2007).

When the discovery of gold in Northern California was announced in 1848, a huge influx of people from other parts of North America flooded into California. The increased population provided an additional outlet for the cattle industry that had was established during the Spanish and Mexican periods. However, a devastating flood in 1861, followed by droughts in 1862 and 1864, led to a rapid decline of the cattle industry; over 70 percent of cattle perished during these droughts (McWilliams 1946; Dinkelspiel 2008). This event, coupled with the burden of proving ownership of their lands, caused many Hispanic-Californian landowners to lose their lands during this period (McWilliams 1946). Former ranchos were subsequently subdivided and sold for agriculture and residential settlement.

The first transcontinental railroad was completed in 1869, connecting San Francisco with the eastern United States. Newcomers poured into Northern California. Southern California experienced a trickle-down effect, as many of these newcomers made their way south. The Southern Pacific Railroad extended this line from San Francisco to Los Angeles in 1876. The second transcontinental line, the Santa Fe, was completed in 1886 and caused a fare war, driving fares to an unprecedented low. Settlers flooded into Southern California and the demand for real estate skyrocketed. As real estate prices soared, land that had been farmed for decades outlived its agricultural value and was sold to become residential communities. The subdivision of the large ranchos took place during this time (McWilliams 1946; Meyer 1981).

Local Setting

Santa Ana River

SARCCUP would include Arundo removal along segments of the Santa Ana River and its tributaries. Proposed activities along the Santa Ana River would occur at locations between Prado Basin and Interstate 10 Freeway.

During the Late Prehistoric Period it is estimated that the Santa Ana River watershed supported a population of 15,000 individuals associated with the Gabrielino-Tongva, Luiseño, and Serrano ethnographic groups (Mitchell 2006). European exploration of the watershed began in 1769 when Portola's expedition established a campsite at the confluence of the river and Santiago Creek in present-day Orange County. Portola's group named the river after the Santa Ana Mountains, which were named in honor of Saint Anne's Day (City of Santa Ana 2006; Mitchell 2006). During the Spanish Period, Mission San Juan Capistrano claimed much of the land in the lower watershed of the river and Mission San Gabriel claimed the upper watershed, which encompasses the segments of the river that would be subject to habitat restoration as part of the proposed Project (City of Santa Ana 2016).

During the Mexican Period a number of ranchos were granted that bordered or bisected the upper watershed of the Santa Ana River including: Rancho La Sierra de Sepulveda granted in 1846 to Vincent Sepulveda and located in the vicinity of the present-day cities of Norco and western Riverside; Rancho La Sierra de Yorba granted in 1846 to Bernardo Yorba and located in the vicinity of present-day Jurupa Valley; Rancho El Rincon granted to Juan Bandini in 1839 and located within present-day Prado Basin; Rancho Santa Ana del Chino granted in 1841 to Antonio Marie Lugo and located in the vicinity of present-day Chino Hills; and Rancho San Bernardino granted in 1842 to Jose del Carmen Luco which encompassed much of present-day San Bernardino Valley (Mitchell 2006). The economies of the ranchos largely centered around cattle, supplying hides and tallow which were the primary Californian exports during the Mexican Period.

With the gold rush of 1849 and California's incorporation into the United States in 1850 the Santa Ana River watershed changed dramatically as American immigrants trickled down from the Northern Californian gold fields and began to establish towns and farms along the river and its tributaries, which provided reliable water sources for irrigation (Mitchell 2006). Lumber for the construction of the new towns was provided by the burgeoning timber industry in the San

Bernardino Mountains. However, during a series of floods that occurred in 1862, the unintended consequences of the clear cutting of timber were realized as a 300,000-cubic-foot debris flow washed down from the mountains and into the river, destroying many towns downstream (Mitchell 2006). During the 20th century the periodic flooding of the river became of greater concern as the population surrounding it increased. In 1938, a flash flood that left 19 dead and 2,000 homeless served as the impetus for the construction of the Prado Dam (City of Santa Ana 2006). The construction of the dam paved the way for a building boom after World War II, with residential subdivision replacing agricultural operations (City of Santa Ana 2006).

Chino Basin

SARCCUP facilities within the Chino Basin would include a Groundwater Treatment System at an existing Well 34 site. The well refurbishment and various treatment/well facilities would be implemented within the City of Montclair.

City of Montclair

Montclair is a small city located northeast of Pomona (incorporated in 1888) and west of Ontario (incorporated in 1891). During the latter part of the 19th century the area featured very little development and much of the land was used for livestock grazing. The first development in the area was undertaken by Edward Fraser in 1887, who built a residence, store buildings, a hotel, and livery stable (Reeder Heritage Foundation 2010). Fraser named his town Marquette and attempted to lure investors to the town with train excursions and advertisements, which stated "there was 'an abundant supply of pure water.'" However, it was not until approximately 20 years later when Emil Firth, a land speculator, purchased a thousand acres for $250,000 that the town became successful (Reeder Heritage Foundation 2010).

Firth began to subdivide the land into large 5- to 10-acre lots. Like many other towns in the foothills of the San Gabriel Mountains, the land was used to cultivate citrus (Reeder Heritage Foundation 2010). A 1908 *Los Angeles Times* advertisement stated that one of Firth's towns, Monte Vista, had "two railroad lines, an electric line surveyed, [and] three packing houses in operation," and that everything had already been done for the prospective buyer, including "piped water, road construction, [and] building the neighborhood" (Los Angeles Times 1908). Firth is also accredited with constructing some of the earliest reservoirs for irrigation in the area (Reeder Heritage Foundation 2010).

After World War II, Monte Vista remained dedicated to citrus production, but with the influx of veterans the town began to grow. In the late 1950s, Interstate 10 was completed, connecting Monte Vista with the City of Los Angeles. In 1956, the City of Monte Vista was incorporated; however, in 1958, Monte Vista was forced to change its name to Montclair due to confusion with Monte Vista in Northern California (Reeder Heritage Foundation 2010).

Riverside-Arlington Basin

City of Riverside

Historic settlement in Riverside County was anchored by the settlement of its primary city, Riverside. Riverside began as a "colony" established by easterners John W. North and James P. Greves. They, along with a group of associates, arrived in California in 1870 seeking a suitable site for the establishment of a new town based on ideals of clean living and rectitude inspired by North's fiery Methodist upbringing. After scouting numerous sites throughout the state, they reached the future site of Riverside. Deciding to establish their town there, North and several other principals established the Southern California Colony Association. Los Angeles surveyors Goldsworthy and Higbie soon arrived to establish a mile-square town site. This remains the center of Riverside (Brown 1985).

Canal construction commenced to transport water from the adjacent Santa Ana River to the new town's farmland. Citrus trees were soon planted and, with the arrival of navel orange trees secured by prominent Riverside resident Eliza Tibbets in 1874, the citrus industry boomed in the ideal climate of Riverside. Disputes over water rates led to the incorporation of Riverside as a city in 1883. Ten years later, Riverside County was incorporated from portions of San Bernardino and San Diego counties.

Combined with the arrival of the railroad, the success of Riverside as a citrus and resort town both made and attracted many wealthy residents and visitors to the area. Thanks to the development of refrigerated railroad cars, by 1895 Riverside had the highest per capita income in the United States. The railroads were a key driver of settlement throughout the region. By granting access to a large market for citrus, the railroad sparked the climate of growth. The first major railroad to arrive in what would become Riverside County was the Southern Pacific in the mid-1870s. Its easterly journey from Los Angeles to Riverside and the rest of the county bolstered the population and economies of existing communities along the tracks. By 1886 the Santa Fe (then called the Atlantic and Pacific) began to arrive in the area, laying track in the north-south direction to compete with its rival the Southern Pacific. This boom in railroad construction saw the long-waited expansion of feeder lines to many more remote communities in the Riverside area, further growing the region (Brown 1985). However, with the rise of the automobile after World War II, the influence of the railroad on the city's economic growth declined. While rail was still used to ship product, it had ceded its primacy in the development of Riverside County to the automobile.

Riverside, like much of California, experienced an economic boom in the years following World War II. It "expanded and diversified its industries, became a center of higher education, trebled in population" and annexed large swaths of unincorporated land into the City (Patterson 1971). Between 1950 and 1960, the population of Riverside increased by 80 percent to 83,714 (Patterson 1971). Numerous industries either grew or established themselves in the region, one of which was home building. Southern California's "longest and most substantial" boom in home building and subdividing occurred in 1950, in tandem with the rise of automobile, which itself grew in importance as an industry with the establishment of numerous automobile dealerships and commercial areas oriented toward the automobile (Patterson 1971). The establishment of both the

Riverside branch of the University of California in 1954 and California Baptist University in 1950 to meet the greater demand for college education, along with increases in enrollment at Riverside City College and La Sierra University, increased the importance of the higher education industry (Patterson 1971). Another industry to expand in Riverside was the banking industry, exemplified best by Citizens National Bank, which, along with other banks such as Bank of America, opened numerous branches in the Riverside area. The growth of banking was linked to the rise in home building and commercial growth, and in turn to population growth (Patterson 1971). Many other industries grew in the Riverside area. Aircraft manufacturer Rohr Corporation arrived in 1952; maker of rocket guidance instruments Bourns Incorporated arrived in 1950. W. Atlee Burpee Seed Company's western distribution center opened in Riverside, as did large accessory-maker Hoffman & Son. Numerous smaller manufacturers and service providers also established themselves in Riverside in this era.

ID-4 Colorado River Aqueduct Crossing Refurbishment

The ID-4 Colorado River Aqueduct (CRA) Crossing Refurbishment is located east of Lake Mathews and directly adjacent to the Colorado River Aqueduct. The aqueduct was constructed in the 1930s by the Metropolitan Water District of Southern California in order to transport water from the Colorado River to the Los Angeles metropolitan area. The aqueduct stretches from Lake Havasu on the Colorado River to Lake Matthews, south of Riverside (Hamilton and Beedle 2005). Construction of the aqueduct began in 1933 and the first delivery of water occurred in 1941. Approximately 3,500 men and women were employed in constructing the aqueduct during the Depression era. The completed aqueduct crosses 242 miles of desert and delivers approximately one billion gallons of water a day. Related projects included roads and electrical power transmission lines. Most project-related work was conducted out of temporary camps; however, permanent structures, such as the Iron Mountain pumping station, supported a higher number of longer-lasting settlements. The aqueduct is still in use.

Identification of Resources

To identify cultural resources within the respective project areas, archival research and cultural resources surveys were conducted. Archival research included records searches conducted at the California Historical Resources Information System (CHRIS) South Central Coastal Information Center (SCCIC) and Eastern Information Center (EIC) on July 9 and July 25, 2018, respectively, a review of historic topographic maps and aerial photographs, and a paleontological database records search conducted by the Los Angeles County Natural History Museum (LACM) on July 3, 2018.

The CHRIS records searches included a review of all previously recorded cultural resources and studies within a 0.25-mile radius of the Arundo Removal project and 0.5-mile radii of the remaining four project areas. In addition, the California Points of Historical Interest (PHI), the California Historical Landmarks (CHL), the California Register of Historical Resources (CRHR), the National Register of Historic Places (NRHP), and the California Historical Resources Inventory (HRI) listings were reviewed for resources within or immediately adjacent to the project areas.

Historic map and aerial photograph review was conducted to provide contextual information about the historic land uses of the five SARCCUP project areas. USGS topographic maps were reviewed, as were historic aerial photographs provided by historicaerails.com (2018).

The SARCCUP projects that are subject to cultural resources surveys include the Chino Basin Production Wells, Refurbishment and Treatment System, Arlington, Cannon Pump Station, and ID-4 CRA projects. The surveys were conducted on August 23 and 27, 2018. Survey methodology varied based on the specific conditions of each the SARCCUP project areas. Survey areas located in developed urban areas were subject to a reconnaissance-level (windshield) survey to identify historic architectural resources and archaeological resources within or immediately adjacent to the project. Survey areas within undeveloped areas were subject to systematic pedestrian survey using survey transects spaced at intervals no greater than 15 meters (approximately 50 feet). Survey areas with thick vegetation were subject to an opportunistic survey strategy wherein trails, clearings and other areas of bare earth were intensively inspected for the presence of cultural resources. Previously recorded resources were photographed and inspected to assess potential project impacts.

Chino Basin Production Wells, Refurbishment and Treatment System

Archaeological and Historic Architectural Resources

Records Search

The records search results indicate that three cultural resources studies have been conducted within a 0.5-mile radius of the Chino Basin Production Wells, Refurbishment and Treatment System project area. None of the three previous studies include the project area, indicating that it has not been subject to previous cultural resources survey. The records search results indicate that no cultural resources have been previously recorded within the Chino Basin Production Wells, Refurbishment and Treatment System project area, nor within a 0.5-mile radius around the project.

Historic Map and Aerial Photograph Review

Available historic topographic maps for the Chino Basin Production Wells, Refurbishment and Treatment System project include the 1900 and 1903 Cucamonga 15-minute topographic quadrangles, and the 1954 and 1967 Ontario 7.5-minute topographic quadrangles. Additionally, historic aerial photographs from the years 1938, 1948, 1959, 1966, 1972, 1980, 1994, and 2012 were also reviewed. The historic map and aerial photo review indicates that the Chino Basin Production Wells, Refurbishment and Treatment System project area and its vicinity were occupied by orchards during the first half of the 20th century. Although no orchards appear to have existed in the Chino Basin Production Wells, Refurbishment and Treatment System project area itself, a water tank was present within the project area from at least 1938 through 1994. Beginning in the late 1950s, the vicinity around the Chino Basin Production Wells, Refurbishment and Treatment System project area was developed with residential subdivisions. The Chino Basin Production Wells, Refurbishment and Treatment System project area remained undeveloped until 2012, when it was graded and two structures were constructed in its southern portion.

Survey

The Chino Basin Production Wells, Refurbishment and Treatment System project area consists of a triangular-shaped parcel. The northern half of the parcel is covered in gravel and large cobbles, and is bisected by a paved access road. This portion of the Chino Basin Production Wells, Refurbishment and Treatment System project area was subject to a systematic pedestrian survey. The central portion of the parcel consists of a paved area containing ammonium hydroxide and sodium hypochlorite facilities. The southern portion of the parcel is landscaped with a French drain, trees, and covered with mulch. These two areas of the Chino Basin Production Wells, Refurbishment and Treatment System project area were subject to an opportunistic survey wherein areas of visible ground surface were inspected. No cultural resources were identified as a result of the Chino Basin Production Wells, Refurbishment and Treatment System cultural resources survey.

Paleontological Resources

Surface deposits at the proposed Chino Basin Production Wells, Refurbishment and Treatment System project area consist of younger Quaternary gravels, derived from the active San Antonio Wash located immediately to the east. These younger Quaternary deposits do not typically contain significant vertebrate fossils in the uppermost layers, but they are may be underlain by older Quaternary Alluvium that may contain significant fossil vertebrate remains (McLeod 2018).

The closest previously recorded fossil localities to the Chino Basin Production Wells, Refurbishment and Treatment System project area located southwest of the City of Chino approximately 5 miles to the south. These fossil localities produced specimens of fossil horse, *Equus*, and camel, *camelops* (LACM 1728) at depths of 15 to 20 feet below the ground surface (McLeod, 2018). Additional fossil localities located 8 miles south of the Chino Basin Production Wells, Refurbishment and Treatment System project area produced specimens of horse, *Equus* (LACM 7268 and 7271), and specimens of ground sloth, *Nothrotheriops* (LACM 7508) originating from within Older Quaternary deposits (McLeod 2018).

Arlington Production Wells and Pipeline

Archaeological and Historic Architectural Resources

Records Search

The records search results indicate that 45 cultural resources studies have been conducted within a 0.5-mile radius of the Arlington project area. Of these 45 previous studies, 42 included some form of field study including survey, excavation, or monitoring. Approximately 40 percent of the 0.5-mile records search radius has been included in previous cultural resources surveys. Of the 42 previous field studies, 10 (RI−03822, −05297, −05393, −05754, −05965, −08247, −09787, −09875, and −10002) overlap the Arlington Pump Station project area. Approximately 50 percent of the project area has been previously surveyed.

The records search results indicate that 249 cultural resources have been previously recorded within a 0.5-mile radius of the Arlington project. Of the 249 previously recorded resource, 17 are located within or immediately adjacent to (within 100 feet of) the Arlington project area (**Table**

4.5-1). These 17 resources include one prehistoric archaeological site (P−33−000496) and 16 historic architectural resources (P−33−004495, −004791, −007899, −007900, −008407, −009518, −010974, −011251, −011632, −017542, −024194, −025594, −025595, −025596, −025597, and −028079). These resources are described in detail below.

TABLE 4.5-1
RESOURCES WITHIN AND IMMEDIATELY ADJACENT TO THE ARLINGTON PROJECT AREA

Primary # (P-33-)	Permanent Trinomial (CA-RIV-)	Description	Date Recorded	Distance from Project	CRHR Eligibility
000496	496	Prehistoric archaeological site: bedrock milling features	1971, 1993	100 feet	Not evaluated
004495	-	Historic-period archaeological resources remnants of Upper Riverside Canal	1991; 1992; 1996; 2001; 2009	50 feet	Potentially Eligible
004791	-	Historic architectural resource: Lower Riverside Canal	1992; 2001; 2005	Within	Potentially Eligible
007899	-	Historic architectural resource: single-family residence constructed in 1907	1997	50 feet	Potentially eligible
007900	-	Historic architectural resource: single-family residence constructed in 1936	1997	50 feet	Not eligible
008407	-	Historic architectural resource: Sherman Indian School built in 1901	1973	75 feet	Eligible
009518	-	Historic architectural resource: Arlington Branch Library and Fire Hall	1992	50 feet	Eligible
010974	-	Historic architectural resource: three residential buildings built in the 1920s	2000	100 feet	Not evaluated
011251	-	Historic architectural resource: commercial building constructed in 1912	1999	50 feet	Not eligible
011632	-	Historic architectural resource: single-family residence constructed in 1912	2002	50 feet	Not eligible
017542	-	Historic architectural resource: Monroe Street Canal	2008	100 feet	Not evaluated
024194	-	Historic architectural resource: public utility building constructed in 1968	2014	50 feet	Not eligible
025594	-	Historic architectural resource: single-family residence constructed in 1930	2003	60 feet	Not eligible
025595	-	Historic architectural resource: single-family residence constructed in 1926	2003	90 feet	Not eligible
025596	-	Historic architectural resource: single-family residence constructed in 1911	2003	100 feet	Not eligible
025597	-	Historic architectural resource: single-family residence constructed in 1927	2003	70 feet	Not eligible
028079	-	Historic architectural resource: Hawthorne Elementary School	2016	90 feet	Not eligible

Resource Descriptions

Resource P−33−000496 is a prehistoric archaeological site originally recorded in 1971 as consisting of many portable metates, mortars, manos and pestles located within active agricultural fields located southwest of the intersection of Indiana Avenue and Tyler Street (King 1971). In

1993, the site was re-visited and was found to have been destroyed by the construction of the Tyler Springs Senior Apartment building in the 1980s (White 1993). The mapped location of the site is located approximately 100 feet southeast of the Alternative 2 pipeline. The site has not been evaluated for inclusion in the CRHR.

Resource P−36−004495/004791 is a historic architectural resource consisting of the Upper and Lower Riverside Canal. The 7.25-mile-long Upper Canal was constructed in 1870 to divert water from the Santa Ana River for irrigation purposes (Gustafson 2001). The Lower Canal was constructed in 1875 to divert water from the Santa Ana River for irrigation of the lands around the Arlington Heights neighborhood and was in operation until 1914 (McKenna 2005). When originally built, the canals were lined with river cobbles and covered in cement, and had dimensions of 8 feet wide at the bottom and 15 feet wide at the top (Gustafson 2001). Features associated with the canals include headgates, levees, suction pipes, division walls, flume remains, canal intakes, overflow gates, gate controls, siphons, and conduits (Gustafson 2001). Although some segments of the canals have been abandoned, approximately 40 percent is still used for irrigation purposes. Over the years, segments of the canals have been replaced with newer materials, and portions have been replaced with culverts, underground pipes, or concrete tunnels (Gustafson 2001). The resource bisects the Alternative 2 pipeline and has been previously evaluated and recommended as potentially eligible for listing in the NRHP, and is therefore eligible for listing in the CRHR (Gustafson 2001).

Resource P−33−007899 is a historic architectural resource consisting of a single-family residence constructed in 1907. The residence is wood framed and sits on a masonry basement (Tang, 1997a). Between 1920 and 1976, the residence was owned by Donald Roy McMillan, a local rancher and president of the Riverside Alfalfa Growers Association in 1947 (Tang 1997a). The resource is located on the northern side of Indiana Avenue, within 50 feet of the Alternative 2 pipeline. The resource has been evaluated and recommended not eligible for the NRHP; however, it may be eligible for designation as a local historic landmark, and, therefore, is potentially eligible for listing in the CRHR (Tang 1997a).

Resource P−33−007900 is a historic architectural resource consisting of a single-family residence. The resource is a Minimal Traditionalist style wood framed residence with a low-pitched side-gable roof (Tang 1997b). The date of the residence's construction is unknown, but it was moved to its current location in 1936 (Tang 1997b). The resource is located on the northern side of Indiana Avenue, within 50 feet of the Alternative 2 pipeline. The resource has been evaluated and recommended not eligible for the CRHR (Tang 1997b).

Resource P−33−008407 is a historic architectural resource consisting of the Sherman Indian High School administration building constructed in 1901. The high school was constructed in 1901 to provide education to Native Americans from Southern California, Arizona, New Mexico, Nevada, and Utah (Bradly 1977). The administration building is the only remaining building associated with the original construction of the school and was designed by Wilcox and Rose in a style common to railroad depots of the time (Bradly 1977). The building is rectangle in plan view and its brick foundation and walls are covered in stucco. In 1960, the building was updated to meet modern fire codes and the wood framed windows and doors were replaced with metal

frames, and the front veranda was replaced with a small concrete platform (Bradly 1977). The resource is located on the south side of Magnolia Avenue within 50 feet of the Alternative 1 pipeline. The resource was listed in the NRHP in 1980, and is therefore eligible for listing in the CRHR.

Resource P−33−009518 is a historic architectural resource consisting of the Arlington Branch Library and Fire Hall. The building was constructed in 1908–09, and was altered in 1927–28 and 1967–68 (Baker 1992). The building was originally designed in the Classic Revival style by architect Seeley L. Pillar. The alterations to the building in 1927–28 included only structural modification; however, the 1967–68 alterations removed existing fireplaces and staircases, stuccoed interior brick walls, and added offices (Baker 1992). The building is rectangular in plan view, and has cement-covered, brick walls sitting upon a concrete foundation, and a flat roof enclosed by parapet walls (Baker 1992). The resource is located on the south side of Magnolia Avenue within 50 feet of the Alternative 1 pipeline. The resource was listed in the NRHP in 1992, and is therefore eligible for listing in the CRHR.

Resource P-33-010974 is a historic architectural resource consisting of three residential buildings. The three buildings include two single-family residences and one duplex constructed between the late 1920s and the late 1950s (Tang 2000). The resource is located on the south side of Indiana Avenue within 50 feet of the Alternative 2 pipeline and has been previously evaluated as not eligible for listing in the CRHR (Tang 2000).

Resource P-33-011251 is a historic architectural resource consisting of a commercial building. The building was constructed in 1912 and originally housed a blacksmith shop (Van Horn 2002). The single-story building sits atop a brick foundation, is rectangular in plan view, has two arched services entrances, and a stuccoed exterior. The building is located on the north side of Magnolia Avenue and is within 50 feet of the Alternative 1 pipeline. The resource has been previously evaluated and recommended not eligible for listing in the CRHR (Van Horn 2002)

Resource P-33-011632 is a historic architectural resource consisting of a single-family residence. The Craftsman style residence was constructed in 1912 and is wood framed with a poured concrete foundation and a low-pitched side-gabled roof (Tang 2002). The residence was originally owned by Nathan O. Winship, co-owner of a local lumber yard, and was sold to Roy D. Hall in 1948 (Tang 2002). Hall used the residence as the base for his plumbing business. The residence is located on the south side of Magnolia Avenue within 50 feet of the Alternative 1 pipeline. The resource has been evaluated and recommended not eligible for listing in the CRHR (Tang 2002).

Resource P-33-017542 is a historic architectural resource consisting of the Monroe Street Canal. The concrete-lined canal is trapezoidal in cross-section and measures 2,603 feet long along a north-south axis (Cannon and Gregory 2008). The canal was originally an earthen ditch constructed sometime after 1901, but was lined with concrete prior to 1942 (Cannon and Gregory 2008). The resource is located north of Magnolia Avenue within 100 feet of the Alternative 1 pipeline. The resource has not been evaluated for inclusion in the CRHR.

Resource P-33-024194 is a historic architectural resource consisting of a public utility building constructed in 1968. The Modern-style building has a concrete foundation, a stucco over concrete exterior, and a flat roof, and is asymmetrical in plan view (Crawford 2014). The resource is located on the norther side of Magnolia Avenue within 50 feet of the Alternative 1 pipeline. The resource has been previously evaluated and recommended not eligible for the NRHP, but has not been evaluated for inclusion in the CRHR (Crawford 2014).

Resource P-33-025594 is a historic architectural resource consisting of a single family residence. The Spanish Colonial Revival-style residence is U-shaped in plan view, has a stuccoed exterior, and a gabled ceramic-tiled roof (Tibbet and Tang 2003a). The residence was constructed in 1930 by William Gayot as part of a larger subdivision (Tibbet and Tang 2003a). The resource is located on the south side of Magnolia Avenue within 50 feet of the Alternative 1 pipeline alignment. The resource has been evaluated and recommended not eligible for listing in the CRHR (Tibbet and Tang 2003a).

Resource P-33-025595 is a historic architectural resource consisting of a single-family residence that has been converted to commercial uses. The building is irregular in plan view, is wood framed, and has a low-pitched gabled roof (Tibbet and Tang 2003b). The building was constructed by H.A. Schwartz in 1926 as part of a larger subdivision and currently houses a natural food store (Tibbet and Tang 2003b). The resource is located on the south side of Magnolia Avenue within 50 feet of the Alternative 1 pipeline. The resource has been evaluated and recommended not eligible for listing in the CRHR (Tibbet and Tang 2003b).

Resource P-33-025596 is a historic architectural resource consisting of a single-family residence. The building is rectangular in plan view, is wood framed, and has a cross-gabled roof (Tibbet and Tang 2003c). The building was constructed by J.E. Winship in 1911 as part of a larger housing tract (Tibbet and Tang 2003c). The resource is located on the north side of Magnolia Avenue within 50 feet of the Alternative 1 pipeline. The resource has been evaluated and recommended not eligible for listing in the CRHR (Tibbet and Tang 2003c).

Resource P-33-025597 is a historic architectural resource consisting of a single-family residence. The building is irregular in plan view, is wood framed, and has a medium-pitched gabled roof (Tibbet and Tang 2003d). The building was constructed by A.W. Peters in 1929 as part of a larger subdivision (Tibbet and Tang 2003d). The resource is located on the south side of Magnolia Avenue within 50 feet of the Alternative 1 pipeline. The resource has been evaluated and recommended not eligible for listing in the CRHR (Tibbet and Tang 2003d).

Resource P-33-028079 is a historic architectural resource consisting of the vacant Hawthorne Elementary School. The resource comprises eight buildings constructed in 1956 in the Modern style, and includes classrooms and an administration building (Bachtel 2016). The school housed students until 2006, when its operations were moved to a new school location. The resource is located on the south side of Indiana Avenue within 50 feet of the Alternative 2 pipeline. The resource has been evaluated and recommended not eligible for listing in the CRHR (Bachtel 2016).

Historic Map and Aerial Photograph Review

Available historic topographic maps for the Arlington project area include the 1900 Riverside 15-minute topographic quadrangle, and the 1953 and 1967 Riverside West 7.5-minute topographic quadrangles. Historic aerial photographs from the years 1948, 1967, 1972, 1994, and 2012 were also reviewed. The historic map and aerial photograph review indicates that from the early 20th century until the 1960s the Arlington project area and its vicinity were largely used for agricultural purposes. A residential and commercial area comprised of a tight cluster of buildings centered on the intersection of Magnolia Avenue and Van Buren Boulevard, the approximate center point of the proposed Alternative 1 Pipeline, are indicated on the 1953 topographic map. By the late 1960s, the orchards bounding the Arlington project area were completely replaced by residential and commercial development, which intensified and grew denser as depicted in the 1994 and 2012 aerial photographs.

Survey

The Arlington project is located in a developed urban setting within the City of Riverside, dominated by residential and commercial development. Both of the Arlington project pipeline alternatives (Alternatives 1 and 2) were subject to a reconnaissance-level survey wherein an attempt was made to identify areas of visible ground surface that could be inspected, and to relocate the 17 previously recorded resources within or within 100 feet of the Arlington project to assess the project's potential impacts to the resources. Of the 17 previously recorded resources, one is a prehistoric archaeological site (P−33−000496) and 16 are historic architectural resources (P−33−004495, −004791, −007899, −007900, −008407, −009518, −010974, −011251, −011632, −017542, −024194, −025594, −025595, −025596, −025597, and −028079). The mapped location of the prehistoric archeological site (P−33−000496), which overlaps a segment of the Alternative 2 pipeline, was visited as part of the survey, but the entire areas was developed with a residential subdivision and the site's surface manifestation is presumed to have been destroyed.

Of the 16 historic architectural resources, 9 (P−33−004495, −008407, −009518, −011251, −024194, −025594, −025596, −025597, and −028079) were relocated and largely matched previous descriptions provided in their respective DPR forms. These nine historic architectural resources do not overlap the proposed project pipeline alternatives, but are located within 100 feet of the pipeline alternatives. Seven (P−33−004791, −007899, −007900, −010974, −011632, −017542, and −025595) of the previously recorded historic architectural resources could not be relocated and appear to have been destroyed by recent development.

No newly identified cultural resources were documented within the Arlington project area as a result of the survey.

Paleontological Resources

Much of the Arlington project area contains surficial deposits of younger Quaternary Alluvium, with some exposures of Older Quaternary deposits derived from alluvial fan deposits originating from the mountains located to the southeast (McLeod 2018). These deposits typically do not contain significant vertebrate fossils in the very uppermost layers, but at relatively shallow depth they may be underlain by older sedimentary deposits that do contain significant vertebrate fossils. The southwestern portion of the of the Alternative 2 pipeline, southeast of the intersection of Highway 91 and La Sierra Avenue, bounds exposures of intrusive igneous rock, which does not have the potential to contain significant vertebrate fossils (McLeod 2018). The LACM paleontological database records search did not indicate the presence of known fossil localities within the Arlington project area.

Cannon Pump Station Project

Archaeological and Historic Architectural Resources

Records Search

The records search results indicate that 15 cultural resources studies have been conducted within a 0.5-mile radius of the Cannon Pump Station project area. Of these 15 previous studies, 10 included some form of field study including survey, excavation, or monitoring. Approximately 35 percent of the 0.5-mile records search radius has been included in previous cultural resources surveys. Of the 10 previous field studies, 1 (RI-03693) overlaps the Cannon Pump Station project area. Approximately 5 percent of the project area has been previously surveyed.

The records search results indicate that 15 cultural resources have been previously recorded within a 0.5-mile radius of the Cannon Pump Station project (**Table 4.5-2**). Of the 15 previously recorded resource, 14 are prehistoric archaeological sites (P−33−001839, −003274, −003275, −003276, −003592, −003634, −003635, −003636, −003637, −003639, −003640, −016645, −016646, and −016647) consisting primarily of bedrock milling features, and 1 is a prehistoric isolate (P−33−012326). None of the 15 previously recorded resources are located within or immediately adjacent to the Cannon Pump Station project area.

Historic Map and Aerial Photograph Review

Available historic topographic maps for the Cannon Pump Station project include the 1901 Riverside 15-minute topographic quadrangle, and the 1953 and 1967 Riverside 7.5-minute topographic quadrangles. Historic aerial photographs from the years 1948, 1967, 1978, 1994, and 2012 were also reviewed. The historic map and aerial photograph review indicates the Cannon Pump Station project area and its vicinity remained largely undeveloped until the late 1970s, when construction of residential subdivisions began immediately north and southeast of the project area. By 1994 the Cannon Pump Station project area was completely surrounded by residential development, and its northern most portion had been graded flat. The Cannon Pump Station project area has remained largely undeveloped despite being surrounded by residential subdivisions.

TABLE 4.5-2
PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN 0.5 MILES OF THE CANNON PUMP STATION PROJECT AREA

Primary # (P-33-)	Permanent Trinomial (CA-RIV-)	Description	Year Recorded	Distance from Project	CRHR Eligibility
1839	1839	Prehistoric archaeological site: bedrock milling features	1980; 1989	2,430 feet	Not evaluated
3274	3274	Prehistoric archaeological site: bedrock milling features	1989	2,175 feet	Not evaluated
3275	3275	Prehistoric archaeological site: bedrock milling features	1989	2,315 feet	Not evaluated
3276	3276	Prehistoric archaeological site: bedrock milling features	1989	2,555 feet	Not evaluated
3592	3592	Prehistoric archaeological site: bedrock milling features	1989	1,715 feet	Not evaluated
3634	3634	Prehistoric archaeological site: bedrock milling features	1989	975 feet	Not evaluated
3635	3635	Prehistoric archaeological site: bedrock milling features	1989	1,625 feet	Not evaluated
3636	3636	Prehistoric archaeological site: bedrock milling features	1989	535 feet	Not evaluated
3637	3637	Prehistoric archaeological site: bedrock milling features	1989	960 feet	Not evaluated
3639	3639	Prehistoric archaeological site: bedrock milling features	1989; 2007	2,290 feet	Not evaluated
3640	3640	Prehistoric archaeological site: occupation site	1989	2,435 feet	Not evaluated
12326	-	Prehistoric isolate: one mano	1989	1,525 feet	Not eligible
16645	8723	Prehistoric archaeological site: bedrock milling features	2007	1,825 feet	Not evaluated
16646	8724	Prehistoric archaeological site: bedrock milling features	2007	1,745 feet	Not evaluated
16647	8725	Prehistoric archaeological site: bedrock milling features	2007	2,160 feet	Not evaluated

Survey

The Cannon Pump Station project area is located within a residential area of the City of Riverside, and consists of a vacant lot with a northwest-southeast trending drainage bisecting its central portion. The northern portion of the lot has been previously graded flat and was largely free of vegetation. The southern portion of the site is comprised of a generally flat landform with sparse non-native grasses, which reduced ground surface visibility to 75 percent. Both these areas were subject to a systematic pedestrian survey.

The central portion of the Cannon Pump Station project area is comprised of a drainage with thick willow scrub vegetation, which obscured the ground surface visibility to approximately 0-15 percent and hindered access. This portion of the Cannon Pump Station project area was subject to an opportunistic survey wherein trails and cleanings within the willow scrub vegetation were intensively inspected. Immediately south of the drainage was a large diameter concrete pipe

installed within a generally flat earthen pad with sparse vegetation. This area was subject to a systematic survey.

No cultural resources were identified within the Cannon Pump Station project area as a result of the cultural resources survey.

Paleontological Resources

The LACM paleontological database records search indicates the Cannon Pump Station project area consists entirely of exposures of intrusive igneous rock, which does not have the potential to contain significant vertebrate fossils (McLeod 2018).

ID-4 Colorado River Aqueduct (CRA) Crossing Refurbishment

Archaeological and Historic Architectural Resources

Records Search

The records search results indicate that 16 cultural resources studies have been conducted within a 0.5-mile radius of the ID-4 CRA project area. Of these 16 previous studies, 11 included some form of field study including survey, excavation, or monitoring. Approximately 30 percent of the 0.5-mile records search radius has been included in previous cultural resources surveys. Of the 11 previous field studies, 1 (RI−003289) overlaps the ID-4 CRA project area. Approximately 15 percent of the project area has been previously surveyed.

The records search results indicate that 11 cultural resources have been previously recorded within a 0.5-mile radius of the ID-4 CRA project area (**Table 4.5-3**). Of the 11 previously recorded resource, 8 are prehistoric archaeological sites (P−33−004392, −004393, −004394, −004395, −004417, −004418, −016067, and −021038) consisting primarily of bedrock milling features, 2 are historic-period archaeological sites (P−33−004412 and −010949), and 1 is a historic architectural resource consisting of the Colorado River Aqueduct (P−33−011265). One resource, the Colorado River Aqueduct (P−33−011265), overlaps the ID-4 CRA project area. This resource is described in detail below.

Resource Descriptions

Resource P−33−011265 is a historic architectural resource consisting of the Colorado River Aqueduct. The aqueduct was constructed in the early 1930s from Lake Havasu to Lake Mathews south of Riverside (Hamilton and Beedle 2005). The aqueduct consists of a large, open, concrete-lined canal crossing the Colorado and Mojave deserts, with long segments that are tunnels bored beneath mountain ranges. The resource overlaps the ID-4 CRA Refurbishment project area. The resource has been previously recommended eligible for listing in the NRHP, and is therefore eligible for listing in the CRHR (Hamilton and Beedle 2005).

Historic Map and Aerial Photograph Review

Available historic topographic maps for the ID-4 CRA project area include the 1901 Elsinore 15-minute topographic quadrangle, and the 1953 and 1967 Steele Peak 7.5-minute topographic quadrangles. Historic aerial photographs from the years 1966, 1978, 1994, 2009, and 2012 were also reviewed. The historic map and aerial photograph review indicates that development within

the ID-4 CRA project area has been associated with the CRA and EMWD facilities since at least the 1950s. Prior to the construction of the CRA, the ID-4 CRA project area appears to have been undeveloped.

TABLE 4.5-3
PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN 0.5 MILES OF THE ID-4 CRA PROJECT

Primary # (P-33-)	Permanent Trinomial (CA-RIV-)	Description	Year Recorded	Distance from Project	CRHR Eligibility
004392	4392	Prehistoric archaeological site: bedrock milling features	1991	1,325 feet	Not evaluated
004393	4393	Prehistoric archaeological site: bedrock milling features	1991	1,080 feet	Not evaluated
004394	4394	Prehistoric archaeological site: lithic scatter	1991	1,090 feet	Not evaluated
004395	4395	Prehistoric archaeological site: bedrock milling features	1991	2,500 feet	Not evaluated
004412	4412	Historic-period archaeological site: refuse scatter and concrete foundations	1991	1,550 feet	Not evaluated
004417	4417	Prehistoric archaeological site: bedrock milling features	1991	1,350 feet	Not evaluated
004418	4418	Prehistoric archaeological site: bedrock milling features	1991	1,500 feet	Not evaluated
010949	10949	Historic-period archaeological site: remnants of mortar well	2000; 2005	2,305 feet	Not evaluated
011265	6726H	Historic architectural resource: Colorado River Aqueduct	2000; 2016	Within	Eligible
016067	8301	Prehistoric archaeological site: bedrock milling features	2005	1,360 feet	Not evaluated
021038	10896	Prehistoric archaeological site: bedrock milling features	2012	950 feet	Not evaluated

Survey

The ID-4 CRA project area is located at the base of an earthen ramp that slopes down to a segment of the CRA, and encompasses a number of pumps and a pipe that crosses the CRA. The earthen ramp was inspected for the presence of archaeological resources and the CRA itself (documented as P−33−011265), the one historic architectural resource within he ID-4 CRA project area, was photographed. No newly identified cultural resources were identified with the ID-4 project area as a result of the survey.

Paleontological Resources

Surface deposits at the ID-4 CRA Crossing Refurbishment project area may be composed of artificial fill associated with the Colorado River Aqueduct and would likely not contain significant vertebrate fossils. However, should native sediments be present, they would consist of younger Quaternary Alluvium derived as active wash deposits from the drainage flowing from Lake Mathews to the west (McLeod 2018). The younger Quaternary deposits do not typically

contain significant vertebrate fossils at shallow depths, but they may be underlain by older sedimentary deposits that do contain significant vertebrate fossils (McLeod 2018).

Immediately north of the proposed ID-4 CRA Crossing Refurbishment project area are exposures of plutonic igneous rock, which does not have the potential to contain vertebrate fossils (McLeod 2018). Immediately south of the proposed ID-4 CRA Crossing Refurbishment project area, surface deposits consist of older Quaternary Alluvium originating from fan deposits from the hills adjacent to the south but possibly also as fluvial deposits from the drainage leading from Lake Mathews just to the west. These older Quaternary deposit may underlie the younger Quaternary Alluvium at the proposed ID-4 CRA Crossing Refurbishment project area (McLeod 2018).

The closest previously recorded fossil localities to the ID-4 CRA Crossing Refurbishment project area occur in the Lake Elsinore area approximately 11 miles to the south. These fossil localities produced specimens of fossil camel, *Camelops hesternus* (LACM 572 and 6059) and fossil horse, Equus (LACM 5168) (McLeod 2018).

Santa Ana River Arundo Removal

Archaeological and Historic Architectural Resources

Records Search

The records search results indicate that 57 cultural resources studies have been conducted within a 0.25-mile radius of the Arundo Removal project area. Of these 57 previous studies, 50 included some form of field study including survey, excavation, or monitoring. Approximately 60 percent of the 0.25-mile records search radius has been included in previous cultural resources surveys. Of the 50 previous field studies, 16 (RI−00061, −01307, −01697, −01954, −02148, −02267, −02307, −02938, −03982, −04220, −05905, −08536, −08763, −08772, −09000, and −09169) overlap the Arundo Removal project area. Of these 16 studies, 1 prepared by Hampson et al. in 1988 (RI−02307) includes approximately 85 percent of the Arundo Removal project area.

Hampson et al.'s investigation included records searches, as well as a pedestrian survey of approximately 9,375 acres along the Upper Santa Ana River. Based on the results of the investigations, Hampson et al. found that the identified prehistoric archaeological resources were located along the margins of the terraces and bluffs overlooking the river, with none located within the actual Santa Ana River channel. Similarly, it was found that many of the historic-period archaeological sites were located on low benches adjacent to the river channel and its tributaries and largely represented remains of agricultural operations, as well as water and power development. The location of archaeological resources along the margins of the riverbed is not surprising given that the high energy flow of water associated with the periodic flooding episodes that occurred within the Santa Ana River in the past would have either scoured away or buried these resources.

The records search results indicate that 49 cultural resources have been previously recorded within a 0.25-mile radius of the Arundo Removal project (**Table 4.5-4**). Of the 49 previously recorded resource, 17 are located within the Arundo Removal project area. These 17 resources include three prehistoric archaeological sites (P−33−000621, −000622, and −000652), four

historic-period archaeological sites (P−33−002802, −003354, −003357, and −003694), two multicomponent archaeological sites (P−33−000127 and −001451), six historic architectural resources (P−33−003361, −006524, −016848, −017221, −024052, and −024146), and two historic-period isolates (P−33−012736 and −017220). These resources are described in detail below.

TABLE 4.5-4
PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN 0.25 MILES OF ARUNDO REMOVAL PROJECT AREA

Primary # (P-33-)	Permanent Trinomial (CA-RIV-)	Other Identifier	Description	Date Recorded	Distance from Project	CRHR Eligibility
000100	100	-	Multicomponent archaeological site: prehistoric habitation and historic-period ranch	1941;1951;1979; 1989; 1990;1998	110 feet	Not evaluated
000127	127	-	Multicomponent archaeological site: prehistoric bedrock milling features and historic-period refuse scatter	1951; 1975; 1987; 2011; 2013	Within	Eligible
000325	325	-	Prehistoric archaeological site: artifact scatter	1967; 1971	330 feet	Not evaluated
000621	621	-	Prehistoric archaeological site: bedrock milling features	1973; 1975; 1987; 1995; 1997	Within	Not evaluated
000622	622	-	Prehistoric archaeological site: bedrock milling features	1973; 1987; 1995	Within	Not evaluated
000624	624/H	-	Multicomponent archaeological site: prehistoric bedrock milling features and historic-period concrete-lined ditches	1973; 1998	1,320 feet	Not evaluated
000625	625	-	Prehistoric archaeological site: bedrock milling features	1973; 1998	980 feet	Recommended not eligible
000652	652	-	Prehistoric archaeological site: lithic and groundstone scatter	1972; 1983	Within	Not evaluated
000700	700	-	Prehistoric archaeological site: bedrock milling features	1971	825 feet	Not evaluated
000884	884	-	Prehistoric archaeological site: pictographs	1965	130 feet	Not evaluated
001039	1039	-	Historic-period archaeological site: remnants of Ashcroft family ranch	1975; 1995	890 feet	Potentially eligible
001043	1043	-	Prehistoric archaeological site: lithic scatter	1975	745 feet	Not evaluated
001044	1044	-	Historic-period archaeological site: remnants of Carrillo family farm	1975; 1980; 1995	90 feet	Potentially eligible
001436	1436	-	Prehistoric archaeological site: lithic and groundstone scatter	1977	620 feet	Not evaluated
001451	1451	-	Multicomponent archaeological site: prehistoric lithic scatter and historic-period refuse scatter	1977	Within	Not evaluated
002754	2754	-	Prehistoric archaeological site: lithic and groundstone scatter	1983; 2012	1,140 feet	Not evaluated

Primary # (P-33-)	Permanent Trinomial (CA-RIV-)	Other Identifier	Description	Date Recorded	Distance from Project	CRHR Eligibility
002802	2802	-	Historic-period archaeological site: refuse scatter and buried adobe structure remnants	1984	Within	Not evaluated
003354	3354	-	Historic-period archaeological site: refuse scatter and features associated with Chinese emigrant occupation and farming	1987	Within	Potentially eligible
003358	3358	-	Historic-period archeological site: refuse scatter	1987; 1990	200 feet	Not evaluated
003359	3359	-	Historic-period archaeological site: refuse scatter	1987	200 feet	Not evaluated
003360	3360	-	Multicomponent archaeological site: prehistoric lithic scatter and historic-period refuse scatter	1987	80 feet	Not evaluated
003361	3361/H	-	Historic architectural resource: Union Pacific RR bridge	1987; 2003; 2013	Within	Eligible
003694	3694H	-	Historic-period archaeological site: remnants of Rincon town site	1989; 1992; 1994	Within	Potentially eligible
003945	3945	-	Prehistoric archaeological site: bedrock milling features	1990	950 feet	Not eligible
004730	-	-	Historic architectural resource: Prado Dam	1992	1,030 feet	Eligible
005781	5521H	-	Historic-period archaeological site: remnants of farmstead	1995	90 feet	Not evaluated
005783	5523H	-	Historic-period archaeological site: remnants of poultry farm'	1995	180 feet	Not evaluated
006524	-	-	Historic architectural resource: Good Samaritan Boys Home	1983	Within	Potentially eligible
007540	5805H	-	Historic-period archaeological resource: remnants of canal	1995	1,110 feet	Not evaluated
007586	5809H	-	Historic-period archaeological site: structural remnants	1996	1,025 feet	Not evaluated
008698	-	-	Historic-period isolate: bottle glass fragments	1999	735 feet	Not eligible
008835	6271	-	Prehistoric archaeological site: bedrock milling features	1998	1115 feet	Recommended not eligible
008836	6272	-	Prehistoric archaeological site: bedrock milling features	1998	1110 feet	Recommended not eligible
009652	6452	-	Prehistoric archaeological site: bedrock milling features	2000; 2011	340 feet	Not evaluated
009680	-	PHI RIV-007	Historic-period landscape resource: Mount Rubidoux	1967	350 feet	Not evaluated
011126	6690H	-	Historic-period resource: historic architectural and archaeological features associated with Edmiston residence constructed in 1908	2001	700 feet	Recommended not eligible
012622	-	-	Prehistoric isolate: mano fragment	1988	800 feet	Not eligible
012736	-	-	Historic-period isolate: bottle glass fragments	1987	Within	Not eligible

Primary # (P-33-)	Permanent Trinomial (CA-RIV-)	Other Identifier	Description	Date Recorded	Distance from Project	CRHR Eligibility
012900	-	-	Historic-period archaeological site: refuse scatter and concrete foundations	1980	645 feet	Not evaluated
016848	-	-	Historic architectural resource: Santa Ana River Trunk Sewer	2007; 2011	Within	Recommended not eligible
016851	-	CHL 787	Historic-period resource: De Anza Trail Monument	2007; 2013	375 feet	Eligible
017220	-	-	Historic-period isolate: porcelain tile fragments	2008	Within	Not eligible
017221	-	-	Historic architectural resource: structures associated with Lynn Bar Ranch	2008	Within	Recommended not eligible
017330	-	-	Prehistoric isolate: two metate fragments	2007	570 feet	Not eligible
018664	9506	-	Historic architectural resource: ranch buildings	2010	730 feet	Recommended not eligible
020283	-	-	Historic architectural resource: single-family property	2011	1,150 feet	Not evaluated
024052	-	-	Historic architectural resource: Paradise Knolls Golf Course	2014	Within	Not eligible
024146	-	-	Historic architectural resource: storage shed	2015	Within	Not evaluated
003357	3357	-	Historic-period archaeological resource: remnants of the Pedely Power Plant and canal	1987; 1997	Within	Not evaluated

Resource Descriptions

Resource P−33−000127 is a multicomponent archaeological site consisting of prehistoric bedrock milling features and historic−period refuse. The prehistoric bedrock milling features include 35 milling slicks, five bedrock mortars, five incipient bedrock mortars, and three metates (Hall 1975a). The historic-period refuse scatter consists of tableware and beverage bottle fragments dating to the late 19th and early to mid-20th century (Hall 1975a; Ruzicka and Akyuz 2013a). A plaque (P−33−016851; CHL 787) is located within the site commemorating it as the site where De Anza camped and crossed the Santa Ana River in 1774 and 1776. De Anza mentioned a village was located at or in the vicinity of the site. No artifacts or features indicating habitation have been previously documented within the site, but the bedrock milling features were possibly associated with prehistoric habitation (Ruzicka and Akyuz 2013a). Disturbances to the site include the construction of the Union Pacific Railroad bridge (P−33−003361), which bisects the site, as well as graffiti possibly associated with use of the Santa Ana River Trail located on the site's northern and eastern margins. The site is located within the Arundo Removal project area and has been previously recommended eligible for listing in the CRHR under Criteria 1 and 4 due to the site's possible association with the De Anza expedition and its data potential, respectively (Ruzicka and Akyuz 2013a).

Resource P−33−000621 is a prehistoric archaeological site consisting of 12 bedrock milling features, including millings slicks and shallow metates located on seven granitic boulders (Alexandrowicz et al. 1995a). In 1996, a single 1-meter by 1-meter excavation unit was excavated within the site to a depth of 32 centimeters; no prehistoric artifacts or features were identified (Love 1997). Disturbances to the site include the construction of a concrete channel that bisects the site's northwestern corner, as well as graffiti and artifact collection (Alexandrowicz et al. 1995a). The site is located within the Arundo Removal project area and has been previously recommended ineligible for listing in the NRHP, but has not been evaluated for inclusion in the CRHR (Love 1997).

Resource P−33−000622 is a prehistoric archaeological site consisting of bedrock milling features. The bedrock milling features include nine millings slicks, four bedrock mortars, and a bedrock metate located on four granitic boulders (Hall 1975b). Site disturbances are relatively minor and weathering and erosion of the boulders on which the features are located (Alexandrowicz et al., 1995b). The site is located within the Arundo Removal project area and has not been previously evaluated for inclusion in the CRHR.

Resource P−33−000652 is a prehistoric archaeological site consisting of a lithic and groundstone scatter. In 1983 the site was subject to salvage excavation wherein three 1-meter by 0.5-meter units were excavated, resulting in the recovery of manos, metate fragments, lithic debitage, and flakes (Brock and Langenwalter 1983). Much of the site has been destroyed by the construction of the Prado County Park Museum and agricultural activities (Kirkish 1972; Brock and Langenwalter 1983). The site's southern margin overlaps the Arundo Removal project area. The site has not been evaluated for inclusion in the CRHR.

Resource P−33−001451 is a multicomponent archaeological site. The site's prehistoric component consists of a sparse lithic and groundstone scatter, and the sites' historic-period component consists of beverage bottle fragments (Hammond 1977). Disturbances to the site include impacts associated with agricultural activities. The site is located within the Arundo Removal project area and has not been evaluated for inclusion in the CRHR.

Resource P−33−002802 is a historic-period archaeological site consisting of subsurface refuse deposits and an adobe foundation associated with an adobe dwelling, depicted on a railroad survey map dating to the 1880s (Langenwalter and Brock 1984). One 1-meter by 1-meter excavation unit was excavated within the site to a depth of 90 cm, resulting in the recovery of bottle glass fragments, plate glass fragments, metal fragments, iron square cut nails, saw-cut animal bone, and tableware (Langenwalter and Brock 1984). The site's northern margin overlaps the Arundo Removal project area. The site has not been evaluated for inclusion in the CRHR.

Resource P−33−003354 is a historic-period archaeological site possibly representing 19th century occupation and farming by Chinese emigrants and was locally known as China Gardens (Hampson et al. 1987). The site description is based on reports from a local informant stating that historic-period refuse has been detected eroding out of cut banks and was exposed during bulldozing of the area. Reported artifacts include a hand-tooled clear bottle, Chinese ceramic wine bottles and food storage jars, medicine bottles, and canning jars (Hampson et al. 1987). The

site's location and contents are based on informant interviews and the resource has not been formally verified due to thick vegetation covering the site's mapped location (Hampson et al. 1987). The mapped location of the site is located within the Arundo Removal project area. The site has not been evaluated for inclusion in the CRHR.

Resource P−33−003357 is a historic-period archaeological resource consisting of the remnants of the Pedley Power Plant and its associated canal. The power plant, also known as the Riverside Power Plant, was constructed in the early 1900s and provided hydroelectric power to the city of Riverside between 1903 and 1906 (Love and Tang 1997). The concrete lined canal was constructed in 1904 to provide water to the Pedley Power Plant (Love and Tang 1997). The canal extended approximately 6 miles along the Santa Ana River channel and was in use until the 1910s when the canal's Headworks were destroyed by flooding (Love and Tang 1997). The resource is comprised of six features, including the remnants of the hydroelectric building (Feature 1), a concrete spillway (Feature 2), a concrete penstock (Feature 3), a concrete header box (Feature 4), a concrete foundation (Feature 5), and a concrete canal (Feature 6) (Romani et al. 1987). The concrete-lined canal associated with the resource bisects portions of the Arundo Removal project area and has not been previously evaluated for inclusion in the CRHR.

Resource P−33−003361 is a historic architectural resource consisting of the Union Pacific Railroad bridge. The 984-foot-long arched railway bridge was constructed between 1902 and 1904 to span the Santa Ana River (Ruzicka and Akyuz 2013b). At the time of the bridge's construction it was the longest concrete bridge in the world. (Ruzicka and Akyuz 2013b). The bridge is located within the Arundo Removal project area and has been previously recommended eligible for listing in the CRHR under Criterion 3 for its architectural characteristics.

Resource P−33−003694 is a historic-period archaeological site consisting of the remnants of the previous Rincon townsite, dating to the 1880s. In 1994, the site was subject to data recovery excavations and 28 features were exposed. These 28 features include the remnants of pottery kilns, concrete storm drains, concrete footings and foundations, refuse deposits, and the remnants of a street (Dittmer, 1994). The site's northeastern quadrant overlaps the Arundo Removal project area. The site has been previously recommended eligible for listing in the NRHP, and is therefore eligible for listing in the CRHR (Dittmer 1994).

Resource P−33−006524 is a historic architectural resource consisting of the Good Samaritan Boys Home. The building was constructed in 1928 on Fuller Ranch by O.R. Fuller, and was originally known as Casa Orone (Richie 1983). The two-story building is an example of Mediterranean/Spanish Revival architecture and has stucco siding, a low-pitched tile roof, and decorative balconies (Richie 1983). The southeastern portion of the resource overlaps the Arundo Removal project area. The resource has been previously recommended eligible for listing in the NRHP, and is therefore eligible for listing in the CRHR (Richie 1983).

Resource P−33−012736 is a historic-period isolate comprised of approximately 25 amethyst glass fragments representing a single jar (Romani and Wakefield 1987). The isolate is located within the Arundo removal project area. Due to a lack of clear cultural context, isolates are not considered eligible for listing in the CRHR.

Resource P−33−016848 is a historic architectural resource consisting of the Santa Ana River Trunk Sewer. The sewer is located along the southern margin of the Santa Ana River and runs from Tequesquito Arroyo to the City of Riverside wastewater treatment plant. The sewer is composed of two 24-inch-diameter vitrified clay pipelines constructed in 1944, a 44-inch-diameter concrete pipeline constructed in 1957, concrete-covered brick manholes, drop culverts, and outfall pipelines (Beedle 2007). The resource bisects portions of the Arundo Removal project area and has been previously recommended ineligible for listing in the CRHR (Beedle 2007).

Resource P−33−017220 is a historic-period isolate comprised of several blue ceramic tiles and a toilet seat fragment with "NGK - Japan – 1963" printed on it (Sanka and Aislin-Kay 2008). The isolate is located within the Arundo removal project area. Due to a lack of clear cultural context, isolates are not considered eligible for listing in the CRHR.

Resource P−33−017221 is a historic architectural resource consisting of the LynnBar Ranch, also known as the A Bar Ranch. The 122-acre former horse ranch consists of a number of structures including the main residence, a maid's residence, a caretaker's residence, a race track, stables, a barn, paddocks, a swimming pool, and two garages, all constructed between 1946 and 1960 (Crawford 2008). The southeastern portion of the resource overlaps the Arundo Removal project area. The resource has been previously evaluated and recommended not eligible for listing in the CRHR (Crawford 2008).

Resource P−33−024052 is a historic architectural resource consisting of the Paradise Knolls Golf Course. The 110-acre golf course was opened in 1968 as a 9-hole course, and was expanded to an 18-hole course in the 1970s (Tang et al. 2014). The golf course includes a number of buildings and features including fairways, greens, a clubhouse, a groundskeeper's residence, a two-story residence, and a garage (Tang et al. 2014). The southeastern corner of the golf course overlaps the Arundo Removal project area. The resource has been previously evaluated and recommended as not eligible for listing in the CRHR.

Resource P−33−024146 is a historic architectural resource consisting of a storage shed. The shed dates to at least as early as 1966 and is a wood framed structure on a concrete with a corrugated metal roof, and has five entry doors and one large rolling door (Brodie 2015). The resource is located within the Arundo Removal project area and has not been evaluated for inclusion in the CRHR.

Historic Map and Aerial Photograph Review

Available historic topographic maps for the Arundo Removal project area include the 1900 Riverside 15-minute topographic quadrangle, the 1942 Corona 15-minute topographic quadrangle, the 1954 and 1967 Corona North 7.5-minute topographic maps, and the 1953 and 1967 Riverside West 7.5-minute topographic quadrangles. Historic aerial photographs from the years 1938, 1948, 1967, 1980, 1994, and 2012 were also reviewed. The historic map and aerial photo review shows that the segment of the Santa Ana River that encompasses the Arundo Removal project has largely remained in the same braided channel and, until the mid-20th century, the channel was largely bounded by agricultural fields. Beginning in the 1960s, urban

development associated with the cities of Riverside and Corona expanded to the southern margin of the river's channel.

Paleontological Resources

Much of the Arundo Removal project area is characterized by shallow surface deposits of younger Quaternary Alluvium or active wash deposits from the Santa Ana River. These deposits do not typically contain significant vertebrate fossils in the uppermost layers (McLeod 2018). However, these younger deposits may be underlain at relatively shallow depths by older sedimentary deposits that may contain significant fossil vertebrate remains. Some of the higher elevations within the Arundo Removal project area have surface exposures of older Quaternary Alluvium and these deposits likely underlie the younger Quaternary Alluvium that covers much of the Arundo Removal project area (McLeod 2018). The northeastern margins of the Arundo Removal project area bound by exposures of intrusive igneous rock, which would not contain significant fossil vertebrate remains.

The closest previously recorded fossil localities in the vicinity of the Arundo Removal project area are located in the Corona area, approximately 3.75 miles south of the project area. These localities produced specimens of fossil deer, *Odocoileus* (LACM 1207), at shallow depths. Additional fossil localities occur in the vicinity of Jurupa Valley located 3.5 miles northeast of the Arundo removal project area. These localities produced fossil specimens of whipsnake, *Masticophis* (LACM 7811), from within older Quaternary deposits at depths of 9 to 11 feet below the ground surface (McLeod 2018).

4.5.2 Regulatory Framework

State

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at *Public Resources Code (PRC) Section 21000 et seq.* CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or unique archaeological resources. Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

The *CEQA Guidelines* (Title 14 California Code of Regulations [CCR] Section 15064.5) recognize that historical resources include: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (CRHR); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's

determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the *CEQA Guidelines* apply. If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site may be treated in accordance with the provisions of Section 21083, which is as a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required. The *CEQA Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (*CEQA Guidelines* Section 15064.5(c)(4)).

A significant effect under CEQA would occur if a project results in a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* Section 15064.5(a). Substantial adverse change is defined as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired" (*CEQA Guidelines* Section 15064.5(b)(1)). According to *CEQA Guidelines* Section 15064.5(b)(2), the significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that:

A. Convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or
B. Account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the

public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

C. Convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

In general, a project that complies with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Standards) (Weeks and Grimer 1995) is considered to have mitigated its impacts to historical resources to a less-than-significant level (CEQA Guidelines Section 15064.5(b)(3)).

California Register of Historical Resources

The CRHR is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility for the CRHR are based upon NRHP criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the CRHR, including California properties formally determined eligible for, or listed in, the NRHP.

To be eligible for the CRHR, a prehistoric or historic-period property must be significant at the local, state, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the CRHR must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the NRHP, but it may still be eligible for listing in the CRHR.

Additionally, the CRHR consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

- California properties listed on the NRHP and those formally determined eligible for the NRHP;
- California Registered Historical Landmarks from No. 770 onward; and,

- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the CRHR.

Other resources that may be nominated to the CRHR include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the NRHP, the CRHR, and/or a local jurisdiction register);
- Individual historical resources;
- Historical resources contributing to historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 requires that in the event human remains are discovered, the County Coroner be contacted to determine the nature of the remains. In the event the remains are determined to be Native American in origin, the Coroner is required to contact the NAHC within 24 hours to relinquish jurisdiction.

California Public Resources Code Section 5097.98

California PRC Section 5097.98, as amended by Assembly Bill 2641, provides procedures in the event human remains of Native American origin are discovered during project implementation. PRC Section 5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the discovery is adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. PRC Section 5097.98 further requires the NAHC, upon notification by a County Coroner, designate and notify a Most Likely Descendant (MLD) regarding the discovery of Native American human remains. Once the MLD has been granted access to the site by the landowner and inspected the discovery, the MLD then has 48 hours to provide recommendations to the landowner for the treatment of the human remains and any associated grave goods.

In the event that no descendant is identified, or the descendant fails to make a recommendation for disposition, or if the land owner rejects the recommendation of the descendant, the landowner may, with appropriate dignity, reinter the remains and burial items on the property in a location that will not be subject to further disturbance.

Local

The proposed Project encompasses the cities of Montclair and Riverside. These two jurisdictions have their own independent General Plans and municipal codes that pertain to cultural and historic resources.

City of Riverside

General Plan

The Historic Preservation Element of the City of Riverside's General Plan includes the following objectives and policies relevant to this Project:

Objective HP-1: To use historic preservation principles as an equal component in the planning and development process.

Policy HP-1.1: The City shall promote the preservation of cultural resources to ensure that citizens of Riverside have the opportunity to understand and appreciate the City's unique heritage.

Policy HP-1.2: The City shall assume its direct responsibility for historic preservation by protecting and maintaining its publicly owned cultural resources. Such resources may include, but are not limited to, buildings, monuments, landscapes, and right-of-way improvements, such as retaining walls, granite curbs, entry monuments, light standards, street trees, and the scoring, dimensions, and patterns of sidewalks, driveways, curbs and gutters.

Policy HP-1.3: The City shall protect sites of archaeological and paleontological significance and ensure compliance with all applicable State and federal cultural resources protection and management laws in its planning and project review process.

Policy HP-1.4: The City shall protect natural resources such as geological features, heritage trees, and landscapes in the planning and development review process and in park and open space planning.

Policy HP-1.5: The City shall promote neighborhood/city identity and the role of historic preservation in community enhancement.

Policy HP-1.6: The City shall use historic preservation as a tool for "smart growth" and mixed use development.

Policy HP-1.7: The City shall ensure consistency between this Historic Preservation Element and all other General Plan elements, including subsequent updates of the General Plan.

Objective HP-2: To continue an active program to identify, interpret and designate the City's cultural resources.

Policy HP-2.1: The City shall actively pursue a comprehensive program to document and preserve historic buildings, structures, districts, sites (including archaeological sites), objects, landscapes, and natural resources.

Policy HP-2.2: The City shall continually update its identification and designation of cultural resources that are eligible for listing in local, state and national registers based upon the 50-year age guideline for potential historic designation eligibility.

Policy HP-2.3: The City shall provide information to citizens, and the building community about what to do upon the discovery of archaeological resources and burial sites, as well as, the treatment, preservation, and repatriation of such resources.

Objective HP-3: To promote the City's cultural resources as a means to enhance the City's identity as an important center of Southern California history.

Policy HP-3.1: The City shall conduct educational programs to promote an understanding of the significance of the City's cultural resources, the criteria for historic designation, historic design review processes, building permit requirements, and methods for rehabilitating and preserving historic buildings, sites, and landscapes.

Policy HP-3.2: The Planning Division shall promote an understanding and appreciation of the importance of historic preservation by the City's departments, boards, commissions, and elected officials.

Objective HP-4: To fully integrate the consideration of cultural resources as a major aspect of the City's planning, permitting and development activities.

Policy HP-4.1: The City shall maintain an up-to-date database of cultural resources and use that database as a primary informational resource for protecting those resources.

Policy HP-4.2: The City shall apply the California State Historical Building Code to ensure that City building code requirements do not compromise the integrity of significant cultural resources, at the property owner’s request.

Policy HP-4.3: The City shall work with the appropriate tribe to identify and address, in a culturally appropriate manner, cultural resources and tribal sacred sites through the development review process.

Objective HP-5: To ensure compatibility between new development and existing cultural resources.

Policy HP-5.1: The City shall use its design and plot plan review processes to encourage new construction to be compatible in scale and character with cultural resources and historic districts.

Policy HP-5.2: The City shall use its design and plot plan review processes to encourage the compatibility of street design, public improvements, and utility infrastructure with cultural resources and historic districts.

Objective HP-6: To actively pursue funding for a first-class historic preservation program, including money needed for educational materials, studies, surveys, staffing, and incentives for preservation by private property owners.

Policy HP-6.1: The City shall provide financial incentives to promote the restoration, rehabilitation, and adaptive reuse of cultural resources.

Policy HP-6.2: The City shall use financial resources from state, federal and private programs that assist in the identification, designation and preservation of cultural resources.

Policy HP-6.3: The City shall ensure adequate funds in its budget for the staffing and maintenance of a historic preservation program in compliance with the California State Office of Historic Preservation's Certified Local Government program.

Objective HP-7: To encourage both public and private stewardship of the City's cultural resources.

Policy HP-7.1: The City shall apply code enforcement, zoning actions, and building safety/construction regulations as tools for helping to protect cultural resources.

Policy HP-7.2: The City shall incorporate preservation as an integral part of its specific plans, general plan, and environmental processes.

Policy HP-7.3: The City shall coordinate historic preservation with other activities within its government structure.

Policy HP-7.4: The City shall promote the preservation of cultural resources controlled by other governmental agencies, including those related to federal, state, county, school district, and other agencies.

Municipal Code

Title 20 of the City of Riverside's Municipal Code established the authority for preservation, the composition and administrative requirements of the Cultural Heritage Board, criteria for evaluating projects affecting cultural resources, and procedures for protecting and designating significant cultural resources. City approval is required to alter, demolish, or relocate historic resources. This process for preserving cultural resources is a major consideration in the City's planning and permitting actions.

City of Montclair

Chapter 11.56 of the City of Montclair's Preservation Ordinance provides guidelines for the preservation restoration and protection of historic and cultural resource within the city. The purpose of the ordinance is to:

- Encourage public knowledge, understanding, and appreciation of the city's past;
- Strengthen civic and neighborhood pride in the beauty and architecture of the past;
- Preserve diverse architectural styles and designs reflect phases of the city's heritage;
- Promote he enjoyment and use of cultural resources appropriate for the education and restoration of the city;
- Encourage new construction and exterior modification of historical building that compatible with the historical character of such buildings;
- Protect and enhance property values and provide possible added benefits to the city and its inhabitant through the exploration of creative financial incentives for preservation;
- Encourage the adaptive recycling or reuse of existing historic landmarks.

Paleontological Resources

CEQA

Paleontological resources are also afforded protection by CEQA. Appendix G (Part V) of the *CEQA Guidelines* provides guidance relative to significant impacts on paleontological resources,

stating that a project will normally result in a significant impact on the environment if it will "disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study."

California Public Resources Code (PRC) Section 5097.5

PRC Division 5, Chapter 1.7, Section 5097.5, and Division 20, Chapter 3, Section 30244 prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, and district) lands.

Society for Vertebrate Paleontology

Professional Standards

The Society for Vertebrate Paleontology (SVP) has established standard guidelines for acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most practicing professional paleontologists in the nation adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most California State regulatory agencies accept the SVP standard guidelines as a measure of professional practice.

Paleontological Sensitivity

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontological Resources," the SVP (1995) defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential:

- **High Potential.** Rock units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered and are considered to have a high potential for containing significant nonrenewable fossiliferous resources. These units include, but are not limited to, sedimentary formations and some volcanic formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical; and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Also classified as significant are areas that contain potentially datable organic remains older than Recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways.
- **Low Potential.** Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low

potentials for yielding significant fossils. Such units will be poorly represented by specimens in institutional collections.

- **Undetermined Potential.** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials.
- **No Potential.** Metamorphic and granitic rock units generally do not yield fossils and therefore have no potential to yield significant non-renewable fossiliferous resources.

For geologic units with high potential, full-time monitoring is generally recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts will not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontological potential of the rock units present within the study area.

4.5.3 Impacts and Mitigation Measures

Significance Criteria

Based on Appendix G of the *CEQA Guidelines*, cultural resources impacts would be considered significant if the project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 (see Impact 4.5-1, below);
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 (see Impact 4.5-2, below);
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (see Impact 4.5-3, below); or
- Disturb any human remains, including those interred outside of formal cemeteries (see Impact 4.5-4, below).

CEQA provides that a project may cause a significant environmental effect where the project could result in a substantial adverse change in the significance of a historical resource (Public Resources Code, Section 21084.1). *CEQA Guidelines* Section 15064.5 defines a "substantial adverse change" in the significance of a historical resource to mean physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be "materially impaired" (*CEQA Guidelines*, Section 15064.5[b][1]). Actions that would materially impair the significance of a historical resource are any actions that would demolish or adversely alter those physical characteristics of a historical resource that convey its historical significance and qualify it for inclusion in the California Register or in a local register or survey that meet the requirements of PRC Sections 5020.1(k) and 5024.1(g).

Methodology

CEQA Guidelines Section 15064.5 defines a "substantial adverse change" in the significance of a historical resource to mean physical demolition, destruction, relocation, or alteration of the

resource or its immediate surroundings such that the significance of a historical resource would be "materially impaired" (*CEQA Guidelines* Section 15064.5[b][1]).

CEQA Guidelines Section 15064.5(b)(2) defines "materially impaired" for purposes of the definition of "substantial adverse change" as follows:

The significance of a historical resource is materially impaired when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

In accordance with *CEQA Guidelines* Section 15064.5(b)(3), a project that follows the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* is considered to have mitigated impacts to historic resources to less than significant.

Impacts Discussion

Historical Resources

Impact 4.5-1: The proposed Project could cause a substantial adverse change in the significance of a historical resource.

Chino Basin Production Wells, Refurbishment and Treatment System

The SCCIC records search and cultural resources survey did not identify any cultural resources within the Chino Basin Production Wells, Refurbishment and Treatment System project area. Furthermore, the project would not involve substantial excavation of soils. Therefore, implementation of the Chino Basin Production Wells, Refurbishment and Treatment System project would not significantly impact known historical resources. Although no known cultural resources were identified within the Chino Basin Production Wells, Refurbishment and Treatment System project area, there exists the possibility that historic-period subsurface archaeological deposits associated with the project area's past agricultural uses underlie the project. Drilling activities may encounter subsurface resources. Should historic-period archaeological deposits underlie the Chino Basin Production Wells, Refurbishment and Treatment System project area, they may qualify as historical resources. Therefore, implementation of the Chino Basin Production Wells, Refurbishment and Treatment System project could impact potential historic-

period subsurface archaeological deposits that qualify as historical resources. Implementation of Mitigation Measure CUL-,4, which require provisions for the treatment of inadvertent discoveries, would reduce impacts to potential historic-period subsurface archaeological deposits that may underlie the Chino Basin Production Wells, Refurbishment and Treatment System project area to less than significant.

Arlington Production Wells and Pipeline

The EIC records search identified 17 previously recorded cultural resources within and immediately adjacent to (within 100 feet of) the Arlington project area. Of these 17 previously recorded resources, 1 is a prehistoric archaeological site (P−33−000496) that overlaps the Alternative 2 pipeline alignment on Indiana Avenue, and 16 are historic architectural resources (P−33−004495, −004791, −007899, −007900, −008407, −009518, −010974, −011251, −011632, −017542, −024194, −025594, −025595, −025596, −025597, and −028079) that occur within a 100-foot corridor along the alternative pipeline alignments, but do not overlap the alignments.

Of the 16 historic architectural resources, 9 (P−33−004495, −008407, −009518, −011251, −024194, −025594, −025596, −025597, and −028079) were relocated as a result of the cultural resources survey, and 7 (P−33−004791, −007899, −007900, −010974, −011632, −017542, and −025595) were not relocated and have likely been destroyed by recent development. Of the nine architectural resources that were relocated, three (P−33−004495 [Upper Riverside Canal], −008407 [Sherman Indian School Administration Building], and −009518 [Arlington Branch Library]) are recommended eligible for listing in the CRHR and qualify as historical resources, and six (P−33−011251, −024194, −025594, −025596, -025597, and -028079) have been recommended ineligible and therefore do not qualify as historical resources.

The Arlington project would include the installation of an underground pipeline within existing road right-of-ways, and as such would not directly impact the three resources that qualify or have the potential to qualify as historical resources (P−33−004495 [Upper Riverside Canal], −008407 [Sherman Indian School Administration Building], and −009518 [Arlington Branch Library]). However, the Arlington project's above-ground components, which include the installation of wells, do have the potential to result in indirect visual impacts to the three resources.

Well AD-6 of the Alternative 2 pipeline would be located within 175 feet of an above ground segment of the Upper Riverside Canal (P−33−004495) and the construction of the well could result in indirect visual impacts to the resource's integrity of setting and feeling. However, the resource is surrounded to the north, east, and south by modern residential development, which has already introduced visual elements affecting the integrity of setting and feeling of the resource. The proposed Alternative-2, Well AD-6 would simply add to the existing setting. Therefore, no new visual impacts affecting the integrity of the Upper Riverside Canal will be introduced by implementation of the Arlington project.

Well AD-6 of the Arlington project's Alternative 1 pipeline would be located approximately 475 feet southwest of the Sherman Indian School Administration Building (P−33−008407), but direct views of the resource from the well location would be obscured by an existing building

located immediately southeast of the administration building. Therefore, no visual impacts to the resource are anticipated as a result of the implementation of the Arlington project.

The Arlington Branch Library (P−33−009518) is not located in the vicinity of a proposed well location, and therefore would not be subject to visual impacts.

The EIC records search identified one previously recorded archaeological resource (P−33−000496) within the Arlington project area. As part of the cultural resources survey, the mapped location of the site was inspected, but the site's surface manifestation has been destroyed by residential development. Although no surface evidence of the site could be detected during the survey, there exists the potential that subsurface prehistoric archaeological deposits associated with the site may underlie the Arlington project area. Additionally, the historic map and aerial review indicates the Arlington project area was an agricultural community as early as 1900. Given the presence of one previously recorded prehistoric archeological site and the long-period of historic-period land use within the area, there is a possibility that prehistoric and/or historic-period subsurface archaeological deposits underlie the Arlington project area. Should subsurface prehistoric and/or historic-period archaeological deposits be present, they may qualify as historical resources pursuant to CEQA. Therefore, implementation of the Arlington project could impact potential subsurface archaeological deposits that may qualify as historical resources. Implementation of Mitigation Measures CUL-1, -2, -3, and -4, which require retention of a qualified archaeologist, cultural resources sensitivity training for construction personnel, archaeological monitoring of ground-disturbing activity, and provisions for the treatment of inadvertent discoveries, would reduce impacts to potential prehistoric and/or historic-period subsurface archaeological deposits that may underlie the Arlington project area to less than significant.

Cannon Pump Station Project

The EIC records search and cultural resources survey did not identify any cultural resources within the Cannon Pump Station project area. Therefore, implementation of the Cannon Pump Station project would not impact known historical resources. However, thick vegetation associated with a drainage in the center of the Cannon Pump Station project area obscured ground surface visibility, and much of the project area's central portion appears to be largely undisturbed and may be underlain by unknown archaeological deposits. Should unknown archaeological deposits underlie the Cannon Pump Station project area, they may qualify as historical resources. Therefore, ground-disturbing activities associated with the Cannon Pump Station project could impact unknown archaeological deposits that may qualify historical resources. Implementation of Mitigation Measures CUL-1, -2, and -4, which require retention of a qualified archaeologist, cultural resources sensitivity training for construction personal, and provisions for the treatment of inadvertent discoveries, would reduce impacts to potential subsurface archaeological deposits that may underlie the Cannon Pump Station project area to less than significant.

ID-4 CRA Crossing Refurbishment

The EIC records search identified one historic architectural resource, the Colorado River Aqueduct (P−33−011265) within the ID-4 CRA project area. The cultural resources survey did

not identify additional cultural resources. The Colorado River Aqueduct is eligible for listing in the CRHR and therefore qualifies as a historical resource. The ID-4 CRA project would consist of two alternative approaches (Alternatives 1 and 2) to cover the existing ID-4 CRA crossing to prevent the pipe from leaking. The ID-4 project alternatives would not demolish, destroy, or otherwise alter the Colorado River Aqueduct (P−33−011265). Therefore, the ID-4 CRA project would not impact a known historical resource.

Additionally, because the activities associated with both of the ID-4 CRA project alternatives would not include ground-disturbing activities, there would be no impacts to unknown subsurface archaeological resources that qualify as historical resource, should they underlie the project area. Therefore, implementation of the ID-4 CRA project would not impact known or unknown historical resources and no mitigation is necessary.

Santa Ana River Arundo Removal

The EIC records search identified 17 previously recorded cultural resources within the Arundo Removal project area. These 17 resources include three prehistoric archaeological sites (P−33−000621, −000622, and −000652), four historic-period archaeological sites (P−33−002802, −003354, −003357, and −003694), two multicomponent archaeological sites (P−33−000127 and −001451), six historic architectural resources (P−33−003361 [Union Pacific RR bridge], −006524 [Good Samaritan Boys Home], −016848 [Santa Ana River Trunk Sewer], −017221 [LynnBar Ranch], −024052 [Paradise Knolls Golf Course], and −024146 [storage shed]), and two historic-period isolates (P−33−012736 and −017220).

Of the six historic architectural resources, two (P−33−003361 [Union Pacific RR bridge] and −006524 [Good Samaritan Boys Home]) have been previously recommended eligible for listing in the CRHR and qualify as historical resources pursuant to CEQA, one (P−33−024146 [storage shed]) has not been previously evaluated and therefore has the potential to qualify as a historical resource, and three (P−33− 016848 [Santa Ana River Trunk Sewer], −017221 [LynnBar Ranch], and −024052 [Paradise Knolls Golf Course]) are recommended ineligible for listing in the CRHR and do not qualify as historical resources. The totals three resources (P−33−003361 [Union Pacific RR bridge], −006524 [Good Samaritan Boys Home], and −024146 [storage shed]) that are eligible or potentially eligible for listing in the CRHR. The Arundo Removal project would include the removal of invasive plant species from within the Santa Ana River channel using hand tools and tractor-mounted mulchers. These activities would not demolish, destroy, or otherwise alter the three historic architectural resources that qualify as historical resources.

Of the 11 archaeological resources, 3 (P−33−000127, −003354, and −003694) have been recommended eligible for listing in the CRHR and qualify as historical resources, 6 (P−33−000621, −000622, −000652, −001451, −003357, and −002802) have not been evaluated for listing in the CRHR and therefore have the potential to qualify as historical resource, and 2 (P−33−012736 and −017220) are historic-period isolates, which, based on their lack of cultural context, are not eligible for listing in the CRHR and do not qualify as historical resources. Therefore, nine archaeological resources are either eligible for listing in the CRHR and are historical resources, or are being treated as historical resources for this project.

The Arundo Removal project would include the removal of invasive plant species from within the Santa Ana River channel using hand tools and tractor-mounted mulchers. Given the ground-disturbing nature of these activities, the Arundo Removal project could impact the nine archaeological resources that qualify or have the potential to qualify as historical resources pursuant to CEQA.

In addition to the nine known archaeological resources, there may be unknown archaeological resources within the Arundo Removal project area. Should unknown archaeological resources exist within the Arundo Removal project area, they may qualify as historical resources, and ground-disturbing activities associated with the Arundo Removal project could impact these resources. However, the Arundo Removal activities would be conducted within the river channel that is periodically subject to high flow events that move sediment and remove vegetation. The constantly changing sediment load may transport resources from upstream, disrupting the context of the resources. Furthermore, conducting pre-activity surveys of the treatment areas is impractical due to the density of the vegetation. Ground surfaces are generally not visible within the stands of arundo.

Implementation of Mitigation Measure CUL-1, -2, and -4, which require the retention of a qualified archaeologist, cultural resources sensitivity training for construction personnel, and provisions for the treatment of inadvertent discoveries, would reduce potential Arundo Removal project impacts to known and unknown archaeological resources that qualify or have the potential to qualify as historical resources to less than significant.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

CUL-1: **Retention of Qualified Archaeologist**. Prior to the start of ground-disturbing activities associated with the Arlington Production Wells and Pipeline project, the Cannon Pump Station project, and the Santa Ana River Arundo Removal project, the respective project lead agencies shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2008) to carry out all mitigation related to cultural resources.

CUL-2: **Cultural Resources Sensitivity Training.** Prior to start of ground-disturbing activities associated with the Arlington Production Wells and Pipeline project, the Cannon Pump Station project, and the Santa Ana River Arundo Removal project, the qualified archaeologist shall conduct cultural resources sensitivity training for all construction personnel associated with the four projects. Construction personnel will be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. The respective project lead agencies shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

CUL-3: **Arlington Production Wells and Pipeline Project Construction Monitoring.** Prior to the start of ground-disturbing activities associated with the Arlington Production Wells and Pipeline project, an archaeological monitor working under the supervision of the qualified archaeologist shall be retained to conduct monitoring of all project-related ground-disturbing activities within 100 feet of the mapped location of previously recorded prehistoric archaeological resource, P−33−000496. Based on observations of subsurface soil stratigraphy or other factors during initial ground-disturbing activities, the qualified archaeologist may reduce monitoring, as warranted. Archaeological monitors shall maintain daily logs documenting their observations. Monitoring activities shall be documented in a Monitoring Report to be prepared by the qualified archaeologist. A draft monitoring report shall be submitted to WMWD for review and comment. A final monitoring report shall be submitted to WMWD for their records and a copy will be filed with the Eastern Information Center.

CUL-4: **Inadvertent Discoveries.** In the event of the unanticipated discovery of archaeological materials during implementation of the Chino Basin Production Wells, Refurbishment and Treatment System project, the Arlington Production Wells and Pipeline project, the Cannon Pump Station project, and the Santa Ana River Arundo Removal project, all work shall immediately cease within 100 feet of the discovery until it can be evaluated by the qualified archaeologist. Construction shall not resume until the qualified archaeologist has conferred with the respective project lead agency on the significance of the resource. If it is determined that the discovered archaeological resource constitutes a historical resource or a unique archaeological resource pursuant to CEQA, avoidance and preservation in place is the preferred manner of mitigation. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a permanent conservation easement. If preservation in place is demonstrated to be infeasible and data recovery through excavation is the only feasible mitigation available, a Cultural Resources Treatment Plan shall be prepared and implemented by the qualified archaeologist in consultation with the respective project lead agency that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource. The qualified archaeologist and County shall consult with appropriate Native American representatives in determining treatment for prehistoric or Native American resources to ensure cultural values ascribed to the resource, beyond that which is scientifically important, are considered.

Significance Determination after Mitigation: Less than Significant

Archeological Resources

Impact 4.5-2: The proposed Project could cause a substantial change in the significance of a unique archeological resource.

Chino Basin Production Wells, Refurbishment and Treatment System

As noted above, the SCCIC records search and cultural resources survey did not identify archaeological resources within the Chino Basin Production Wells, Refurbishment and Treatment System project area. Furthermore, the project would not involve substantial excavation of soils. Therefore, implementation of Chino Basin Production Wells, Refurbishment and Treatment System project would not significantly impact known archaeological resources that qualify as unique archaeological resources. Although no known archaeological resources were identified within the Chino Basin Production Wells, Refurbishment and Treatment System project area, there is a possibility that historic-period subsurface archaeological deposits associated with the project area's past agricultural uses underlie the project. Drilling activities may encounter subsurface resources. Should historic-period archaeological deposits underlie the Chino Basin Production Wells, Refurbishment and Treatment System project area, they may qualify as unique archaeological resources. Therefore, implementation of the Chino Basin Production Wells, Refurbishment and Treatment System project could impact these potential archaeological deposits. Implementation of Mitigation Measure CUL-4 would reduce impacts to subsurface archaeological deposits that qualify as unique archaeological resources to less than significant.

Arlington Production Wells and Pipeline

As noted above, the EIC records identified one previously recorded archaeological resource (P−33−000496) within the Arlington project area. As part of the cultural resources survey, the mapped location of the site was inspected, but the site's surface manifestation has been destroyed by residential development. Although no surface evidence of the site could be detected during the survey, there is a possibility that the subsurface portion of the site underlies the Arlington project area. Additionally, the historic map and aerial review indicates the Arlington project area was an agricultural community as early as 1900. Given the presence of one previously recorded prehistoric archeological site and the long span of historic-period land use within the area, there is a potential that prehistoric and/or historic-period subsurface archaeological deposits underlie the Arlington project area. Should subsurface archaeological deposits be present, they may qualify as unique archaeological resources pursuant to CEQA. Therefore, implementation of the Arlington project could impact subsurface archaeological deposits that may qualify as unique archaeological resources. Implementation of Mitigation Measures CUL-1, -2, -3, and -4, which require the retention of a qualified archaeologist, cultural resources sensitivity training for construction personnel, archaeological monitoring of ground-disturbing activity, and provisions for the treatment of inadvertent discoveries, would reduce impacts to unique archaeological deposits that may underlie the Arlington project area to less than significant.

Cannon Pump Station Project

As noted above, the EIC records search and cultural resources survey did not identify the presence of archaeological resources within the Cannon Pump Station project area. Therefore, implementation of the Cannon Pump Station project would not impact known archaeological

resources. However, thick vegetation associated with a drainage in the center of the Cannon Pump Station project area obscured ground surface visibility, and much of the project area's central portion appears to be largely undisturbed and may be underlain by unknown archaeological deposits. Should unknown archaeological deposits underlie the Cannon Pump Station project area, they may qualify as unique archaeological resources. Therefore, ground-disturbing activities associated with the Cannon Pump Station project could impact unknown archaeological deposits that qualify as unique archaeological resources. Implementation of Mitigation Measures CUL-1, -2, and -4, which require the retention of a qualified archaeologist, cultural resources sensitivity training for construction personnel, and provisions for the treatment of inadvertent discoveries, would reduce impacts to potential subsurface archaeological deposits that may underlie the Cannon Pump Station project area to less than significant.

ID-4 CRA Crossing Refurbishment

As, noted above, the EIC records search did not identify any archaeological resource within the ID-4 CRA project area. Furthermore, the activities associated with the two ID-4 CRA project alternatives would not include ground-disturbing activities that have the potential to impact subsurface archaeological resources. Therefore, implementation of the ID-4 CRA project would not impact known or unknown unique archaeological resources and no mitigation is necessary.

Santa Ana River Arundo Removal

As noted above, the EIC records search identified 11 previously recorded archaeological resources within the Arundo Removal project area, including three prehistoric archaeological sites (P−33−000621, −000622, and −000652), four historic-period archaeological sites (P−33−002802, −003354, −003357, and −003694), two multicomponent archaeological sites (P−33−000127 and −001451), and two historic-period isolates (P−33−012736 and −017220). Of the 11 previously recorded archaeological resources, 3 (P−33−000127, −003354, and −003694) have been recommended eligible for listing in the CRHR and qualify as historical resources. Archaeological resources that qualify as historical resources are not considered unique archaeological resources. Therefore, resources P−33−000127, −003354, and −003694 do not qualify as unique archaeological resources.

Of the 11 archaeological resources, 6 (P−33−000621, −000622, −000652, −001451, −003357, and −002802) have not been evaluated for listing in the CRHR and so have the potential to qualify as unique archaeological resources. The remaining two archaeological resources (P−33−012736 and −017220) are historic-period isolates, which, based on their lack of cultural context, do not qualify as unique archaeological resources.

The six archaeological resources (P−33−000621, −000622, −000652, −001451, −003357, and −002802) that have the potential to qualify as unique archaeological resources are located within the Arundo Removal project area. The Arundo Removal project would include the removal of invasive plant species from within the Santa Ana River channel using hand tools and tractor-mounted mulchers. Given the ground-disturbing nature of these activities, the Arundo Removal project could impact the six previously documented archaeological resources that may qualify as unique archaeological resources.

In addition to these six known resources, there may be previously undocumented archaeological resources within the Arundo Removal project area. Should unknown archaeological resources exist within the Arundo Removal project area, they may qualify as unique archaeological resources, and ground-disturbing activities associated with the Arundo Removal project could impact these resources. However, the Arundo Removal activities would be conducted within the river channel that is periodically subject to high flow events that move sediment and remove vegetation. The constantly changing sediment load may transport resources from upstream, disrupting the context of the resources. Furthermore, conducting pre-activity surveys of the treatment areas is impractical due to the density of the vegetation. Ground surfaces are generally not visible within the stands of arundo.

Implementation of Mitigation Measures CUL-1, -2, and -4, which require the retention of a qualified archaeologist, cultural resources sensitivity training for construction personnel, and provisions for the treatment of inadvertent discoveries, would reduce potential Arundo Removal project impacts to archaeological resources that have the potential to qualify as unique archaeological resources to less than significant.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

Implementation of Mitigation Measures CUL-1 through CUL-4 is required.

Significance Determination after Mitigation: Less than Significant

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Paleontological Resources

Impact 4.5-3: The proposed Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Chino Basin Production Wells, Refurbishment and Treatment System

The LACM paleontological database records search indicates that surface deposits within the proposed Chino Basin Production Wells, Refurbishment and Treatment System project area consist of younger Quaternary gravels, which are unlikely to contain significant vertebrate fossils in the uppermost layers. However, these deposits may be underlain at unknown depths by older Quaternary Alluvium, which may contain significant fossil vertebrate remains. Previously record fossil localities in the vicinity of the Chino Basin Production Wells, Refurbishment and Treatment System project area occur in older Quaternary Alluvium similar to that underlying the project area at depths of 15–20 feet below the ground surface. The Chino Basin Production Wells, Refurbishment and Treatment System project would include the installation of a conveyance pipe from Well 34 and connected to eight concrete slabs. Anticipated depths of pipeline excavation range from 5–15-10 feet deep. As a result, encountering paleontological resources is not likely. Implementation of Mitigation Measure CUL-8 would ensure potential impacts to unique paleontological resources or unique geologic features resulting from the construction of the Chino Basin Production Wells, Refurbishment and Treatment System project are less than significant.

Arlington Production Wells and Pipeline

The LACM paleontological database records search indicates that many of the surface deposits within the Arlington project area consist of younger Quaternary Alluvium, which are unlikely to contain significant vertebrate fossils in the uppermost layers, but may be underlain by Older Quaternary deposits, which have the potential to contain significant fossil vertebrate remains. Surface exposures of Older Quaternary deposits are located in the northeastern and southwestern portion of the Arlington project. The Arlington project would construct two production wells and a conveyance pipeline. These activities would likely intrude into Older Quaternary deposits, and have the potential to significantly impact paleontological resources and/or unique geologic features. Implementation of **Mitigation Measures CUL-5 through CUL-8** is required to ensure potential impacts to unique paleontological resources or unique geologic features resulting from the construction of the Arlington project are less than significant.

Cannon Pump Station Project

The LACM paleontological resources database records search indicates that the Cannon Pump Station project area is underlain by intrusive igneous rock, which does not have the potential to contain significant vertebrate fossils. Therefore, the Cannon Pump Station project does not have the potential to significantly impact paleontological and/or unique geologic features, and no mitigation is required.

ID-4 CRA Crossing Refurbishment

The LACM paleontological resource database records search indicates that surficial deposits with the ID-4 CRA Crossing project area consist either of artificial fill or younger Quaternary deposits, both of which have low potential for containing significant vertebrate fossils. However, these deposits may be underlain by older Quaternary deposits, which have surface exposures south of the ID-4 CRA Crossing project area and have the potential to contain significant vertebrate fossils. Previously recorded fossil localities in the vicinity of the ID-4 CRA Crossing project area have produced fossil specimens of horse and camel originating from older Quaternary deposits. The ID-4 CRA Crossing project would implement one of two refurbishment alternatives to ensure the ID-4 Crossing pipe located at the existing CRA intake facility is protected. The two alternatives would not include ground-disturbing activities and, therefore, do not have the potential to significantly impact paleontological resources and/or unique geologic features. No mitigation is required.

Santa Ana River Arundo Removal

The LACM paleontological database records search indicates that much of the Arundo Removal project area is characterized by shallow surface deposits of younger Quaternary Alluvium or active wash deposits from the Santa Ana River, which would likely not contain significant vertebrate fossils in the uppermost layers. However, these deposits are likely underlain at relatively shallow depths by older sedimentary deposits that may contain significant fossil vertebrate remains. Previously recorded fossil localities in the vicinity of the Arundo Removal project area have produced fossil specimens originating in older Quaternary Alluvium at depths of 9–10 feet below the ground surface.

The Arundo Removal project would remove invasive vegetation from the surface of the Santa Ana River channel using several techniques including removal by hand tools, tractor-mounted mulching mowers, and arm-mounted tractor/cutter, or through the application of herbicides. These activities would be limited to the surface of the Santa Ana River channel, and project-related ground disturbance likely would not penetrate the ground surface, and if they did, the intrusion would be relatively shallow. Therefore, the Arundo Removal project would not significantly impact paleontological resources or unique geologic features and no mitigation is required.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

CUL-5: **Retention of a Qualified Paleontologist:** Prior to the start of ground-disturbing activities associated with the Arlington Production Wells and Pipeline project, the respective lead agencies shall retain a qualified paleontologist meeting the Society for Vertebrate Paleontology's professional standards (2010) to carry out all mitigation measures related to paleontological resources.

CUL-6: **Paleontological Resources Sensitivity Training:** Prior to the start of ground-disturbing activities associated with the Arlington Production Wells and Pipeline project, the qualified paleontologist shall conduct a paleontological resources sensitivity training for all construction personnel working on the project. This may be conducted in conjunction with the archaeological resources training required by Mitigation Measure CUL-2. The training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, protocols for avoidance and subsequent immediate notification of the qualified paleontologist for further evaluation and action, as appropriate, and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources. The respective project lead agencies shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

CUL-7: **Paleontological Resources Construction Monitoring**. The qualified paleontologist, or a paleontological monitor working under the direct supervision of the qualified paleontologist, shall conduct periodic spot checks during excavation greater than 10 feet deep associated with the Arlington Production Wells and Pipeline project. In the event that sensitive Quaternary older alluvial deposits are observed during spot check monitoring, the qualified paleontologist may make recommendations to modify the spot check protocols, which could include implementation of monitoring of a greater duration. Likewise, if monitoring observations suggest no potential for paleontological materials, the paleontologist may recommend to reduce or to discontinue the spot checks. The paleontological monitor shall prepare daily logs. After construction has been completed, a report that details the results of the spot check monitoring will be prepared and submitted to the lead agency.

CUL-8: **Inadvertent Discovery of Paleontological Resources:** In the event of the unanticipated discovery of paleontological resources during implementation of the Chino Basin Production Wells, Refurbishment and Treatment System project and the Arlington Production Wells and Pipeline project, all work shall immediately cease in the area (within approximately 100 feet) of the discovery until it can be evaluated by a qualified paleontologist. The qualified paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository. Construction shall not resume until the qualified paleontologist has conferred with the lead agency on the significance of the resource.

Significance Determination after Mitigation: Less than Significant

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Human Remains

Impact 4.5-4: The proposed Project could disturb human remains.

No known human remains exist within the five proposed project areas. However, ground-disturbing activities associated with the five projects have the potential, albeit small, to unearth, expose, or disturb previously unknown human remains. Implementation of **Mitigation Measure CUL-9** would reduce potential impacts to human remains to less than significant.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

CUL-9: **Inadvertent Discovery of Human Remains:** If human remains are uncovered during implementation of the Chino Basin Production Wells, Refurbishment and Treatment System project, the Arlington Production Wells and Pipeline project, the Cannon Pump Station project, the ID-4 CRA Crossing Refurbishment project, and the Santa Ana River Arundo Removal project, all work within 100 feet of the find shall be immediately halted, and the County coroner shall be contacted to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the *CEQA Guidelines*. If the County Coroner determines that the remains are Native American, the City shall contact the California Native America Heritage Commission (NAHC), in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC 5097.98 (as amended by AB 2641). The NAHC shall then identify a Most Likely Descendant (MLD) of the

deceased Native American, who shall then help determine what course of action should be taken in the disposition of the remains.

Per PRC 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section (PRC 5097.98), with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

Significance Determination after Mitigation: Less than Significant

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4.6 Geology, Soils, and Seismicity

This section evaluates the potential for the proposed Project to result in adverse impacts related to geologic, seismic, and soils hazards. The analysis is based on review of available geologic and geotechnical reports and maps of the Project area, the relevant regulatory framework, and a discussion of the methodology and thresholds used to determine whether the proposed Project would result in significant impacts.

4.6.1 Environmental Setting

Regional Geology

San Bernardino County

The northern portion of the Project area within San Bernardino County lies within the Transverse Ranges geomorphic province, which is characterized by an east-west trending series of steep mountain ranges and valleys. The east-west structure of the Transverse Ranges is oblique to the normal northwest trend of coastal California, hence the name "Transverse." Its eastern extension, the San Bernardino Mountains, has been displaced to the south along the San Andreas Fault. Intense north-south compression is squeezing the Transverse Ranges. As a result, this is one of the most rapidly rising regions on earth. Great thicknesses of Cenozoic petroleum-rich sedimentary rocks have been folded and faulted, making this one of the important oil producing areas in the United States.

Quaternary alluvial deposits and recent soils comprise the majority of the stratigraphy of San Bernardino County. Other strata may include Tertiary marine and non-marine non-sedimentary and volcanic units; Mesozoic marine sedimentary; metasedimentary, metavolcanic and plutonic rocks, Paleozoic sedimentary and metasedimentary units; and Precambrian igneous and metamorphic rocks (ESA 2017).

Riverside County

The southern portion of the Project area within Riverside County lies within the Peninsular Ranges geomorphic province, which is a series of ranges separated by northwest trending valleys and subparallel to faults branching from the San Andreas Fault. The trend of topography is similar to the Coast Ranges, but the geology is more like the Sierra Nevada, with granitic rock intruding the older metamorphic rocks. The Peninsular Ranges extend into lower California and are bound on the east by the Colorado Desert. The Los Angeles Basin and the island group (Santa Catalina, Santa Barbara, and the distinctly terraced San Clemente and San Nicolas islands), together with the surrounding continental shelf (cut by deep submarine fault troughs), are included in this province.

Quaternary alluvial deposits and recent soils comprise the majority of the stratigraphy of northern Riverside County. Other strata may include Tertiary marine and non-marine non-sedimentary and volcanic units; Mesozoic marine sedimentary; metasedimentary, metavolcanic and plutonic rocks,

Paleozoic sedimentary and metasedimentary units; and Precambrian igneous and metamorphic rocks (ESA 2017).

Local Geology, Soils, and Topography

Chino Basin

The Chino Basin area is an alluvial valley that is relatively flat from east to west, sloping north to south at a one to two percent grade. Basin elevation ranges from 2,000 feet amsl adjacent to the San Gabriel Mountain foothills to approximately 500 feet amsl near Prado Basin. The project area is bordered to the north by the San Gabriel Mountains; to the east by the Rialto-Colton Basin, the Jurupa Mountains and the Riverside County/San Bernardino County boundary; to the south by the Prado Basin; and to the west by the Chino Hills, and the Pomona and Claremont Basins (IEUA 2000). Soils within the Chino Basin generally include deep well-drained sands, sandy loams, silty loams on level alluvial basins and fans; and shallow to deep, well to excessively drained, sandy loams on foothills and upland areas (ESA 2017).

Riverside-Arlington Basin

The City of Riverside is generally comprised of granite and adamellite (g_{ra}), mesozoic granitic rock (g_r), granodiorite(g_{rg}), mesozoic basic intrusive rocks (b_i), and alluvium (Q_{al}) (located around the Santa Ana River). Most are dated from the Mesozoic period, except for the alluvium which dated from the Quaternary. The area contains soil associations that are sandy and silty sands. These soils are generally well-drained sandy loams that are moderately deep and have a low to moderate shrink swell factor (NRCS 2016).

Santa Ana River

The Santa Ana River drains for over 100 miles from the San Bernardino Mountains to the valley floor of the Inland Empire, through the Prado Basin and on to Orange County and the Pacific Ocean. Elevations of the Santa Ana River range from 1,950 feet above mean sea level (amsl) in the San Bernardino Basin Area to 480 feet amsl at the Prado Basin area. The Santa Ana River bed and adjacent area are primarily comprised of silty and sandy loams common to alluvial washes and/or rivers with San Bernardino Valley. The majority of soils consist of psamments, which are soils that are sandy in all layers and have no soil horizons (NRCS 2016).

Geologic Hazards

Based on the geologic data reviewed during preparation of this EIR, the potential geologic hazards at the proposed project sites include erosion and expansive soil, as discussed in this section. Liquefaction, landslides, and lateral spreading, while possible without seismic shaking, are more commonly triggered by a seismic event, as discussed further below in seismic hazards.

Soil Erosion

Erosion is the wearing away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of water and wind. Factors contributing to soil erosion

include: climate, the physical characteristics of soils, topography, land use, and the amount of soil disturbance. Soil erosion is the detachment and movement of soil materials through natural processes or human activities. Natural processes include water, landslide, fire, flood, and wind. Man-made causes could include inappropriate grading and other construction practices, removal of vegetative cover, use of off-road vehicles, and other indiscriminate disruptions of soil. Excessive soil erosion can eventually damage infrastructure such as pipelines, wellheads, building foundations, and roadways. In general, granular soils with relatively low cohesion and soils located on steep topography have a higher potential for erosion.

Expansive Soils

Expansive soils contain significant amounts of clay particles that have the ability to give up water (shrink) or take on water (swell), changing their volume. When these soils change volume, the change can exert pressures on loads that are placed on them, such as loads resulting from building and structure foundations or underground pipes and utilities, and can result in structural distress and/or damage. Grading, site preparations, and backfill operations associated with subsurface structures can reduce the potential for expansion. Linear extensibility and plasticity are used to describe the shrink-swell potential of soils. If linear extensibility is greater than 3 percent (classified as moderate potential), shrinking and swelling can cause damage to buildings, roads, and other structures (NRCS 2014).

Seismicity and faults

Southern California is a region of high seismic activity with numerous active and potentially active faults. Earthquakes along the San Andreas Fault relieve convergent plate stress in the form of right lateral strike slip offsets. The Transverse Ranges work as a block causing the San Andreas Fault to bend, producing compressional stresses that are manifested as reverse, thrust, and right lateral faults. Faulting associated with the compressional forces creates earthquakes and is primarily responsible for the mountain building, basin development, and regional upwarping found in this area. Most of Southern California is located within Seismic Zone 4, which is defined by the International Building Code (IBC, which replaced the Uniform Building Code) as the zone with the highest potential for seismic hazards to occur. Seismic zones are based on a statistical compilation of the number and the magnitude of past earthquakes.

This section provides background on seismic terminology, characterizes the region's existing faults, describes historical earthquakes, estimates the likelihood of future earthquakes, and describes probable groundshaking effects.

Earthquake Terminology and Concepts

Earthquake Mechanisms and Fault Activity

Faults are planar features within the earth's crust that have formed to release strain caused by the dynamic movements of the earth's major tectonic plates. An earthquake on a fault is produced when these strains overcome the inherent strength of the earth's crust, and the rock ruptures. The rupture causes seismic waves that propagate through the earth's crust, producing the

groundshaking effect known as an earthquake. The rupture also causes variable amounts of slip along the fault, which may or may not be visible at the earth's surface.

Geologists commonly use the age of offset rocks as evidence of fault activity—the younger the displaced rocks, the more recently earthquakes have occurred. To evaluate the likelihood that a fault would produce an earthquake, geologists examine the magnitude and frequency of recorded earthquakes and evidence of past displacement along a fault. The California Geological Survey (CGS) defines an active fault as one that has had surface displacement within Holocene time (within the last 11,000 years; the U.S. Geological Survey [USGS] uses within the last 15,000 years). A Quaternary fault is defined as a fault that has shown evidence of surface displacement during the Quaternary period (the last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not mean that a fault lacking evidence of surface displacement is necessarily inactive. The term "sufficiently active" is also sometimes used to describe a fault if there is some evidence that Holocene displacement has occurred on one or more of its segments or branches (Hart 1997).

For the purpose of delineating fault rupture zones, the CGS historically sought to zone faults defined as potentially active, which are faults that have shown evidence of surface displacement during the Quaternary period (the last 1.6 million years). In late 1975, the State geologist made a policy decision to zone only those faults that had a relatively high potential for ground rupture, determining that a fault should be considered for zoning only if it was sufficiently active and "well defined."[1] Faults that are confined to pre-Quaternary rocks (more than 1.6 million years old) are considered inactive and incapable of generating an earthquake.

Earthquake Magnitude

When an earthquake occurs along a fault, its size can be determined by measuring the energy released during the event. A network of seismographs records the amplitude and frequency of the seismic waves that an earthquake generates. The Richter magnitude (ML) of an earthquake represents the highest amplitude measured by the seismograph at a distance of 100 kilometers from the epicenter. Richter magnitudes vary logarithmically with each whole-number step, representing a tenfold increase in the amplitude of the recorded seismic waves and 32 times the amount of energy released. While Richter magnitude was historically the primary measure of earthquake magnitude, seismologists now use Moment Magnitude (Mw) as the preferred way to express the size of an earthquake. The Mw scale is related to the physical characteristics of a fault, including the rigidity of the rock, the size of fault rupture, and the style of movement or displacement across the fault. Although the formulae of the scales are different, they both contain a similar continuum of magnitude values, except that Mw can reliably measure larger earthquakes and do so from greater distances.

[1] A fault is considered well defined if its trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The fault may be identified by direct observation or by indirect methods (e.g., geomorphic and geophysical evidence). The critical consideration is that the fault, or some part of it, can be located in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success.

Peak Ground Acceleration

A common measure of ground motion at any particular site during an earthquake is the peak ground acceleration (PGA). The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared. In terms of automobile acceleration, one "g" of acceleration is equivalent to the motion of a car traveling 328 feet from rest in 4.5 seconds. For comparison purposes, the maximum PGA value recorded during the Loma Prieta earthquake in the vicinity of the epicenter, near Santa Cruz, was 0.64 g. Unlike measures of magnitude, which provide a single measure of earthquake energy, PGA varies from place to place and is dependent on the distance from the epicenter and the character of the underlying geology (e.g., hard bedrock, soft sediments, or artificial fills). PGA and other ground acceleration units are used by geotechnical engineers to design structures to withstand that level of seismic shaking.

Modified Mercalli Intensity Scale

The Modified Mercalli Intensity Scale assigns an intensity value based on the observed effects of groundshaking produced by an earthquake. Unlike measures of earthquake magnitude and PGA, the Modified Mercalli Intensity Scale is qualitative in nature in that it is based on actual observed effects rather than measured values. Similar to PGA, Modified Mercalli values for an earthquake at any one place can vary depending on the earthquake's magnitude, the distance from its epicenter, the focus of its energy, and the type of geologic material. The Modified Mercalli values for intensity range from I (earthquake not felt) to XII (damage nearly total), and intensities ranging from IV to X can cause moderate to significant structural damage. Because the Modified Mercalli scale is a measure of groundshaking effects, intensity values can be correlated to a range of average PGA values, as shown in **Table 4.6-1**.

Fault Rupture and Seismic Shaking

The following sections summarize the Alquist-Priolo Earthquake Fault Zones (active faults), and seismic shaking potential along the Santa Ana River and within each of the four Conjunctive Use Program basin areas. The locations of active Alquist-Priolo Earthquake Fault Zones are illustrated on **Figure 4.6-1.**

Liquefaction and Landslide Hazards

Soil liquefaction is a phenomenon whereby unconsolidated and/or near saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The loss of soil strength during strong earthquake shaking could result in the temporary fluid-like behavior of the soil. During liquefaction, soils lose strength and ground failure may occur. Secondary ground failures associated with liquefaction include lateral spreading or flowing of stream banks or fills, sand boils, and subsidence. Areas characterized by water-saturated, cohesionless, and granular soils are most susceptible to liquefaction and usually at depths of less than 50 feet, especially in areas with a shallow water table. The groundwater table can fluctuate greatly in association with groundwater recharge activities, both natural and artificial. During years of high groundwater

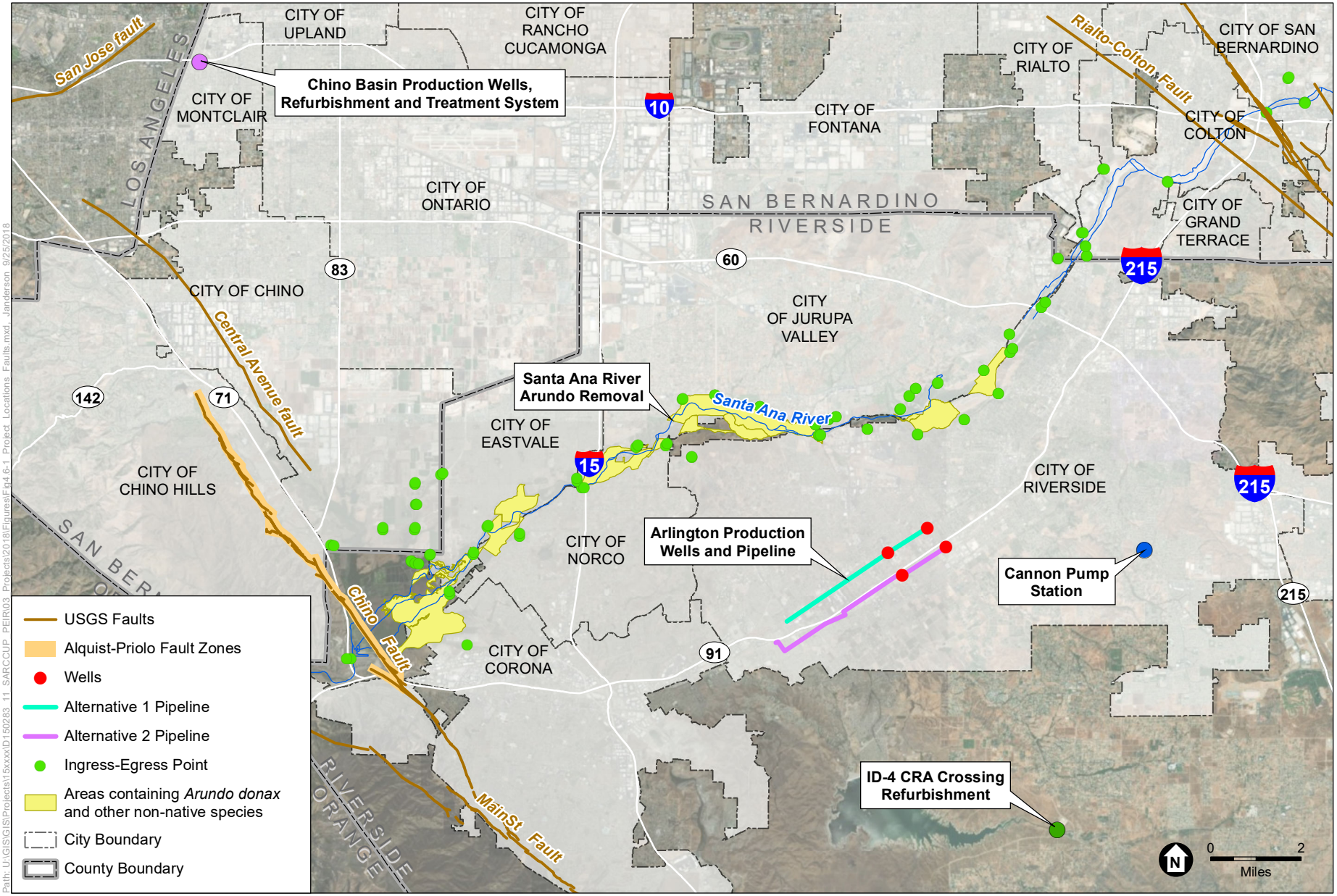
recharge, the groundwater table could potentially be shallow enough to present a liquefaction hazards.

TABLE 4.6-1
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Ground Acceleration(a)
I	Not felt	< 0.0017 g
II	Felt by people sitting or on upper floors of buildings	0.0017 to 0.014 g
III	Felt by almost all indoors. Hanging objects swing. Vibration like passing of light trucks. May not be recognized as an earthquake.	0.0017 to 0.014 g
IV	Vibration felt like passing of heavy trucks. Stopped cars rock. Hanging objects swing. Windows, dishes, doors rattle. Glasses clink. In the upper range of IV, wooden walls and frames creak.	0.014 to 0.039 g
V (Light)	Felt outdoors. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing. Pictures move. Pendulum clocks stop..	0.035 to 0.092 g
VI (Moderate)	Felt by all. People walk unsteadily. Many frightened. Windows crack. Dishes, glassware, knickknacks, and books fall off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster, adobe buildings, and some poorly built masonry buildings cracked. Trees and bushes shake visibly.	0.092 to 0.18 g
VII (Strong)	Difficult to stand or walk. Noticed by drivers of cars. Furniture broken. Damage to poorly built masonry buildings. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices, unbraced parapets and porches. Some cracks in better masonry buildings. Waves on ponds.	0.18 to 0.34 g
VIII (Very Strong)	Steering of cars affected. Extensive damage to unreinforced masonry buildings, including partial collapse. Fall of some masonry walls. Twisting, falling of chimneys and monuments. Wood-frame houses moved on foundations if not bolted; loose partition walls thrown out. Tree branches broken.	0.34 to 0.65 g
IX (Violent)	General panic. Damage to masonry buildings ranges from collapse to serious damage unless modern design. Wood-frame structures rack, and, if not bolted, shifted off foundations. Underground pipes broken.	0.65 to 1.24 g
X (Very Violent)	Poorly built structures destroyed with their foundations. Even some well-built wooden structures and bridges heavily damaged and needing replacement. Water thrown on banks of canals, rivers, lakes, etc.	> 1.24 g
XI (Very Violent)	Few, if any, masonry structures remain standing. Bridges destroyed. Rails bent greatly. Underground pipelines completely out of service.	> 1.24 g
XII (Very Violent)	Damage nearly total. Practically all works of construction are damaged greatly or destroyed. Large rock masses displaced. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown into the air.	> 1.24 g

[a] Value is expressed as a fraction of the acceleration due to gravity (g). Gravity (g) is 9.8 meters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

SOURCES: ABAG, 2016; CGS, 2003.



SOURCE: ESRI; Riverside County; San Bernardino County; USGS

SARCCUP

Figure 4.6-1

Fault Zones near SARCCUP Project Locations

ESA

Landslides are the down-slope displacement of rock, soils and debris. The susceptibility of land (slope) failure is dependent on slope and geological formations and influenced by levels of rainfall, excavation, or seismic activities. Steep slopes and downslope creep of surface materials characterize landslide-susceptible areas.

Subsidence

Subsidence of the ground surface can occur under static conditions (i.e., due to consolidation settlement from overlying load or long-term groundwater extraction) but can also be accelerated and accentuated by earthquakes and tectonic activity. Subsidence of loose, unconsolidated soils generally occurs slowly, but can cause significant structural damage.

4.6.2 Regulatory Framework

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act became law in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazard of fault rupture and to prohibit the location of most structures for human occupancy[2] across these traces. Cities and counties must regulate certain development projects within the zones, which includes withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement. Surface fault rupture is not necessarily restricted to an Alquist-Priolo Zone. Each earthquake fault zone extends approximately 200 to 500 feet on either side of the mapped fault trace, because many active faults are complex and consist of more than one branch. There is the potential for ground surface rupture along any of the branches. This Act applies to this project because active faults pass through or near some of the project sites.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code, Chapter 7.8, Section 2690-2699.6) was adopted to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating ground failure caused by strong earthquakes, namely liquefaction and slope failure. The Seismic Hazards Mapping Act requires the State Geologist to delineate seismic hazard zones, also known as "zones of required investigation", where regional (that is, not site-specific) information suggests that the probability of a hazard requiring mitigation is adequate to warrant a site-specific investigation. The fact that a site lies outside a zone of required investigation does not necessarily mean that the site is free from seismic or other geologic hazards. Where a project—defined by the act as any structures for human occupancy or any subdivision of land that contemplates the eventual construction of structures for human occupancy—is within a zone of required investigation, lead agencies must apply minimum criteria for project approval. The most basic criteria for project approval are that the owner/developer adequately demonstrates

[2] Title 14 of the California Code of Regulations (CCR), §3601(e), defines buildings intended for human occupancy as those that would be inhabited for more than 2,000 hours per year, or about 38 hours per week, which would include facilities with full time (40 hours per week) occupation.

seismic hazards at the site have been evaluated in a geotechnical investigation, that appropriate mitigation measures have been proposed, and that the lead agency has independently reviewed the adequacy of the hazard evaluation and proposed mitigation measures. Both the geotechnical report and the independent review must be performed by a certified engineering geologist or registered civil engineer. These criteria, along with seismic hazard evaluation and mitigation standards, are outlined in CGS Special Publication 117A, revised and re-adopted in September of 2008 by the State Mining and Geology Board (CGS 2008b).

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress to facilities (entering and exiting), and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The 2016 edition of the CBC is based on the 2015 International Building Code (IBC) published by the International Code Council, which replaced the Uniform Building Code. The code is updated triennially, and the 2016 edition of the CBC was published by the California Building Standards Commission on July 1, 2016, and takes effect starting January 1, 2017. The 2016 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-16, *Minimum Design Loads for Buildings and Other Structures*, provides requirements for general structural design and includes means for determining earthquake loads[3] as well as other loads (such as wind loads) for inclusion into building codes. Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. The prescribed lateral forces are generally smaller than the actual peak forces that would be associated with a major earthquake. Consequently structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake. However, it is reasonable to expect that a structure designed in-accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

[3] A load is the overall force to which a structure is subjected in supporting a weight or mass, or in resisting externally applied forces. Excess load or overloading may cause structural failure.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a seismic design category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; SDC ranges from A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major fault). Seismic design specifications are determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), load-bearing of soils (1806), as well as foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810). For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

The design of the proposed Project is required to comply with CBC requirements, which would make the proposed Project consistent with the CBC.

NPDES Construction General Permit

Construction associated with the proposed Project would disturb more than one acre of land surface affecting the quality of stormwater discharges into waters of the U.S. The proposed Project would therefore be subject to the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The Construction General Permit regulates discharges of pollutants in stormwater associated with construction activity to waters of the U.S. from construction sites that disturb one or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface. The permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines.

The Construction General Permit requires that construction sites be assigned a Risk Level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and the receiving waters risk during periods of soil exposure (e.g., grading and site stabilization). The sediment risk level reflects the relative amount of sediment that could potentially be discharged to receiving water bodies and is based on the nature of the construction activities and the location of the site relative to receiving water bodies. The receiving waters risk level reflects the risk to the receiving waters from the sediment discharge. Depending on the risk level, the construction projects could be subject to the following requirements:

- Effluent standards
- Good site management "housekeeping"
- Non-stormwater management
- Erosion and sediment controls
- Run-on and runoff controls
- Inspection, maintenance, and repair
- Monitoring and reporting requirements

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific BMPs designed to prevent sediment and pollutants from contacting stormwater from moving off site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP is required to contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The SWPPP must be prepared before the construction begins. The SWPPP must contain a site map(s) that delineates the construction work area, existing and proposed buildings, parcel boundaries, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project area. The SWPPP must list BMPs and the placement of those BMPs that the applicant would use to protect stormwater runoff. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing and fueling. The Construction General Permit also sets post-construction standards (i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site following construction).

In the project areas, the Construction General Permit would be implemented and enforced by the Santa Ana RWQCB, which administers the stormwater permitting program. Dischargers are required to electronically submit a notice of intent (NOI) and permit registration documents (PRDs) in order to obtain coverage under this Construction General Permit. Dischargers are responsible for notifying the RWQCB of violations or incidents of non-compliance, as well as for submitting annual reports identifying deficiencies of the BMPs and how the deficiencies were corrected. The risk assessment and SWPPP must be prepared by a state Qualified SWPPP Developer and implementation of the SWPPP must be overseen by a state Qualified SWPPP Practitioner. A Legally Responsible Person, who is legally authorized to sign and certify PRDs, is responsible for obtaining coverage under the permit. This permit would apply to the projects where more than one acre would be disturbed.

4.6.3 Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the significance of impacts related to geology, soils and minerals are based on Appendix G of the *CEQA Guidelines*, as modified by *California Building Industry Association v. Bay Area Air Quality Management District* and currently being updated by the state. The proposed Project would result in a significant impact to geology and paleontological resources if it would:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (see Impact 4.6-1, below)
  - Strong seismic ground shaking (see Impact 4.6-1, below)
  - Seismic-related ground failure, including liquefaction (see Impact 4.6-1, below)
  - Landslides (see Impact 4.6-1, below)
- Result in substantial soil erosion or the loss of topsoil (see Impact 4.6-2, below);
- Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence (i.e., settlement), liquefaction, or collapse (see Impact 4.6-3, below);
- Be located on expansive soil, as defined in Section 1803.5.3 of the CBC4, creating substantial direct or indirect risks to life or property (see Impact 4.6-4, below); and
- Have soils incapable of adequately supporting the use of septic tanks or alternative reclaimed water disposal systems where sewers are not available for the disposal of reclaimed water (see Methodology below).
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (see Impact 4.6-6, below).

4 The CBC, based on the International Building Code and the now defunct Uniform Building Code, no longer includes a Table 18-1-B. Instead, Section 1803.5.3 of the CBC describes the criteria for analyzing expansive soils.

Impacts Discussion

Impact 4.6-1: The proposed Project would not expose people or structures to adverse geologic effects, including the risk of loss, injury or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map or based on other substantial evidence of a known fault; strong seismic ground shaking; or seismic-related ground failure, including liquefaction or landslides.

None of the Project facilities would be located within an Alquist-Priolo Fault Zone and thus not located adjacent to an active fault that would be susceptible to fault rupture (refer to Figure 4.6-1). However, the entire Project area lies within a region that is seismically active. Multiple "potentially active" and "active faults" are located near the Project area, and the closest Alquist-Priolo Fault Zone to the Project area is the Chino Fault, located just west of the southwestern-most *Arundo donax* removal site in the Santa Ana River.

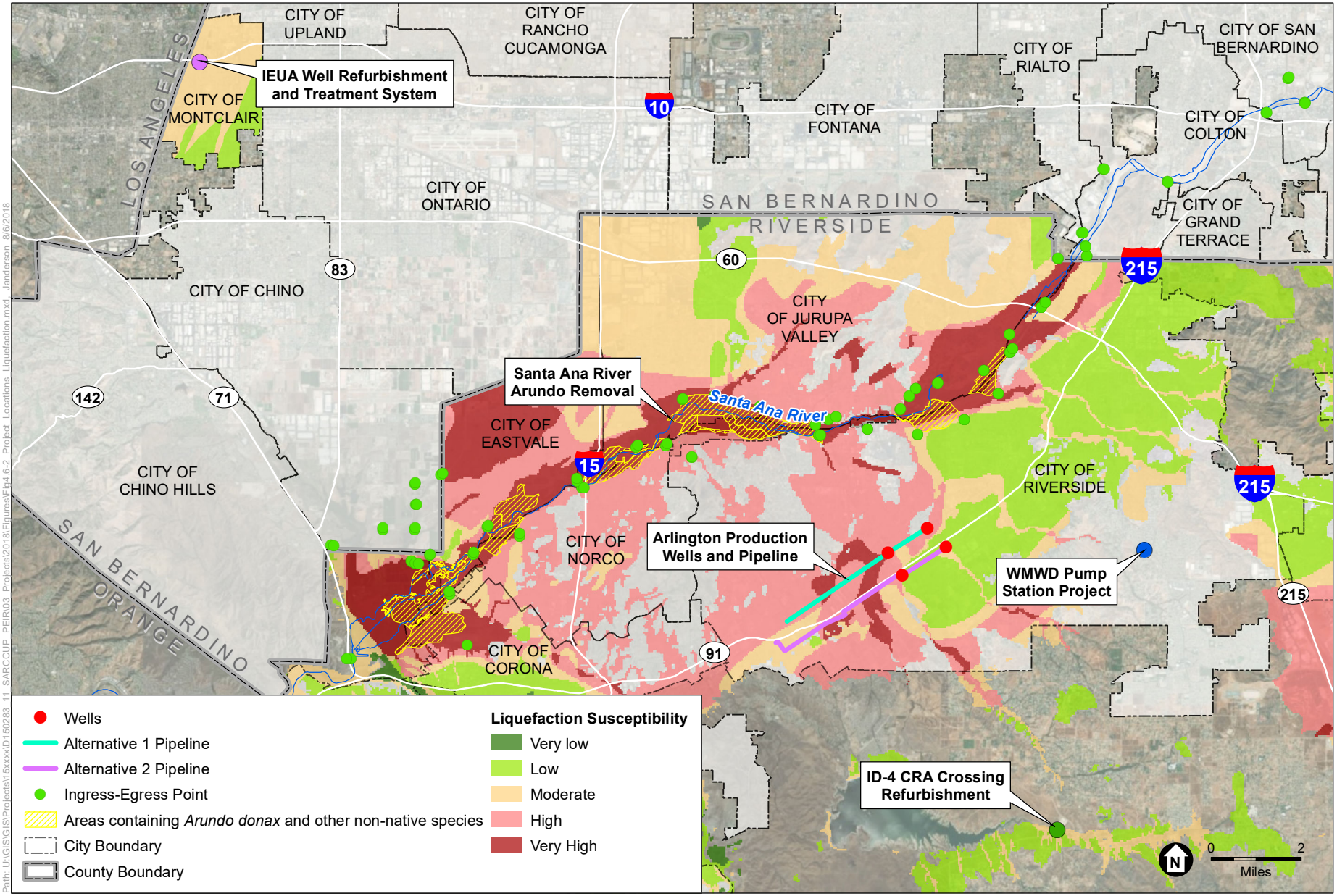
Seismic ground shaking and liquefaction could affect the integrity of above ground structures and underground pipelines. **Figure 4.6-2** illustrates areas with elevated liquefaction hazards. Prior to construction, standard practices require the preparation of site-specific geotechnical investigations and incorporation of structural recommendations into facility designs, potential impacts associated with ground shaking to reduce the potential for seismic hazards to affect the integrity of structures. The proposed projects would not increase the risk of seismic hazards for other neighboring land uses. Impacts would be than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant



SOURCE: ESRI; Riverside County; San Bernardino County; City of Montclair

SARCCUP

Figure 4.6-2

Liquefaction near SARCCUP Project Locations

ESA

Soil Erosion or Topsoil Loss

Impact 4.6-2: The proposed Project would not result in substantial soil erosion or the loss of topsoil.

Construction of the above ground facilities, wells and pipelines would require minor grading and drilling. Construction activities would be subject to the Construction General NPDES Permit which requires implementation of various BMPs, including erosion- and sedimentation-control BMPs on site designed to prevent stormwater-driven and wind-driven erosion and the movement of topsoil off site. Therefore, erosion would be minimized during groundwater well construction. Operation of the groundwater wells and pipelines would not result in topsoil disturbance or erosion. Impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Unstable Geologic Location

Impact 4.6-3: The proposed Project would not be located on a geologic unit or soil that is unstable or that would become unstable as a result of the proposed projects and potentially result in on-or off-site landslide, subsidence, or collapse.

None of the proposed projects would increase hazards of landslides, lateral spreading, or soil instability that results in subsidence or collapse. Prior to construction, standard practices require the preparation of site-specific geotechnical investigations and incorporation of structural recommendations into facility designs that would reduce potential impacts associated with unstable soils to reduce the potential for geologic hazards to affect the integrity of structures. The proposed projects would not increase the risk of unstable geology for other neighboring land uses. Impacts would be than less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Expansive Soil

Impact 4.6-4: The proposed Project would not be located on expansive soils as defined in 24 CCR 1803.5.3 of the California Building Code (2016), creating substantial risks to life or property.

None of the proposed projects would increase hazards of expansive soils. Prior to construction, standard practices require the preparation of site-specific geotechnical investigations and incorporation of structural recommendations into facility designs that would reduce potential impacts associated with expansive soils to reduce the potential for geologic hazards to affect the integrity of structures. The proposed projects would not increase the risk of unstable geology for other neighboring land uses. Impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Wastewater Disposal Systems

Impact 4.6-5: The proposed Project would not be located on soils incapable of adequately supporting the use of septic tanks or alternative reclaimed water disposal systems where sewers are not available for the disposal of reclaimed water.

None of the proposed projects would increase the need for wastewater disposal systems. There would be no impact.

Significance Determination before Mitigation: No Impact

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: No Impact

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4.7 Greenhouse Gas Emissions

This section provides a discussion of global climate change, existing regulations pertaining to global climate change, and potential greenhouse gas (GHG) emissions resulting from development of the proposed Project. Impacts related to GHGs and climate change are analyzed and mitigation measures are provided for any potentially significant impacts.

4.7.1 Environmental Setting

Affected Environment

This section presents a discussion of existing climate conditions, the current state of climate change science, and GHG emissions sources in California.

Climate

The proposed Project is located in the Counties of San Bernardino and Riverside within the South Coast Air Basin, which has a distinctive climate determined by its terrain and geographic location. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climate is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds.

Climate Change Overview

Gases that trap heat in the atmosphere are called GHGs. The major concern with GHGs is that increases in their concentrations are causing global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, most in the scientific community agree that there is a direct link between increased emissions of GHGs and long term global temperature increases.

The State defines GHGs as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Because different GHGs have different global warming potentials (GWPs) and CO_2 is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO_2 equivalents (CO_2e). For example, CH_4 has a GWP of 25 (over a 100-year period); therefore, one metric ton (MT) of CH_4 is equivalent to 25 MT of CO_2 equivalents ($MTCO_2e$). The GWP ratios for the are available from the United Nations Intergovernmental Panel on Climate Change (IPCC) and are published in the *Fourth Assessment Report* (AR4). By applying the GWP ratios, project-related CO_2e emissions can be tabulated in MT per year. Large emission sources are reported in million metric tons (MMT) of CO_2e.[1]

[1] A metric ton is 1,000 kilograms; it is equal to approximately 1.1 U.S. tons and approximately 2,204.6 pounds.

Some of the potential effects in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more forest fires, and more drought years (CARB 2008). Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (IPCC 2001):

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas;
- Reduced diurnal temperature range over most land areas;
- Increase of heat index over land areas; and
- More intense precipitation events.

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.

CARB compiles that State's GHG emissions inventory. The most updated inventory is referred to as the 2017 edition, which reports the State's GHG emissions inventory from calendar year 2015. Based on the 2015 GHG inventory data (i.e., the latest year for which data are available from CARB), California emitted 440.4 million metric tons of CO_2e (MMT CO_2e) including emissions resulting from imported electrical power. (CARB 2017) Between 1990 and 2015, the population of California grew by approximately 9.3 million (from 29.8 to 39.1 million). (US Census 2018) This represents an increase of approximately 31 percent from 1990 population levels. In addition, the California economy, measured as gross state product, grew from $773 billion in 1990 to $2.49 trillion in 2015 representing an increase of approximately 222 percent (just over three times the 1990 gross state product). (CA LAO 2014) Despite the population and economic growth, California's net GHG emissions only grew by approximately 2.2 percent. According to CARB, the declining trend coupled with the state's GHG reduction programs (such as the Renewables Portfolio Standard, Low Carbon Fuel Standard (LCFS), vehicle efficiency standards, and declining caps under the Cap and Trade Program) demonstrate that California is on track to meet the 2020 GHG reduction target codified in California Health and Safety Code (HSC), Division 25.5, also known as The Global Warming Solutions Act of 2006 (AB 32) (CEC 2006).

The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain significant scientific uncertainties in, for example, predictions of local effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the Earth's climate system and inability to accurately model it, the uncertainty surrounding climate change may never be completely

eliminated. Nonetheless, the IPCC's *Fifth Assessment Report, Summary for Policy Makers* states that, "it is *extremely likely* that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forc[es [*sic*] together." (IPCC 2013) A report from the National Academy of Sciences concluded that 97 to 98 percent of the climate researchers most actively publishing in the field support the tenets of the IPCC in that climate change is very likely caused by human (i.e., anthropogenic) activity. (Anderegg 2010) According to CARB, the potential impacts in California due to global climate change may include: loss in snow pack; sea level rise; more extreme heat days per year; more high ozone days; more large forest fires; more drought years; increased erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation. (Cal EPA 2006)

4.7.2 Regulatory Framework

Federal

The United States Environmental Protection Agency (USEPA) is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane, and other non-carbon dioxide gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the Energy Star labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

On December 7, 2009, the USEPA Administrator made two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act (CAA). The USEPA adopted a Final Endangerment Finding for the six defined GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

President George W. Bush signed Executive Order 13432 on May 14, 2007, directing the USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. Executive Order (EO) 13432 was codified into law by the 2009 Omnibus Appropriations Law signed on February 17, 2009. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. In addition, the order requires more widespread use of Environmental Management

Systems as the framework in which to manage and continually improve these sustainable practices. This Executive Order requires federal agencies to lead by example in advancing the nation's energy security and environmental performance by achieving the following goals:

Energy Efficiency: Reduce energy intensity 30 percent by 2015, compared to an FY 2003 baseline.

Greenhouse Gases: Reduce greenhouse gas emissions through reduction of energy intensity 30 percent by 2015, compared to an FY 2003 baseline.

Renewable Power: At least 50 percent of current renewable energy purchases must come from new renewable sources (in service after January 1, 1999).

Building Performance: Construct or renovate buildings in accordance with sustainability strategies, including resource conservation, reduction, and use; siting; and indoor environmental quality.

Water Conservation: Reduce water consumption intensity 16 percent by 2015, compared to an FY 2007 baseline.

Vehicles: Increase purchase of alternative fuel, hybrid, and plug-in hybrid vehicles when commercially available.

Petroleum Conservation: Reduce petroleum consumption in fleet vehicles by 2 percent annually through 2015, compared to an FY 2005 baseline.

Alternative Fuel: Increase use of alternative fuel consumption by at least 10 percent annually, compared to an FY 2005 baseline.

Pollution Prevention: Reduce use of chemicals and toxic materials and purchase lower risk chemicals and toxic materials.

Procurement: Expand purchases of environmentally sound goods and services, including bio-based products.

Electronics Management: Annually, 95 percent of electronic products purchased must meet Electronic Product Environmental Assessment Tool standards where applicable; enable ENERGY STAR® features on 100 percent of computers and monitors; and reuse, donate, sell, or recycle 100 percent of electronic products using environmentally sound management practices.

On May 19, 2009, President Obama announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy standards and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO_2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO_2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle. (USEPA 2012)

In addition to USEPA efforts to implement GHG reporting and monitoring systems, the Obama Administration on June 25, 2013 released *The President's Climate Action Plan* that promotes

efforts to reduce GHG emissions by deploying clean energy solutions, developing and deploying advanced transportation technologies, and cutting energy waste in homes, businesses, and factories. (White House 2016a) Additionally, federal agencies are committing to release Climate Change Adaptation Plans, which promote the construction of stronger and safer communities and infrastructure, protect the economy and natural resources, and use sound science to manage climate impacts.

In the most recent international climate change agreement adopted at the Paris UNFCCC climate conference in December 2015 ("Paris Accord"), the United States set its intended nationally determined contribution to reduce its greenhouse gas emissions by 26 to 28 percent below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28 percent. These targets were set with the goal of limiting global temperature rise to below 2 degrees Celsius and getting to the 80 percent emission reduction by 2050. (UNFCCC 2017)

However, on June 1, 2017, President Donald Trump issued a statement announcing that "the United States will cease all implementation of the non-binding Paris Accord and the draconian financial and economic burdens the agreement imposes on our country. This includes ending the implementation of the nationally determined contribution and, very importantly, the Green Climate Fund which is costing the United States a vast fortune." (White House 2017)

On August 3, 2015, President Obama and the EPA announced the Clean Power Plan. The Clean Power Plan sets achievable standards to reduce carbon dioxide emissions by 32 percent from 2005 levels by 2030. (White House 2016b) This Plan establishes final emissions guidelines for states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired electric generating units (EGUs). Specifically, the EPA is establishing: (1) carbon dioxide emission performance rates representing the best system of emission reduction for two subcategories of existing fossil fuel-fired EGUs, fossil fuel-fired electric utility steam generating units and stationary combustion turbines; (2) state-specific CO_2 goals reflecting the CO_2 emission performance rates; and (3) guidelines for the development, submittal and implementation of state plans that establish emission standards or other measures to implement the CO_2 emission performance rates, which may be accomplished by meeting the state goals. This final rule would continue progress already under way in the U.S. to reduce CO_2 emissions from the utility power sector. (USEPA 2016) On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan pending judicial review. In addition, EPA is currently proposing to repeal the Clean Power Plan after completing a thorough review as directed by the Executive Order on Energy Independence (as discussed below). (USEPA 2018) In sum, the Clean Power Plan continues to face multiple legal challenges and its future is uncertain.

On March 28, 2017, President Donald Trump signed Executive Order 13783, "Promoting Energy Independence and Economic Growth," which calls for:

- Review of the Clean Power Plan
- Review of the 2016 Oil and Gas New Source Performance Standards for New, Reconstructed, and Modified Sources

- Review of the Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Generating Units
- Withdrawal of Proposed Rules: Federal Plan Requirements for Greenhouse Gas Emissions From Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations; and Clean Energy Incentive Program Design Details[2]

Given this executive order, President Trump's decision to withdraw from the Paris Accord, and the Trump Administration's comments concerning climate change, the federal regulations on greenhouse gas emissions are currently uncertain.

State

In response to growing scientific and political concern regarding global climate change, in the last decade California has promulgated a series of executive orders, laws, and regulations aimed at reducing both the level of GHGs in the atmosphere and emissions of GHGs from commercial and private activities within the State.

California Air Resources Board

The CARB is a part of the Cal EPA responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards or CAAQs), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts. The SIP is required for the State to take over implementation of the federal CAA.

In 2004, CARB adopted an Airborne Toxic Control Measure (ACTM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants (Title 13 California Code of Regulations, Section 2485) (TACs). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California. CARB has also

[2] *See* https://www.epa.gov/energy-independence, Accessed July 9, 2017.

promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission controlled models. Refer to Section 4.1, *Air Quality* of this draft EIR, for additional details regarding these regulations. While these regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

Senate Bills and Executive Orders

Assembly Bill 1493. AB 1493 (also known as the Pavley Bill) requires that CARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHG emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State."

To meet AB 1493 requirements, CARB approved amendments to the California Code of Regulations (CCR) in 2004 by adding GHG emissions standards to California's existing standards for motor vehicle emissions. When fully phased in, the near-term standards would reduce GHG emissions by approximately 22 percent, compared to the 2002 fleet emissions, while the mid-term standards would reduce emissions by approximately 30 percent.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). The State passed the California Global Warming Solutions Act of 2006 (AB 32; *California Health and Safety Code* Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires a reduction in statewide GHG emissions to 1990 levels by 2020.

Senate Bill 1368. SB 1368 (Chapter 598, Statutes of 2006) is the companion bill of AB 32 and was signed into law in September 2006. SB 1368 required the CPUC to establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007. SB 1368 also required the California Energy Commission (CEC) to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas fired plant.

Senate Bill 97. SB 97, signed in August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA.

OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate project-related GHG emissions. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related vehicular

traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible. OPR requested CARB technical staff to recommend a method for setting CEQA thresholds of significance, as described in *CEQA Guidelines* Section 15064.7 that would encourage consistency and uniformity in CEQA GHG emissions analyses throughout the State.

The Natural Resources Agency adopted the CEQA Guidelines Amendments prepared by OPR, as directed by SB 97. On February 16, 2010, the Office of Administrative Law approved the CEQA Guidelines Amendments and filed them with the Secretary of State for inclusion in the CCR. The CEQA Guidelines Amendments became effective on March 18, 2010.

Senate Bill 375. SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires MPOs to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that would prescribe land use allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for passenger car and light truck regional emissions for 2020 and 2035. Reduction targets are updated every eight years; but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may be ineligible for funding programmed after January 1, 2012.

Senate Bill 32. Signed into law on September 8th 2016, SB 32 (Amendments to California Global Warming Solutions Act of 2006: Emission Limit) codifies the 2030 target in the recent Executive Order B-30-15 (40 percent below 1990 levels by 2030). The 2030 target is intended to ensure that California remains on track to achieve the goal set forth by E.O. B-30-15 to reduce Statewide GHG emissions by 2050 to 80 percent below 1990 levels. SB 32 states the intent of the Legislature to continue to reduce GHG for the protection of all areas of the state and especially the state's most disadvantaged communities which are disproportionately impacted by the deleterious effects of climate change on public health. (California Legislative Information 2016) SB 32 was passed with companion legislation AB 197, which provides additional direction for developing the Scoping Plan.

Senate Bills 1078 and 107. SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

Senate Bill 350. Known as the Clean Energy and Pollution Reduction Act of 2015, SB 350 (Chapter 547, Statutes of 2015) was approved by Governor Brown on October 7, 2015. SB 350 will (1) increase the standards of the California Renewable Portfolio Standard (RPS) program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) require the State Energy Resources Conservation and Development Commission to establish annual

targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provide for the evolution of the Independent System Operator into a regional organization; and (4) require the state to reimburse local agencies and school districts for certain costs mandated by the state through procedures established by statutory provisions. Among other objectives, the Legislature intends to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.[3]

Executive Order S-14-08. Executive Order S-14-08 expands the State's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring that 33 percent of electricity sold in the State come from renewable energy by 2020. CARB adopted the "Renewable Electricity Standard" on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-21-09. Executive Order S-21-09 directs CARB to adopt regulations to increase California's RPS to 33 percent by 2020. The target was signed into law as SB 2 by Governor Brown in April 2011. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010.

Executive Order S-3-05. Executive Order S-3-05 set forth the following targets for progressively reducing statewide GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The Executive Order directed the Secretary of the California Environmental Protection Agency (Cal EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary is also mandating that biannual reports be submitted to the California Governor and Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of Cal EPA created the California Climate Action Team (CAT), made up of members from various State agencies and commissions.

Executive Order S-20-06. On October 17, 2006, Governor Arnold Schwarzenegger signed EO S-20-06, which calls for continued efforts and coordination among state agencies to implement GHG emission reduction policies, AB 32, and the Health and Safety Code (Division 25.5) through a market-based compliance program. In addition, EO S-20-06 requires the development of GHG reporting and reduction protocols and a multistate registry through joint efforts among CARB, Cal EPA, and the California Climate Action Registry (CCAR). EO S-20-06 directs the

[3] SB-350 Clean Energy and Pollution Reduction Act of 2015. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350, Accessed July 9, 2017.

Secretary for Environmental Protection to coordinate with the CAT to plan incentives for market-based mechanisms that have the potential of reducing GHG emissions.

Executive Order S-1-07. Executive Order S-1-07 proclaims that the transportation sector is California's main source of GHG emissions, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs the CARB to determine whether this LCFS can be adopted as a discrete early-action measure, as part of the effort to meet AB 32 mandates.

Executive Order S-13-08. Executive Order S-13-08 seeks to enhance the State's management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of the State's first climate adaptation strategy. This would provide consistent guidance from experts on how to address climate change impacts in the State.

Executive Order B-16-2012. In March 23, 2012, Governor Brown issued EO B-16-2012 to encourage zero emission vehicles (ZEVs) and related infrastructure. It orders CARB, CEC, California Public Utilities Commission, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks concerning ZEVs. By 2020, the state's ZEV infrastructure should support up to one million vehicles. By 2025, EO B-16-2012 aims to put over 1.5 million ZEVs on California roads and displace at least 1.5 billion gallons of petroleum. The EO also directs state government to begin purchasing ZEVs. In 2015, 10 percent of state departments' light-duty fleet purchases must be ZEVs, climbing to 25 percent of light duty purchases by 2020. EO B-16-2012 sets a target for 2050 to reduce GHG emissions in the transportation sector by 80 percent below 1990 levels.[4]

Executive Order B-30-15. Executive Order B-30-15 added the interim target to reduce statewide GHG emissions 40 percent below 1990 levels by 2030 and requires CARB to update its current AB 32 Scoping Plan to identify measures to meet the 2030 target.

CARB Scoping Plan

On December 11th, 2008, CARB adopted its Scoping Plan, which functions as a roadmap to achieve the California GHG reductions required by AB 32 through subsequently enacted regulations. CARB's Scoping Plan contains the main strategies California would implement to reduce the projected 2020 Business as Usual (BAU) emissions to 1990 levels, as required by AB 32. These strategies are intended to reduce CO_2e[5] emissions by 174 MMT, or approximately 30 percent, from the State's projected 2020 emissions level of 596 MMT CO_2e under a BAU[6]

4 Office of Governor Edmund G. Brown Jr., *Executive Order B-16-2012,* http://gov.ca.gov/news.php?id=17472, Accessed September 12, 2016.

5 Carbon Dioxide Equivalent (CO_2e) - A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

6 "Business as Usual" refers to emissions expected to occur in the absence of any GHG reduction measure (California Environmental Protection Agency Air Resources Board Website, http://www.arb.ca.gov/cc/inventory/data/bau.htm, Accessed June 1, 2016). Note that there is significant controversy as to what BAU means. In determining the GHG 2020 limit, CARB used the above as the "definition."

scenario. This reduction of 42 million MT CO_2e, or almost ten percent from 2002 to 2004 average emissions, would be required despite the population and economic growth forecasted through 2020.

CARB's Scoping Plan calculates 2020 BAU emissions as those expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors (e.g., transportation, electrical power, commercial and residential, industrial, etc.). CARB used three-year average emissions, by sector, for 2002 to 2004 to forecast emissions to 2020. When CARB's Scoping Plan process was initiated, 2004 was the most recent year for which actual data was available. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32.

First Update to the Climate Change Scoping Plan (May 2014)

This First Update to California's Climate Change Scoping Plan (2014 Scoping Plan Update) was developed by the CARB in collaboration with the CAT and reflects the input and expertise of a range of state and local government agencies. The Update reflects public input and recommendations from business, environmental, environmental justice, utilities and community-based organizations provided in response to the release of prior drafts of the Update, a Discussion Draft in October 2013, and a draft Proposed Update in February 2014.

This report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. The First Update includes recommendations for establishing a mid-term emissions limit that aligns with the State's long-term goal of an emissions limit 80 percent below 1990 levels by 2050 and sector-specific discussions covering issues, technologies, needs, and ongoing State activities to significantly reduce emissions throughout California's economy through 2050. The focus areas include energy, transportation, agriculture, water, waste management, and natural and working lands. (CARB 2014) With respect to the transportation sector, California has outlined several steps in the State's ZEV Action Plan to further support the market and accelerate its growth. Committed implementation of the actions described in the plan will help meet Governor Brown's 2012 EO B-16-2012, which—in addition to establishing a more specific 2050 GHG target for the transportation sector of 80 percent from 1990 levels—called for 1.5 million ZEVs on California's roadways by 2025.

Achieving such an aggressive 2050 target will require innovation and unprecedented advancements in energy demand and supply (CARB 2014). Emissions from 2020 to 2050 will have to decline at more than twice the rate of that which is needed to reach the 2020 statewide emissions limit. In addition to our climate objectives, California also must meet federal clean air standards. Emissions of criteria air pollutants, including ozone precursors (primarily oxides of nitrogen, or NO_X) and particulate matter, must be reduced by an estimated 90 percent by 2032 to comply with federal air quality standards. The scope and scale of emission reductions necessary to improve air quality is similar to that needed to meet long-term climate targets. Achieving both objectives will align programs and investments to leverage limited resources for maximum benefit.

Second Update to the Climate Change Scoping Plan (November 2017)

On December 14, 2017, CARB approved the final version of *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for achieving the 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels (CARB 2017). The 2017 Scoping Plan Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water. Through a combination of data synthesis and modeling, CARB determined that the target Statewide 2030 emissions limit is 260 MMT CO_2e, and that further commitments will need to be made to achieve an additional reduction of 50 MMT CO_2e beyond current policies and programs. The cornerstone of the 2017 Scoping Plan Update is an expansion of the Cap-and-Trade program to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2050 limit set forth by E.O. B-30-15.

With respect to project-level GHG reduction actions and thresholds for individual development projects, the 2017 Scoping Plan Update indicates:

> *Beyond plan-level goals and actions, local governments can also support climate action when considering discretionary approvals and entitlements of individual projects through CEQA. Absent conformity with an adequate geographically-specific GHG reduction plan as described in the preceding section above, CARB recommends that projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize GHG emissions. Achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development. (CARB 2017)*

Renewable Energy: California Renewables Portfolio Standard Program

Established in 2002 under SB 1078, accelerated in 2006 under SB 107, expanded in 2011 under SB X1-2, and again in 2015 under SB 350, California's RPS is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 50 percent of total procurement by December 31, 2030.[7]

Regional

County of San Bernardino General Plan

The County of San Bernardino's 2007 General Plan does not contain a Greenhouse Gas Element, however one policy related to Greenhouse Gasses is discussed in the Air Quality Element:

Policy CO 4.13: Reduce Greenhouse Gas (GHG) emissions within the County boundaries.

[7] As of 2015, California's top three POUs were on track or ahead of their respective RPS targets, with PG&E, SCE and SDG&E reporting RPS procurements for 2020 at 29.5%, 24.5% and 35.2%, respectively (www.cpuc.ca.gov/rps_homepage/, accessed November 8, 2017).

Programs

1. Emission Inventories. The County will prepare GHG emissions inventories including emissions produced by: (1) the County's operational activities, services and facilities, over which the County has direct responsibility and control, and (2) private industry and development, that is located within the area subject to the County's discretionary land use authority.
   a) Establish an inventory of existing GHG emissions.
   b) Establish a projected inventory for year 2020.
2. GHG Emissions Reduction Plan. The County will adopt a GHG Emissions Reduction Plan that includes:
   a) Measures to reduce GHG emissions attributable to the County's operational activities, services and facilities, over which the County has direct responsibility and control; and,
   b) Measures to reduce GHG emissions produced by private industry and development that is located within the area subject to the County's discretionary land use authority and ministerial building permit authority; and,
   c) Implementation and monitoring procedures to provide periodic review of the plan's progress and allow for adjustments over time to ensure fulfillment of the plan's objectives.

County of San Bernardino GHG Reduction Plan

In response to initiatives for the reduction of GHG emissions, a partnership led by the San Bernardino Associated Governments (SANBAG), in cooperation with 21 cities within the county, compiled an inventory of GHG emissions and provided an evaluation of reduction measures that could be adopted, called the San Bernardino County Regional Greenhouse Gas Reduction Plan (SBC Reduction Plan). Published in March 2014, the SBC Reduction Plan includes a comprehensive analysis and inventory of GHG emissions within the unincorporated county areas and emissions from County government operations within municipalities, 2020 forecasted emissions, a set of reduction measures used to reduce 2020 emission levels down to the reduction targets for the county, and a monitoring and updating framework designed to keep the county on track toward achieving the reduction targets. SANBAG anticipates that individual cities may choose to use the plan to complete and adopt their own climate action plans with individual programs and policies tailored to each city's needs (SANBAG 2014).

County of Riverside General Plan

The County of Riverside General Plan currently does not address GHG emissions and climate change. However, the General Plan's Air Quality Element contains the following policies that address GHG emissions:

> **Policy AQ 18.1**: **Baseline emissions inventory and forecast.** Riverside County CAP has included baseline emissions inventory with data from the County's CO2e emissions, for specific sectors and specific years. The carbon inventory greatly aids the process of determining the type, scope and number of GHG reduction policies needed. It also facilitates the tracking of policy implementation and effectiveness. The carbon inventory

for the County consists of two distinct components; one inventory is for the County as a whole, as defined by its geographical borders and the other inventory is for the emissions resulting from the County's municipal operations.

Policy AQ 18.2: Adopt GHG emissions reduction targets. Pursuant to the results of the Carbon Inventory and Greenhouse Gas Analysis for Riverside County, future development proposed as a discretionary project pursuant to the General Plan shall achieve a greenhouse gas emissions reduction of 25% compared to Business As Usual (BAU) project in order to be found consistent with the County's Climate Action Plan (CAP).

Policy AQ 18.4: Implement policies and measures to achieve reduction targets. The County shall implement the greenhouse gas reduction policies and measures established under the County Climate Action Plan for all new discretionary development proposals.

Policy AQ 18.5: Monitor and verify results. The County shall monitor and verify the progress and results of the CAP periodically. When necessary, the CAPs "feedback" provisions shall be used to ensure that any changes needed to stay "on target" with stated goals are accomplished.

County of Riverside Climate Action Plan

The County of Riverside CAP was adopted in December 2015 and contains guidance on Riverside County's GHG inventory reduction goals, thresholds, policies and implementation programs. The County of Riverside CAP provides an analysis of GHG emissions and sources attributable to the county, estimates on how emissions are expected to increase, a timeline of implementation of the CAP, and a defined tracking and reporting mechanism that will measure progress toward the goals. In addition, the County of Riverside CAP provides a list of specific actions that will reduce GHG emissions in the County's jurisdiction to levels consistent with the target reductions of AB 32. The County of Riverside CAP is established as a qualified reduction plan for which future development within Riverside County can tier and thereby streamline the environmental analysis necessary under CEQA (County of Riverside 2015).

4.7.3 Impacts and Mitigation Measures

Significance Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to the significance of a project's impact on climate change. The issues presented in the Environmental Checklist have been utilized as thresholds of significance in this section. Accordingly, the Project would have a significant adverse environmental impact if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (see Impact 4.7-1, below); and
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases (see Impact 4.7-1, below).

At this time, there is no consensus in the State of California among CEQA lead agencies regarding the analysis of global climate change and selection of significance criteria. Numerous

organizations, both public and private, have released advisories and guidance with recommendations designed to assist decision makers in the evaluation of GHG emissions given the current uncertainty regarding emissions thresholds of significance.

CEQA leaves the determination of significance to the reasonable discretion of the lead agency and encourages lead agencies to develop and publish thresholds of significance to use in determining the significance of environmental effects. Lead agencies may elect to rely on thresholds of significance recommended or adopted by State or regional agencies with expertise in the field of global climate change (*CEQA Guidelines* Section 15064.7[c]).

As stated previously, the County of Riverside CAP is established as a qualified reduction plan for which future development within unincorporated Riverside County can tier and thereby streamline the environmental analysis necessary under CEQA (County of Riverside 2015). Portions of *Arundo donax* removal activity as well as the ID-4 CRA Crossing Refurbishment site are located within unincorporated Riverside County and GHG analysis for these two sites can be streamlined under CEQA utilizing the County of Riverside CAP. However, the CAP's GHG reduction measures concentrate on reducing operational emissions associated with continuing growth within the unincorporated county and include measures to conserve water and energy as well as the reduction in vehicle miles traveled. The proposed *Arundo donax* removal and ID-4 CRA Crossing Refurbishment activities primarily involve one-time construction emissions and, therefore, a BAU analysis for the Project would not be appropriate. Consistency with the applicable construction-related measures of the County of Riverside CAP for *Arundo donax* removal and construction activities associated with the ID-4 CRA Crossing Refurbishment has been qualitatively analyzed as part of Impact 4.7-2.

As a method for determining significance under CEQA under Impact 3.7-1, SCAQMD developed a draft tiered flowchart in 2008 for determining significance thresholds for GHGs for industrial projects where SCAQMD is acting as the lead agency. In December 2008, SCAQMD adopted a 10,000 MT CO_2e/year threshold for industrial facilities for projects where SCAQMD is the lead agency. SCAQMD has not adopted a threshold for GHG emissions generated by a project for which SCAQMD is not the lead agency, or a uniform methodology for analyzing impacts related to GHG emissions on global climate change, in the absence of any industry-wide accepted standards applicable to this project, the SCAQMD's significance threshold of 10,000 MTCO2e per for industrial projects is the most relevant air district-adopted GHG significance threshold and is used as a benchmark for the Project. It should be noted that the SCAQMD's significance threshold of 10,000 MT/year CO_2e for industrial projects is intended for long-term operational GHG emissions. The SCAQMD has developed guidance for the determination of the significance of GHG construction emissions that recommends that total emissions from construction be amortized over an assumed project lifetime of 30 years and added to operational emissions and then compared to the threshold. (SCAQMD 2008) Because all proposed activities would occur within the South Coast Air Basin and GHG emissions are inherently cumulative with respect to global climate change, construction emissions associated with all five components of the proposed Project have been totaled, amortized pursuant to SCAQMD methodology, and compared against the 10,000 MT/Year CO_2e threshold.

The two CEQA Guidelines Appendix G threshold questions are related because in order to avoid global environmental harm, emissions in the developed world must be reduced compared to today and policies have been developed to address this potential harm. Therefore, it is necessary to consider Project emissions in the context of overall policy consistency.

Implementation of applicable Project components that are determined to have "Potentially Significant Impacts," based on the above-listed significance thresholds, are analyzed below, along with the proposed Project design features and required mitigation measures, as warranted, to avoid or minimize such impacts.

Methodology

The Climate Action Registry General Reporting Protocol provides procedures and guidelines for calculating and reporting GHG emissions from general and industry-specific activities. Although no numerical thresholds of significance have been adopted, and no specific protocols are available for land use projects, the General Reporting Protocol provides a framework for calculating and reporting GHG emissions from the Project. The GHG emissions provided in this section is consistent with the General Reporting Protocol framework. This technical report provides an estimate of the GHG emissions from Project construction. The following Project-related emission sources have been evaluated:

1. Construction Activities – Fossil fueled on- and off-road vehicles and equipment needed for well drilling, pipeline installation, and grading.

For purposes of this analysis, it is considered reasonable and consistent with criteria pollutant calculations to consider Project construction activities such as demolition, hauling, and construction worker trips. Since potential impacts resulting from GHG emissions are long-term rather than acute, GHG emissions are calculated on an annual basis. CalEEMod outputs GHG emissions of CO_2, CH_4, N_2O, and CO_2e. In order to report total GHG emissions using the CO_2e metric, the GWP ratios corresponding to the warming potential of CO_2 over a 100-year period is used in this analysis.

GHG emissions are estimated using the CalEEMod, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California.[8]

[8] South Coast Air Quality Management District, California Emissions Estimator Model (CalEEMod), http://www.aqmd.gov/caleemod/.

Construction Emissions

Construction of the proposed Project has the potential to generate GHG emissions through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the Project areas. Construction emissions can vary from day to day, depending on the level of activity, the specific type of operation, and the prevailing weather conditions. The number and types of construction equipment, vendor trips (e.g., transport of building materials), and worker trips were based on project-specific information where possible. A complete listing of the construction equipment by phase and construction phase duration assumptions used in this analysis is included within the CalEEMod printout sheets in Appendix B.

The CO_2e emissions are calculated for the construction period in order to estimate Project GHG emissions. The SCAQMD guidance, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*, recognizes that construction-related GHG emissions from projects "occur over a relatively short-term period of time" and that "they contribute a relatively small portion of the overall lifetime project GHG emissions." (SCAQMD 2008) The guidance recommends that construction project GHG emissions should be "amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies." (SCAQMD 2008) However, as the Project has no operational component, and thus no operational emissions, construction emissions will be used to determine Project consistency with significance thresholds.

Construction of the Project would result in one-time GHG emissions of CO_2 and smaller amounts of CH_4 from heavy-duty construction equipment. Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the off-road emissions factors. The output values used in this analysis are adjusted to be Project-specific based on equipment types and the construction schedule. These values are applied to the construction phasing assumptions to generate GHG emissions values for construction.

Construction of the Project would also contribute to regional GHG emissions from haul trucks and worker vehicles. Running GHG emissions were divided by the VMT of each respective vehicle class from each scenario year and adjusted for unit conversions to derive emission factors in units of grams per VMT. The emissions from mobile sources were calculated with the trip rates, trip lengths and emission factors for running from EMFAC2014 through CalEEMod.

Consistency with Applicable Plans and Policies

A consistency analysis will be provided which describes the extent the Project complies with or exceeds performance-based standards included in the regulations outlined in the applicable portions of the Climate Change Scoping Plan, RTP/SCS, and the County of Riverside CAP.

Impacts Discussion

Construction Emissions

Impact 4.7-1: The proposed Project would not generate greenhouse gas emissions that has a significant impact on the environment.

The following analysis evaluates potential impacts associated with construction of the Project components including emissions from on-site equipment, worker, and vendor trips. **Table 4.7-1** presents the total estimated GHG emissions for the construction of the Project components in annual MT CO_2e. GHG emissions are cumulative and typically the amortized construction emissions are added to the increase in operational emissions and compared to the regional threshold. In this case, operational activities would be minimal, including maintenance vehicles occasionally traveling to and from the facilities. Therefore, only construction emissions have been accounted for in annual GHG emissions increases. As shown in Table 4.7-1, the amortized construction emissions are below the regulatory threshold of 10,000 MT CO_2e and therefore emissions would be less than significant.

TABLE 4.7-1
UNMITIGATED CONSTRUCTION GHG EMISSIONS (MT CO2E)[a]

Source	MT CO_2e
Arlington Production Wells and Pipeline	2,452
Cannon Pump Station	2,811
ID-4 CRA Crossing Refurbishment	228
Chino Basin Production Wells, Refurbishment and Treatment System	509
Santa Ana River Arundo Removal	1,083
Total Project Emissions	**7,084**
Amortized Construction Emissions [b]	**236**
Threshold	10,000
Exceeds Threshold?	**No**

[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix B.

[b] Emissions are amortized over an anticipated 30-year project lifetime.

SOURCE: ESA, 2018

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

GHG Reduction Planning

Impact 4.7-2: The proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The significance of GHG emissions from the Project is evaluated based on whether the Project is consistent with the relevant statewide and regional mandates, plans, policies and regulations designed to reduce GHG emissions. The following analysis evaluates potential impacts associated with construction of the Project elements.

Consistency with CARB Scoping Plan

The CARB Scoping Plan was designed to reduce GHG emissions from new land use projects. The proposed Project includes the construction of groundwater well facilities, pipeline installation, pump stations and vegetation removal with minimal long-term operational activities. While the proposed Project would not directly support the CARB Scoping Plan, the implementation of the Project would not hinder implementation either. Therefore, the proposed Project would be consistent with the Scoping Plan measures by not interfering with the implementation of the measures for reducing GHG emissions.

Consistency with SB 375

The key goal of the SCS is to achieve GHG emission reduction targets through integrated land use and transportation strategies. The focus of these reductions is on transportation and land use strategies that influence vehicle travel. The proposed Project would not increase long-term vehicle traffic within the city, county or the region as there are no changes to the existing employee base. There would be a temporary daily increase to the site associated with construction workers, however these workers would be traveling within the Region, regardless of whether the Project was implemented as construction workers tend to be employed by a company and not hired specifically for one job. Therefore, the proposed Project would not conflict with the implementation of SB 375.

County of Riverside Climate Action Plan

The County of Riverside CAP was adopted in December 2015 and contains guidance on Riverside County's GHG inventory reduction goals, thresholds, policies and implementation programs. A portion of the proposed Santa Ana River Arundo Removal project activities and the ID-4 CRA Crossing Refurbishment are located within unincorporated Riverside County and construction emissions would be subject to the County's CAP. Measures to reduce construction emissions includes the sourcing of a minimum of 15 percent of construction materials locally and the diversion of construction waste. The proposed Project would comply with and would not conflict with these provisions of the County CAP.

As discussed above, the proposed Project would be consistent with the CARB Scoping Plan, SB 375, and the County of Riverside CAP. Therefore, the proposed Project would have a less than significant impact related to applicable GHG plans and policies.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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4.7.4 References

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4.8 Hazards and Hazardous Materials

This section evaluates the potential for the proposed Project to result in adverse impacts related to hazards and hazardous materials. The analysis is based on review of available hazards and hazardous materials reports, websites, and maps of the Project area, including reports and information posted on State Water Resources Control Board (SWRCB) Geotracker database and the Department of Toxic Substances Control (DTSC) EnviroStor database, relevant regulations, and a discussion of the methodology and thresholds used to determine whether the proposed Project would result in significant impacts.

Definition of Hazardous Materials

A "hazardous material" is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (State of California Health and Safety Code Chapter 6.95, Section 25501[p]). The term "hazardous materials" refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases) (22 California Code of Regulations [CCR] 66261.21 to 66261.24).

In some cases, past industrial or commercial activities on a site could have resulted in spills or leaks of hazardous materials to the ground, resulting in soil and/or groundwater contamination. Hazardous materials may also be present in building materials and released during building demolition activities. If improperly handled, hazardous materials can cause health hazards when released to the soil, groundwater, or air. Individuals are typically exposed to hazardous materials through inhalation or bodily contact. Exposure can come as a result of an accidental release during transportation, storage, or handling of hazardous materials. Disturbance of subsurface soil during construction can also lead to exposure of workers or the public from stockpiling, handling, or transportation of soils contaminated by hazardous materials from previous spills or leaks.

4.8.1 Environmental Setting

Local Setting

The potential for contamination in soil and groundwater within the Project area is based on an environmental database review conducted to identify environmental cases, permitted hazardous materials uses, and spill sites within the boundaries of the cities within which project components would be constructed. Environmental cases are those sites that are suspected of releasing hazardous substances or have had cause for hazardous substances investigations and are identified on regulatory agency lists while permitted hazardous materials uses are facilities that use hazardous materials or handle hazardous wastes that operate under appropriate permits and comply with current hazardous materials and hazardous waste regulations. Spill sites are

locations where a spill has been reported to the State or federal regulatory agencies. Such spills do not always involve a release of hazardous materials.

California Government Code Section 65962.5 requires state and local agencies to compile and update, at least annually, lists of hazardous waste sites and facilities. While Government Code Section 65962.5 makes reference to a "list", commonly referred to as the Cortese List, this information is currently available from the following online data resources (CalEPA 2018):

- SWRCB GeoTracker database, which identifies sites that impact groundwater or require groundwater cleanup, and
- DTSC EnviroStor database, which identifies sites with known hazardous material contamination or warrant further investigation as well as facilities that treat, store, transfer, or dispose of hazardous waste.

These databases have compiled information from various sources that list known hazardous waste and hazardous substances sites in California.

Chino Basin Production Wells, Refurbishment and Treatment System

The project site is not listed on any federal or state agency regulatory databases. No hazardous materials sites are located within 0.5 mile of the project site.

Arlington Production Wells and Pipeline

There are three open LUST sites and one cleanup program site near the project site along Alternative 1 pipeline route. They are described below:

J&R Fast Fuel/Former Quality Gas located at 9407 Magnolia Avenue, Riverside	In November 1999 five UST's, one diesel fuel dispenser and four fuel dispensers and related product piping were removed from the site. Soil beneath the USTs and adjoining fuel dispensers was impacted by gasoline, diesel, methyl tertiary butyl ether (MTBE) and benzene, toluene, ethylbenzene, and xylenes (BTEX). The site is open and has been undergoing groundwater remediation since May 23, 2008. This site is located about 200 feet north of Alternative 1.
Arlington Automotive located at 9611 Magnolia Avenue, Riverside	USTs were removed from the site in 1987 and gasoline was detected in the soil samples where the USTs were removed. Elevated concentrations of lead were also reported. Additional sampling is required to determine if groundwater was impacted. The case maintains an open status and remediation has not been conducted. The site is adjacent to Alternative 1.
One Hour Dry Cleaners located at 10491 Magnolia Avenue, Riverside	Tetrachloroethene (PCE) was historically used at the former dry cleaner. Investigations at the site documented PCE concentrations in soil and soil vapor in the vicinity of the former dry cleaner. The former dry cleaner has been vacant since 2010. The site maintains an open – assessment cleanup program site status as of May 2, 2017. Ongoing activities include additional assessment and soil remediation. The site is located about 300 feet north of Alternative 1.
Unocal located at 10451 Magnolia Avenue, Riverside	The results of the September 2017 One Hour Dry Cleaner site investigation reported elevated benzene concentrations in some of the samples collected at the site and to the east of the building close to the Unocal western boundary. There is a potential that the elevated benzene levels, as well as other petroleum-related hydrocarbons, originate at the Unocal site. Further investigation is required. The site maintains an open- inactive LUST status as of July 27, 2015. The site is located about 100 feet of Alternative 1.

Cannon Pump Station

The project site is not listed on any federal or state agency regulatory databases. No hazardous materials sites are located within 0.5 mile of the project site.

ID-4 CRA Crossing Refurbishment

The project site is listed in SWRCB GeoTracker as maintaining a case-closed status since February 24, 2011 for a leaking underground storage tank (LUST). In 1994 a leak was discovered at an underground storage tank (UST) filled with 4,000 gallons of gasoline. Soil and groundwater testing was conducted and concluded that groundwater was impacted by gasoline from the LUST. Site characterization was conducted to confirm the vertical and horizontal extent of contamination. Groundwater remediation was completed and a Case Closure No Further Action letter was provided by the County of Riverside Community Health Agency, Department of Environmental Health. No other sites are located within 0.5 mile of the project site.

Arundo Removal

The project site is not listed on any federal or state agency regulatory databases. There are two open remediation sites within 0.5 mile of the project site listed below:

Tequesquite Landfill located at 6253 Tequesquite Avenue, Riverside	Tequesquite Landfill (TL) is a closed Class III solid waste disposal facility owned by the City of Riverside and located inside a 120-acre parcel in a small northeast-southwest trending valley known as Tequesquite Arroyo. The results of historical monitoring at wells located downgradient of TL indicate that PCE, trichloroethene (TCE), and nitrate (as nitrogen) are regularly measured at concentrations that exceed respective California Primary Drinking Water Standards and Federal Maximum Contaminant Levels (MCLs). Historical monitoring has also confirmed that PCE and TCE are signature constituents in groundwater upgradient of the landfill. As a result, the Santa Ana Regional Water Quality Control Board (RWQCB) in a letter dated January 25, 2006 has directed the City to complete an EMP in accordance with CCR Title 27. The City elected to perform a demonstration project rather than the EMP. The results of the demonstration project indicated the contaminants are from a source other than the landfill.
6501 Clay Street located at 6501 Clay Street, Jurupa Valley	This site is a former pipe manufacturing site which underwent active remediation using soil vapor extraction (SVE) and excavation. Multiple subsurface investigations indicated that the levels of chemicals of concern (COC) are low and below generally accepted screening level standard. The site is currently in the post-remediation and verification sampling phase of cleanup. A request for No Further Action letter was submitted. This site is located about 0.25-mile north of the project area.

Airports

There are five public airports within the Project area: French Valley Airport, Perris Valley Airport, Riverside Municipal Airport, Corona Municipal Airport, and Flabob Airport, some of which have ALUCPs described below.

Riverside Municipal Airport	The Riverside Municipal Airport is located in the City of Riverside. The Santa Ana River Arundo Removal would take place within the Santa Ana River within the Riverside Airport Influence Area (AIA). Additionally, the Arlington Production Wells and Pipeline would be located approximately 1.50 miles south of the Airport, within Zone D and E of the Riverside Municipal Airport AIA (County of Riverside 2005).
Corona Municipal Airport	The Corona Municipal Airport is located in the City of Corona. South of the airport are primarily commercial land uses while Prado Basin is just north of the airport. Arundo donax removal would take place within the Prado Basin just north of the airport; the project would be located within Zone E of the Corona AIA (County of Riverside 2004a).
Flabob Airport	The Flabob Airport is located within the City of Riverside. The Santa Ana River is located less than one-mile south of this airport; therefore, the Santa Ana River Arundo Removal area is located within the Flabob AIA (County of Riverside 2004b).

Schools

Table 4.8-1 lists schools within 0.25 mile of each of the project locations.

TABLE 4.8-1
SCHOOLS WITHIN ¼-MILE

School Name	Address	Distance
Chino Basin Production Wells, **Refurbishment and Treatment System**		
Serrano Middle School	4725 San Jose St, Montclair, CA 91763	0.23 miles
Montclair Christian	9828 Ramona Ave, Montclair, CA 91763	0.12 miles
Arlington Production Wells and Pipeline		
California Baptist University	8432 Magnolia Ave, Riverside, CA 92504	0.14 miles
Chemawa Middle School	8830 Magnolia Ave, Riverside, CA 92503	0.07 miles
Hawthorne Elementary School	2700 Irving St, Riverside, CA 92504	0.03 miles
Liberty Elementary School	2728 Liberty Blvd, South Gate, CA 90280	0.15 miles
Allan Orrenmaa Elementary School	3350 Fillmore St, Riverside, CA 92503	0.07 miles
Saint Thomas School	9136 Magnolia Ave, Riverside, CA 92503	0.03 miles
Montessori Childrens House	10493 Magnolia Ave, Riverside, CA 92505	0.06 miles
Riverside Christian School	8775 Magnolia Ave, Riverside, CA 92503	0.09 miles
Cannon Pump Station		
No Schools		
ID-4 CRA Crossing		
No Schools		
Santa Ana River Arundo Removal		
No Schools		

Source: ESA, 2018

Wildland Fire Hazards

California Department of Forestry and Fire Protection (CAL FIRE) maps the Fire Hazard Severity Zones (FHSZ) for the cities and counties within the Project area. The FHSZ are based on an evaluation of fuels, topography, dwelling density, weather, infrastructure, building materials, brush clearance, and fire history (CAL FIRE 2012). According to the Riverside County and San Bernardino FHSZ State Responsibility Area (SRA) and Local Responsibility Area (LRA) maps, the counties contain moderate, high, and very high fire severity zones (CAL FIRE 2007a, 2007b, 2008, 2010).

4.8.2 Regulatory Framework

Hazards and hazardous materials are subject to numerous federal, state, and local laws and regulations intended to protect health, safety, and the environment. The U.S. Environmental Protection Agency (USEPA), DTSC, RWQCB, County of San Bernardino, and County of Riverside are the primary agencies enforcing these regulations. Local regulatory agencies enforce many federal and State regulations through the Certified Unified Program Agency (CUPA) program. The Riverside County Fire Department/Riverside Department of Environmental Health Hazardous Materials Branch and San Bernardino County Fire Department are the lead agencies for the investigation and cleanup of leaking underground storage tank sites. The RWQCB is the lead agency for other groundwater cases. The DTSC can be the lead agency for cases with no groundwater issues and is the lead agency for investigation and remediation of the hazardous sites discussed above.

Federal

Federal agencies with responsibility for hazardous materials management include the USEPA, Department of Labor (Federal Occupational Health and Safety Administration [OSHA]), and Department of Transportation (US DOT). Major federal laws and issue areas include the following statutes and regulations:

Resources Conservation and Recovery Act (42 USC 6901 et seq.)

The Resources Conservation and Recovery Act (RCRA) is the principal law governing the management and disposal of hazardous materials. RCRA is considered a "cradle to grave" statute for hazardous wastes in that it addresses all aspects of hazardous materials from creation to disposal. RCRA applies to this Project because RCRA is used to define hazardous materials, offsite disposal facilities and the wastes each may accept are regulated under RCRA.

Emergency Planning and Community Right-to-Know Act (SARA Title III)

The Emergency Planning and Community Right-to-Know Act (EPCRA) improved community access to information regarding chemical hazards and facilitated the development of business chemical inventories and emergency response plans. EPCRA also established reporting obligations for facilities that store or manage specified chemicals. EPCRA applies to this Project because contractors use hazardous materials (e.g., fuels, paints and thinners, solvents, etc.) would be required to prepare and implement written emergency response plans to properly manage hazardous materials and respond to accidental spills.

US DOT Hazardous Materials Transportation Act of 1975 (49 USC 5101)

US DOT, in conjunction with the USEPA, is responsible for enforcement and implementation of federal laws and regulations pertaining to safe storage and transportation of hazardous materials. The Code of Federal Regulations (CFR) 49, 171–180, regulates the transportation of hazardous materials, types of material defined as hazardous, and the marking of vehicles transporting hazardous materials. This act applies to this Project because contractors will be required to

comply with its storage and transportation requirements that would reduce the possibility of spills.

The Federal Motor Carrier Safety Administration (49 CFR Part 383-397)

The Federal Motor Carrier Safety Administration, a part of the US DOT, issues regulations concerning highway transportation of hazardous materials, the hazardous materials endorsement for a commercial driver's license, highway hazardous material safety permits, and financial responsibility requirements for motor carriers of hazardous materials. This act applies to this Project because contractors would be required to comply with its storage and transportation requirements that would reduce the possibility of spills.

Occupational Safety and Health Administration (29 USC 15)

OSHA is the federal agency responsible for ensuring worker safety. These regulations provide standards for safe workplaces and work practices, including those relating to hazardous materials handling. OSHA applies to this Project because contractors would be required to comply with its hazardous materials management and handling requirements that would reduce the possibility of spills.

Hazardous Materials Transport Act (49 USC 5101)

The U.S. DOT, in conjunction with the USEPA, is responsible for enforcement and implementation of federal laws and regulations pertaining to transportation of hazardous materials. The Hazardous Materials Transportation Act of 1974 directs the U.S.DOT to establish criteria and regulations regarding the safe storage and transportation of hazardous materials. The CFR (49 CFR 171–180) regulates the transportation of hazardous materials, types of material defined as hazardous, and the marking of vehicles transporting hazardous materials. This act applies to this Project because contractors would be required to comply with its storage and transportation requirements that would reduce the possibility of spills.

Federal Regulation 49 Code of Federal Regulation Part 77

The Federal Aviation Administration (FAA) is the federal agency that identifies potential impacts related to air traffic and related safety hazards. The Federal Regulation 49 CFR Part 77 establishes standards and notification requirements for objects affecting navigable airspace. This notification serves as the basis for:

- Evaluating the effect of the proposed construction or alteration on operating procedures,
- Determining the potential hazardous effect of the proposed construction on air navigation,
- Identifying mitigating measures to enhance safe air navigation, and
- Charting of new objects.

FAA FAR Part 77 includes the establishment of imaginary surfaces (airspace that provides clearance of obstacles for runway operation) that allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing adverse impacts to the safe and efficient use of navigable airspace. The regulations identify three-dimensional imaginary surfaces

through which no object should penetrate. Section 77.17 (Obstruction Standards) also states that an object would be an obstruction to air navigation if it is higher than 200 feet above ground level. Exceedance of 200 feet above ground level or the 100:1 imaginary surface requires notification to FAA (per FAR Part 77). An object that would be constructed or altered within the height restriction or imaginary surface area of the airport is not necessarily incompatible (ALUP 2008), but would be subject to FAA notification and an FAA aeronautical study to determine whether the proposed structures would constitute a hazard to air navigation.

Federal Insecticide, Fungicide, and Rodenticide Act 7 U.S.C. Section 136 et seq. (1996)

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) provides for federal regulation of pesticide distribution, sale, and use ("pesticides" includes any herbicide, insecticide, rodenticide, algaecide, fungicide, or any combination of substances intended to prevent, destroy, or repel any pest). All pesticides distributed or sold in the United States must be registered (licensed) by the US EPA. Before US EPA may register a pesticide under FIFRA, the applicant must show, among other things, that using the pesticide according to specifications "will not generally cause unreasonable adverse effects on the environment." FIFRA defines the term "unreasonable adverse effects on the environment" to mean: "(1) any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide, or (2) a human dietary risk from residues that result from a use of a pesticide in or on any food inconsistent with the standard under section 408 of the Federal Food, Drug, and Cosmetic Act." Training is required for workers in pesticide-treated areas and certification and training for applicators of restricted use pesticides.

State

The primary state agencies with jurisdiction over hazardous chemical materials management are the DTSC and the Santa Ana RWQCB. Other state agencies involved in hazardous materials management are the Department of Industrial Relations (State OSHA implementation), State Office of Emergency Services (OES)—California Accidental Release Prevention (CalARP) implementation, California Air Resources Board (CARB), California Department of Transportation (Caltrans), State Office of Environmental Health Hazard Assessment (OEHHA—Proposition 65 implementation) and California Integrated Waste Management Board (CIWMB). Hazardous materials management laws in California include the following statutes and regulations promulgated thereunder:

Hazardous Waste Control Act (California Health and Safety Code, Section 25100 et seq.)

The Hazardous Waste Control Act (HWCA) is the state equivalent of RCRA and regulates the generation, treatment, storage, and disposal of hazardous waste. This act implements the RCRA "cradle-to-grave" waste management system in California but is more stringent in its regulation of non-RCRA wastes, spent lubricating oil, small-quantity generators, transportation and permitting requirements, as well as in its penalties for violations.

California Accidental Release Prevention Program

The purpose of the California Accidental Release Prevention Program (CalARP) is to prevent accidental releases of substances that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws. This is accomplished by requiring businesses that handle more than a threshold quantity of a regulated substance listed in the regulations to develop a Risk Management Plan (RMP). An RMP is a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. The RMP contains safety information, hazards review, operating procedures, training requirements, maintenance requirements, compliance audits, and incident investigation procedures (CalOES 2016).

California Hazardous Materials Release Response Plans and Inventory Law of 1985

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires preparation of hazardous materials business plans and disclosure of hazardous materials inventories, including an inventory of hazardous materials handled, plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the state. Local agencies are responsible for administering these regulations.

Several state agencies regulate the transportation and use of hazardous materials to minimize potential risks to public health and safety, including the California Environmental Protection Agency (CalEPA) and the California Emergency Management Agency. The California Highway Patrol and Caltrans enforce regulations specifically related to the transport of hazardous materials. Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roadways.

The Business Plan Act applies to this Project because contractors will be required to comply with its handling, storage, and transportation requirements that would reduce the possibility of spills, and to prepare an emergency response plan to respond to accidental spills.

Health and Safety Code, Section 2550 et seq.

This code and the related regulations in 19 California Code of Regulations (CCR) 2620, et seq., require local governments to regulate local business storage of hazardous materials in excess of certain quantities. The law also requires that entities storing hazardous materials be prepared to respond to releases. Those using and storing hazardous materials are required to submit a Hazardous Materials Business Plan (HMBP) to their local CUPA and to report releases to their CUPA and the State Office of Emergency Services. This code would apply to the Project because the contractors would be required to prepare a HMBP that would provide procedures for the safe handling, storage, and transportation of hazardous materials.

California Division of Occupational Safety and Health

The California Division of Occupational Safety and Health (Cal/OSHA) is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA requires many entities to prepare injury and illness prevention plans and chemical hygiene plans, and provides specific regulations to limit exposure of construction workers to lead. OSHA applies to this Project because contractors will be required to comply with its handling and use requirements that would increase worker safety and reduce the possibility of spills, and to prepare an emergency response plan to respond to accidental spills.

Health and Safety Code, Section 25270, Aboveground Petroleum Storage Act

Health and Safety Code Sections 25270 to 25270.13 applies to facilities that operate a petroleum aboveground storage tank with a capacity greater than 660 gallons or combined aboveground storage tanks capacity greater than 1,320 gallons or oil-filled equipment where there is a reasonable possibility that the tank(s) or equipment may discharge oil in "harmful quantities" into navigable waters or adjoining shore lands. If a facility falls under these criteria, it must prepare a Spill Prevention Control and Countermeasure (SPCC) Plan.

Government Code Section 65962.5, Cortese List

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List" (after the legislator who authored and enacted the legislation). The list, or a site's presence on the list, has bearing on the local permitting process, as well on compliance with CEQA. The list is developed with input from the State Department of Health Services, State Water Resources Control Board, California Integrated Waste Management Board, and DTSC. At a minimum, at least annually, the DTSC Control shall submit to the Secretary for Environmental Protection a list of the following:

1. All hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.
2. All land designated as hazardous waste property or border zone property pursuant to Article 11 (commencing with Section 25220) of Chapter 6.5 of Division 20 of the Health and Safety Code.
3. All information received by the DTSC pursuant to Section 25242 of the Health and Safety Code on hazardous waste disposals on public land.
4. All sites listed pursuant to Section 25356 of the Health and Safety Code
5. All sites included in the Abandoned Site Assessment Program.
6. All underground storage tanks for which an unauthorized release report is filed pursuant to Section 25295 of the Health and Safety Code.
7. All solid waste disposal facilities from which there is a migration of hazardous waste and for which a California regional water quality control board has notified the Department of Toxic Substances Control pursuant to subdivision (e) of Section 13273 of the Water Code.

8. All cease and desist orders issued after January 1, 1986, pursuant to Section 13301 of the Water Code, and all cleanup or abatement orders issued after January 1, 1986, pursuant to Section 13304 of the Water Code, that concern the discharge of wastes that are hazardous materials.
9. All solid waste disposal facilities from which there is a known migration of hazardous waste.

The Secretary for Environmental Protection shall consolidate the information submitted pursuant to this section and distribute it in a timely fashion to each city and county in which sites on the lists are located. The Secretary shall distribute the information to any other person upon request. The Secretary may charge a reasonable fee to persons requesting the information, other than cities, counties, or cities and counties, to cover the cost of developing, maintaining, and reproducing and distributing the information.

Utility Notification Requirements

Title 8, Section1541 of the CCR requires excavators to determine the approximate locations of subsurface utility installations (e.g., sewer, telephone, fuel, electric, water lines, or any other subsurface installations that may reasonably be encountered during excavation work) prior to opening an excavation. The California Government Code (Section 4216 et seq.) requires owners and operators of underground utilities to become members of and participate in a regional notification center. According to Section 4216.1, operators of subsurface installations who are members or participate and share in the costs of a regional notification center are in compliance with this section of the code. Underground Services Alert of Southern California (known as DigAlert) receives planned excavation reports from public and private excavators and transmits those reports to all participating members of DigAlert that may have underground facilities at the location of excavation. Members will mark or stake their facilities, provide information, or give clearance to dig (DigAlert 2016). This requirement would apply to this Project because any excavation would be required to identify underground utilities before excavation.

California Department of Pesticide Regulation, 3 CCR Food and Agriculture, Division 6. Pesticides and Pest Control Operations

This section of the CCR addresses the use of pesticides and pest control operations ("pesticides" includes any herbicide, insecticide, rodenticide, algaecide, fungicide, or any combination of substances intended to prevent, destroy, or repel any pest). These regulations provide pesticide registration and licensing procedures, lists of restricted materials, work and worker safety requirements, and environmental protections for groundwater, surface water, air, and aquatic environments. The Applicant and its contractors will be required to comply with California Department of Pesticide Regulation (DPR) regulations.

Regional

Certified Unified Program Agency

In 1993, Senate Bill (SB) 1082 was passed by the State Legislature to streamline the permitting process for those businesses that use, store, or manufacture hazardous materials. The passage of SB 1082 provided for the designation of a Certified Unified Program Agency (CUPA) that would be responsible for the permitting process and collection of fees. The CUPA would be responsible for implementing at the local level the Unified Program, which serves to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for the following environmental and emergency management programs:

- Hazardous Waste
- Hazardous Materials Business Plan
- California Accidental Release Prevention Program
- Underground Hazardous Materials Storage Tanks
- Aboveground Petroleum Storage Tanks / Spill Prevention Control & Countermeasure Plans
- Hazardous Waste Generator and On-Site Hazardous Waste Treatment (tiered permitting) Programs

The Hazardous Materials (HazMat) Branch of the County of Riverside Department of Environmental Health and the Hazardous Materials Division of the San Bernardino County Fire Department are designated as the CUPA responsible for implementing the above-listed program elements within their respective counties. The laws and regulations that established these programs require that businesses that use or store certain quantities of hazardous materials and submit a HMBP that describes the hazardous materials usage, storage, and disposal to the CUPA. The contractors constructing the Project and the responsible agency acting as the operator of the facility would be required to prepare and implement an HMBP.

San Bernardino County Emergency Operations Plan

The Emergency Management Program of San Bernardino County is governed and coordinated by the San Bernardino County Fire Department, Office of Emergency Services. The National Response Framework (NRF), National Incident Management System (NIMS), the Standardized Emergency Management System (SEMS) and the State of California Emergency Operations Plan provide planning and policy guidance to counties and local entities. These documents support the foundation for the County's Emergency Operations Plan (EOP), an all-hazard plan describing how the County will prepare for and respond to incidents. It is based on and compatible with the laws, regulations, plans, and policies listed above. The EOP describes how various agencies and organizations in the county will coordinate resources and activities with other federal, state, county, local, and private-sector partners (SBCFD OES 2013).

Riverside County Emergency Operations Plan

The Riverside County Fire OES governs the Emergency Management program which is focused around the four primary phases of emergency management: Mitigation, Preparedness, Response, and Recovery. As part of the response phase, OES prepares the Riverside County Operational Area Emergency Operations Plan (EOP). The EOP is designed to establish the framework for implementation of SEMS for Riverside County and NIMS. The EOP addresses the planned response to extraordinary emergency situations in or affecting Riverside County and describes the operations of how Riverside County Emergency Operations Center facilitates multi-agency and multi-jurisdiction coordination during emergencies (RCFD OES 2006).

Multi-Jurisdictional Hazard Mitigation Plan (MJHMP)

The MJHMP is reviewed, monitored, and updated to reflect changing conditions and new information every 5 years. The updated San Bernardino County Unincorporated Area MJHMP was approved by FEMA. The MJHMP presents updated information regarding hazards being faced by the county, the San Bernardino County Fire Protection District, the San Bernardino County Flood Control District, Big Bear Valley Recreation and Parks District, Bloomington Recreation and Parks District (Districts), and those board-governed Special Districts administered by the San Bernardino County Special Districts Department. The Plan also presents mitigation measures to help reduce consequences from hazards, and outreach/education efforts within the unincorporated area of the county since 2005 (San Bernardino County 2011).

San Bernardino County Fire Department

The Chino Basin receives fire and emergency response services from the San Bernardino County Fire Department (SBCFD). The SBCFD is responsible, on both the city and county level, for enforcing the State regulations governing hazardous waste generators, hazardous waste storage, and underground storage tanks, including inspections and enforcement. The SBCFD also regulates the use, storage, and disposal of hazardous materials in San Bernardino County by issuing permits, monitoring regulatory compliance, investigating complaints, and other enforcement activities.

In addition to providing fire protection and emergency services, the SBCFD regulates the use and storage of hazardous materials for the county and provides emergency response in the event of accidental release of hazardous materials.

The SBCFD also administers the local Fire Code which incorporates articles of the Uniform Fire Code (UFC). The UFC is a model code setting construction standards for buildings and associated fixtures, in order to prevent or mitigate hazards resulting from fire or explosion. The SBCFD reviews technical aspects of hazardous waste site cleanups, and oversees remediation of certain contaminated sites resulting from leaking underground storage tanks. The SBCFD is also responsible for providing technical assistance to public and private entities which seek to minimize the generation of hazardous waste.

Riverside County Fire Department

Residents of Riverside County including all of the unincorporated areas and 21 partner cities such as Wildomar, receive fire and emergency response services from the Riverside County Fire Department (RCFD). In addition to their role of providing fire protection and emergency services, RCFD helps implement hazardous materials programs within Riverside County.

Hazardous Materials Branch of Riverside County Department of Environmental Health

As the designated CUPA, the Riverside County Department of Environmental Health HazMat Branch is responsible for overseeing the six hazardous materials programs in the county. Responsibilities include inspection of facilities that handle hazardous materials, generate hazardous waste, treat hazardous waste, own/operate underground storage tanks, own/operate aboveground petroleum storage tanks, or handle other materials subject to the California Accidental Release Program. In addition, the Branch maintains an emergency response team that responds to hazardous materials and other environmental health emergencies 24 hours a day, 7 days a week (Riverside County DEH 2016).

Hazardous Materials Fire Code Requirements

As the CUPA, the SBCFD and HazMat for Riverside County enforces the hazardous materials-related standards of the California Fire Code, including requirements for signage of hazardous materials storage areas, storage of flammable materials, secondary containment for storage containers, and separation of incompatible chemicals.

Riverside County Hazardous Waste Management Plan

The Riverside County Hazardous Waste Management Plan (RCHWMP) was adopted in 1989, and uses a framework of 24 programs to serve as the county's primary planning document for the management of hazardous substances. Its policies include:

- Comply with federal and state laws pertaining to the management of hazardous wastes and materials.
- Ensure active public participation in hazardous waste and hazardous materials management decisions in Riverside County.
- Coordinate hazardous waste facility responsibilities on a regional basis through the Southern California Hazardous Waste Management Authority (SCHWMA).
- Encourage and promote the programs, practices, and recommendations contained in the County Hazardous Waste Management Plan, giving the highest waste management priority to the reduction of hazardous waste at its source.

4.8.3 Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the significance of impacts related to hazards and hazardous materials are based on Appendix G of the *CEQA Guidelines*, as modified by *California Building Industry Association v. Bay Area Air Quality Management District* and currently being updated by the state. The proposed Project would result in a significant impact with respect to hazards or hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (see Impact 4.8-1, below).
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (see Impact 4.8-2, below).
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (see Impact 4.8-3, below).
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment (see Impact 4.8-4, below).
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area (see Impact 4.8-5, below).
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (see Impact 4.8-6, below).
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires (see Impact 4.8-7, below).

Impacts Discussion

Routine Use

Impact 4.8-1: The proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Construction

The construction activities required for the proposed Project facilities would involve ground disturbing activities such as, trenching, excavation, light grading, and other ground-disturbing activities. The construction activities would temporarily require the use of equipment, such as trucks, excavators, and other powered equipment, and would use potentially hazardous materials such as fuels (gasoline and diesel) and lubricants (oils and greases). In addition, construction may use hazardous materials such as glues, solvents, paints, thinners, or other chemicals. Such materials would be used only in quantities typically associated with the construction of groundwater wells and would be transported, handled, stored, and disposed of in accordance with applicable laws and regulations and manufacturers' instructions.

Regulations establish specific guidelines regarding risk planning and accident prevention, protection from exposure to specific chemicals, and the proper storage of hazardous materials. The Project would be in compliance with all applicable federal, state, and local requirements concerning the use, storage, transport and management of hazardous materials. Construction in conformance with standard regulatory compliance measures is adequate to reduce the potential risk hazards associated with construction activities. Accordingly, the Project would not increase the probable frequency or severity of consequences to people or property from the potential exposure to hazardous substances. Therefore, compliance with the applicable regulations would ensure that construction of the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Impacts would be less than significant.

Operation

Operation of the groundwater treatment system may include the storage and use of hazardous materials such as sodium hypochlorite. Chemicals would be supplied and stored in bulk storage tanks. All chemical feed piping would be double-walled chemical piping. The tanks would be placed atop cement slabs. The use of hazardous materials and substances during operation would be subject to the federal, state, and local health and safety requirements for the handling, storage, transportation, and disposal of hazardous materials, summarized in the Regulatory Framework. Compliance with these laws would minimize the potential impacts to the public or environment due to routine transport, storage, and use of hazardous materials. Impacts would be less than significant.

The initial removal of *Arundo donax* and other invasive species would be accomplished by physical removal and chipping in place. New growth would be treated with an aquatic herbicide that is both U.S. EPA-approved and registered for use in California by the California Department of Pesticide Regulation (e.g., glyphosate, imazapyr, or other approved herbicides). If applicable, the Santa Ana River Arundo Removal project would apply for coverage by the Aquatic Weed Control Permit currently implemented under State Water Board Order 2103-0002-DWQ. To comply with coverage under this permit, the applicant would be required to submit a Notice of Intent (NOI), an application fee, and an Aquatic Pesticide Application Plan (APAP). The APAP would describe best management practices (BMPs) would be implemented to reduce a significant impact to the environment from use of aquatic herbicides. BMPs include, but are not limited to, spill prevention and containment, application by a certified applicator, staff training and education, outreach and public notification, fish kill prevention measures, certification, and herbicide labels. Applicators of the herbicide would be required to adhere to federal, state, and local regulations for the application of herbicides including proper storage and application methods. Therefore, risks from the routine use of herbicides would result in less than significant impacts to the public and the environment.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Accident Conditions

Impact 4.8-2: The proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment.

Construction

Construction activities associated with implementation of the proposed Project could create hazards to the public or the environment through accidental spills. Compliance with all applicable federal, state and local regulations would reduce potential impacts to the public or the environment regarding accidental release of hazardous materials to less than significant.

The use of hazardous materials and substances during construction would be subject to the federal, state, and local health and safety requirements for the handling, storage, transportation, and disposal of hazardous materials, summarized in the Regulatory Framework. With compliance with these regulations, hazardous material impacts related to construction activities would be less than significant.

Operation

Operation of the proposed facilities would include the storage and use of chemicals. The storage tanks would be designed in accordance with the applicable hazardous materials storage regulations for long-term use summarized in the Regulatory Framework. The delivery and disposal of chemicals to and from the treatment facility sites would occur in full accordance with all applicable federal, state, and local regulations.

As noted in the Regulatory Framework, an HMBP must be prepared and implemented for the proposed facility upgrades as required by the County of San Bernardino CUPA. The HMBP would minimize hazards to human health and the environment from fires, explosions, or an accidental release of hazardous materials into air, soil, surface water, or groundwater. Compliance with all applicable federal, state and local regulations regarding the handling, storage, transportation, and disposal of hazardous materials, and preparation and implementation of the HMBP would reduce potential impacts to the public or the environment related to the transport, use, or disposal of hazardous materials to less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Schools

Impact 4.8-3: The proposed Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.

Construction

Construction activities associated with implementation of the proposed Project could create hazards to the public or the environment through accidental spills. Compliance with all applicable federal, state and local regulations would reduce potential impacts to the public or the environment regarding accidental release of hazardous materials to less than significant.

The use of hazardous materials and substances during construction would be subject to the federal, state, and local health and safety requirements for the handling, storage, transportation, and disposal of hazardous materials, summarized in the Regulatory Framework. With compliance with these regulations, hazardous material impacts related to construction activities would be less than significant.

Operation

Operation of the proposed Project facilities would be subject to regulations controlling the storage and handling of hazardous materials near schools. Only the Chino Basin Production Wells, Refurbishment and Treatment System would routinely store chemicals on site. Table 4.8-1 lists the schools within a 0.25 mile of the proposed Chino Basin Production Wells, Refurbishment and Treatment System site. Compliance with all applicable federal, state and local regulations regarding the handling, storage, transportation, and disposal of hazardous materials, and preparation and implementation of the HMBP would reduce potential impacts to the public or the environment related to the transport, use, or disposal of hazardous materials to less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Hazardous Materials Site Listing

Impact 4.8-4: The proposed Project could result in a significant impact if it would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and would create a significant hazard to the public or the environment.

The records search on the SWRCB GeoTracker and the DTSC EnviroStor databases, revealed hazardous waste sites near the proposed projects. The proposed projects would include

construction of wells, pipelines and ancillary facilities such as pump stations. During project construction, it is possible that contaminated soil and/or groundwater could be encountered during excavation, thereby posing a health threat to construction workers, the public, and the environment. Implementation of Mitigation Measure HAZ-1 would ensure that hazardous soils are identified prior to construction activities. Impacts would be less than significant after mitigation.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

HAZ-1: Prior to the initiation of any construction requiring ground-disturbing activities, a Phase I Environmental Site Assessments (ESA) for soil and groundwater contamination shall be conducted at the project areas. If the site has the potential for contaminated soil and/or groundwater, a Soil and Groundwater Management Plan that specifies the method for handling and disposing of contaminated soil and groundwater prior to demolition, excavation, and construction activities shall be prepared and implemented. The plan shall include all necessary procedures to ensure that excavated materials and fluids generated during construction are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations.

Significance Determination after Mitigation: Less than Significant

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Airports

Impact 4.8-5: The proposed Project would not result in a safety hazard for people residing or working in the Project area surrounding an airport or private airstrip.

The proposed projects would be located within developed areas that would not affect local airports. No structures over one story would be constructed. Pipelines would be constructed underground. Construction and operation of the projects would have no impact on local airports or private airstrips.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Emergency Plans

Impact 4.8-6: The proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The proposed projects would not impair implementation of or physically interfere with adopted emergency response plans or emergency evacuation plans. Construction of pipelines within the local right-of-way may temporarily close lanes of traffic, but would not require permanent closure of any roadways. Therefore, less than significant impacts related to an emergency evacuation plan would occur.

Following construction, operation of the pipelines would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan as they would be located underground. Aboveground ancillary facilities would require periodic maintenance. Maintenance activities would require minimal trips and would not significantly impact the surrounding roadways. Impacts related to an adopted emergency plan would be considered less than significant during operation.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Wildland Fires

Impact 4.8-7: The proposed Project could expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The groundwater wells and treatment facilities associated with the Chino Basin Production Wells, Refurbishment and Treatment System and Arlington Production Wells and Pipeline projects would not be located within zones that are designated as Very High Fire Hazard Severity Zone. Construction of the ID-4 CRA Crossing and the Cannon Pump Station would be located in areas with overgrown vegetation that could increase fire hazards. In addition, *Arundo donax* and other non-native species removal activities could affect areas of dried vegetation in staging areas, access routes and treatment areas. Implementation of **Mitigation Measure HAZ-2** would ensure that fire hazards are minimized. Impacts would be less than significant.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

HAZ-2: Prior to construction of the ID-4 CRA Crossing and the Cannon Pump Station, and prior to imitation of Arundo Removal activities, fire hazard reduction measures shall be identified and incorporated into a fire management plan. These

measures shall address all staging areas, welding areas, or areas slated for development that are planned to use spark-producing equipment. These areas shall be cleared of dried vegetation or other material that could ignite. Any construction equipment that includes a spark arrestor shall be equipped with a spark arrestor in good working order. During the construction of the project facilities, all vehicles and crews working at the project site to have access to functional fire extinguishers at all times. In addition, construction crews shall have a spotter during welding activities to look out for potentially dangerous situations, including accidental sparks.

Significance Determination after Mitigation: Less than Significant

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4.8.4 References

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4.9 Hydrology and Water Quality

This section evaluates the potential for the proposed Project to result in adverse impacts related to hydrology and water quality. The analysis is based on review of available hydrologic reports and maps of the project area, the relevant regulatory framework, and a discussion of the methodology and thresholds used to determine whether the proposed Project would result in significant impacts.

4.9.1 Environmental Setting

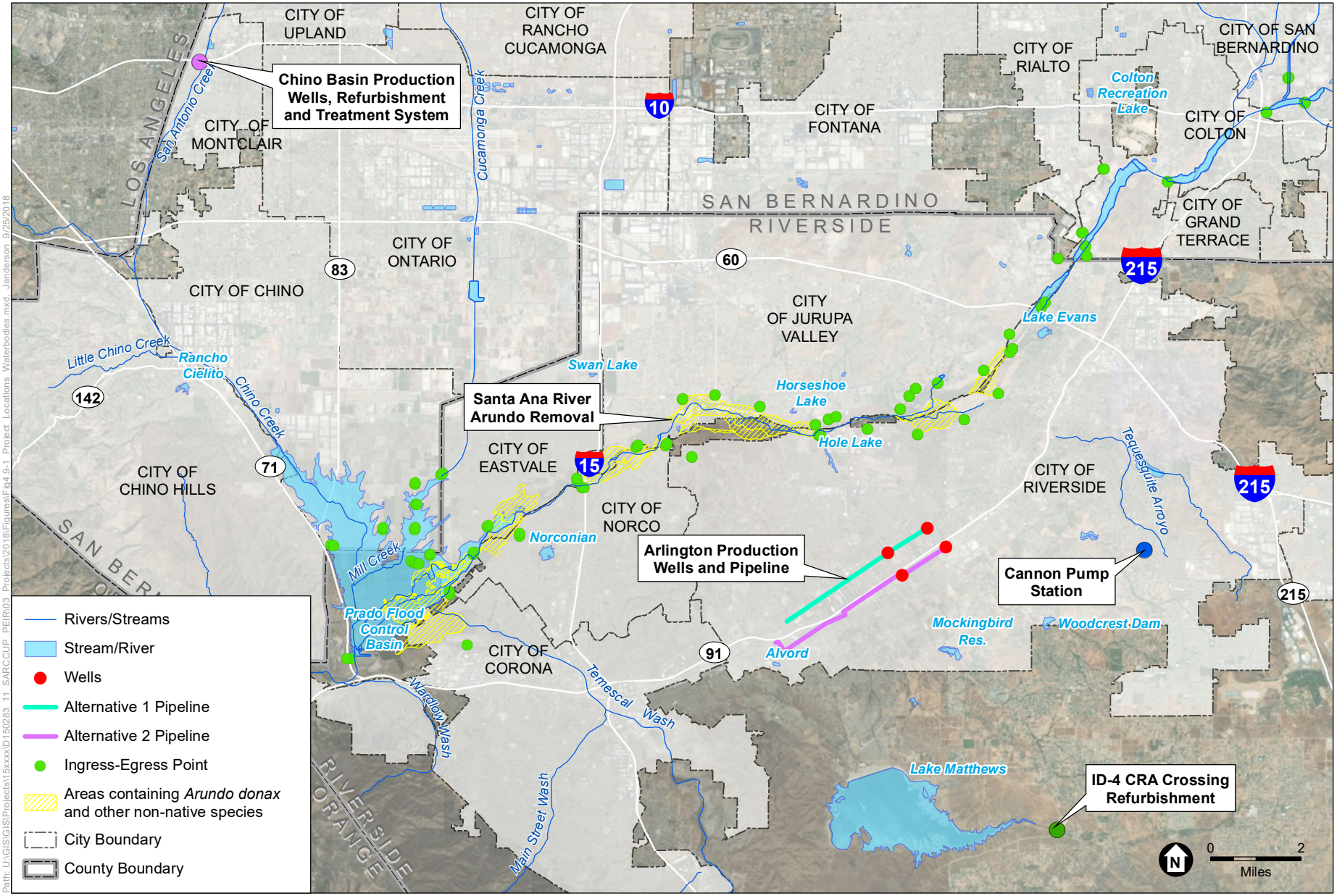
Regional Setting

Santa Ana River Watershed

The Santa Ana River watershed drains the steep-slopes of the San Bernardino Mountains to the valley floor of the Inland Empire, through the Prado Basin and on to Orange County and the Pacific Ocean. The Santa Ana River travels 75 miles from its origins near Big Bear Lake to the Pacific Ocean. In the mountainous areas, perennial surface water exists in segments of the Santa Ana River and tributaries. Big Bear Dam impounds surface water high in the mountains. Below Big Bear, Seven Oaks Dam built by the US Army Corps of Engineers (USACE) in the 1990s provides flood control protection to the urbanized valley below. From below the dam at the base of the mountains through the City of San Bernardino, the river is a soft-bottom channel that is generally dry in the summer, but contains some seasonal flows in the winter and spring. Historically, the Santa Ana River likely exhibited perennial flows from groundwater upwelling. However, groundwater levels have declined since the 1800s, eliminating perennial flows in much of the river. **Figure 4.9-1** shows streams within the watershed.

Several large tributaries join the river in San Bernardino County, including City Creek, Warm Creek, Lytle Creek, Plunge Creek, Mill Creek, the Rialto Drain, and San Timoteo Creek. These tributaries are usually dry in the summer, responding only to storm events and spring runoff. Some of the smaller drainages exhibit perennial urban runoff, but these flows generally infiltrate into the ground prior to the confluence with the Santa Ana River in the San Bernardino County portion of the watershed. Treated wastewater discharges from Yucaipa Valley Water District and the City of Beaumont to San Timoteo Creek flow for a short distance and percolate into the ground (SWRCB 2010).

Downstream of the City of San Bernardino to the City of Riverside, the river flows perennially due to the discharges from wastewater treatment plants serving the upper valley cities including Highland, San Bernardino, Rialto and Colton. Groundwater and urban runoff begin to enter the river as it flows past the City of Riverside. Downstream of Riverside, the river flows are increased by discharges from the City of Riverside and the City of Corona wastewater treatment plants. Near the City of Corona, the river flows through the Prado Reservoir and Dam through the Santa Ana Mountains and onto the Orange County Coastal Plain.



SOURCE: ESRI; Riverside County; San Bernardino County

SARCCUP

Figure 4.9-1

Waterbodies and Drainages in Project Area

ESA

The Santa Ana River Watermaster prepares an annual report required by the Stipulated Judgment (Judgment) in the case of *Orange County Water District v. City of Chino, et al.*, Case No. 117628-County of Orange that became effective on October 1, 1970. The Judgment designated four public agencies to represent the Upper and Lower Areas and gave them the responsibility to meet the obligations set forth in the Judgment to implement the physical solution. OCWD) represents the Lower Area while Valley District, Western Municipal Water District (WMWD), and Inland Empire Utilities Agency (IEUA) represent the Upper Area.

The IEUA service area is located within the highly urbanized South Coast Hydrologic Region (HR) of the Santa Ana River Watershed that includes Chino Basin. The major surface water features within the South Coast HR include the Santa Ana River, San Antonio Creek, Cucamonga Creek, Day Canyon Creek, Dry Creek, Deer Creek, and Chino Creek. All of these creeks begin at the San Gabriel Mountains and traverse through the Chino Basin in the cities of Upland, Ontario, Rancho Cucamonga, Montclair, and Chino to the Santa Ana River. With the exception of storm flows during periods of high precipitation, the Santa Ana River and the tributaries currently function as effluent dominated streams with perennial contributions from urban runoff (IEUA 2010). The amount of water from these local surface supplies is variable and currently accounts for approximately 5 percent of the regional water supply (IEUA 2015).

The Prado Flood Control Basin is located in the southwest corner of the Chino Groundwater Basin. USACE built Prado Dam in 1941 as a flood control facility and has subsequently modified its use to include water conservation up to a maximum pool height elevation. The Santa Ana Region Basin Plan (Basin Plan) designated Prado Basin as a man-made inland wetland. As described in the Basin Plan, surface (and subsurface) flow contributes to the wetland conditions behind the dam (Santa Ana RWQCB 2008). Water held behind the dam is released gradually to allow Orange County Water District the ability to maximize groundwater recharge in Orange County.

Surface Water Quality

The Santa Ana River is listed on the State Water Resources Control Board's 303(d) list of impaired water bodies as summarized in **Table 4.9-1** below.

As shown in Table 4.9-1, downstream reaches of the Santa Ana River and local water bodies that are impaired for pathogens, indicator bacteria, copper, and lead. Pathogens are disease-causing organisms that include bacteria, viruses, and protozoan parasites. The major sources of many pathogens are human and animal waste; some pathogens are naturally present in the environment and water (USEPA 2013). In urban environments, sources of lead and copper in runoff include building siding and roofs; automobile brakes, tires, and oil leakage; and wet and dry atmospheric deposition. **Table 4.9-2** lists the range of 2016 water quality results for Reach 3 samples collected from between the Prado Wetlands and the Riverside Narrows. The results are compared to the Reach 3 water quality objectives of the Santa Ana River (Santa Ana RWQCB 2016).

TABLE 4.9-1
DOWNSTREAM WATER QUALITY IMPAIRMENTS

Water Body	Impairments	TMDL Completion Date(s)
Santa Ana River Reach 4 (Mission Blvd. in Riverside to San Jacinto Fault in San Bernardino)	Pathogens	2019
Santa Ana River Reach 3 (Prado Dam to Mission Blvd. in Riverside)	Copper, Lead, Pathogens	2021, 2021, 1997
Santa Ana River Reach 2 (17th Street in Santa Ana to Prado Dam)	Indicator Bacteria	2021
Chino Creek Reach 1B (Mill Creek confl to start of concrete-lined channel)	Chemical Oxygen Demand (COD), Nutrients, Pathogens	2019, 2021
Chino Creek Reach 2 (Beginning of concrete channel to confl with San Antonio Creek)	Coliform Bacteria, pH	2021
Cucamonga Creek Reach 1 (Valley Reach)	Cadmium, Coliform Bacteria, Copper, Lead, Zinc	2021
San Antonio Creek	pH	2021

SOURCE: SWRCB, 2011

TABLE 4.9-2
WATER QUALITY OBJECTIVES FOR SANTA ANA RIVER REACH 3

	TDS (mg/L)	Hardness (mg/L)	Sodium (mg/L)	Chloride (mg/L)	Total Inorganic Nitrogen (mg/L)	Sulfate (mg/L)	Chemical Oxygen Demand (mg/L)
Annual Average	609	268	104	122	5.4	104	5 to 9
Basin Plan Water Quality Objectives	700	350	110	140	10	150	30

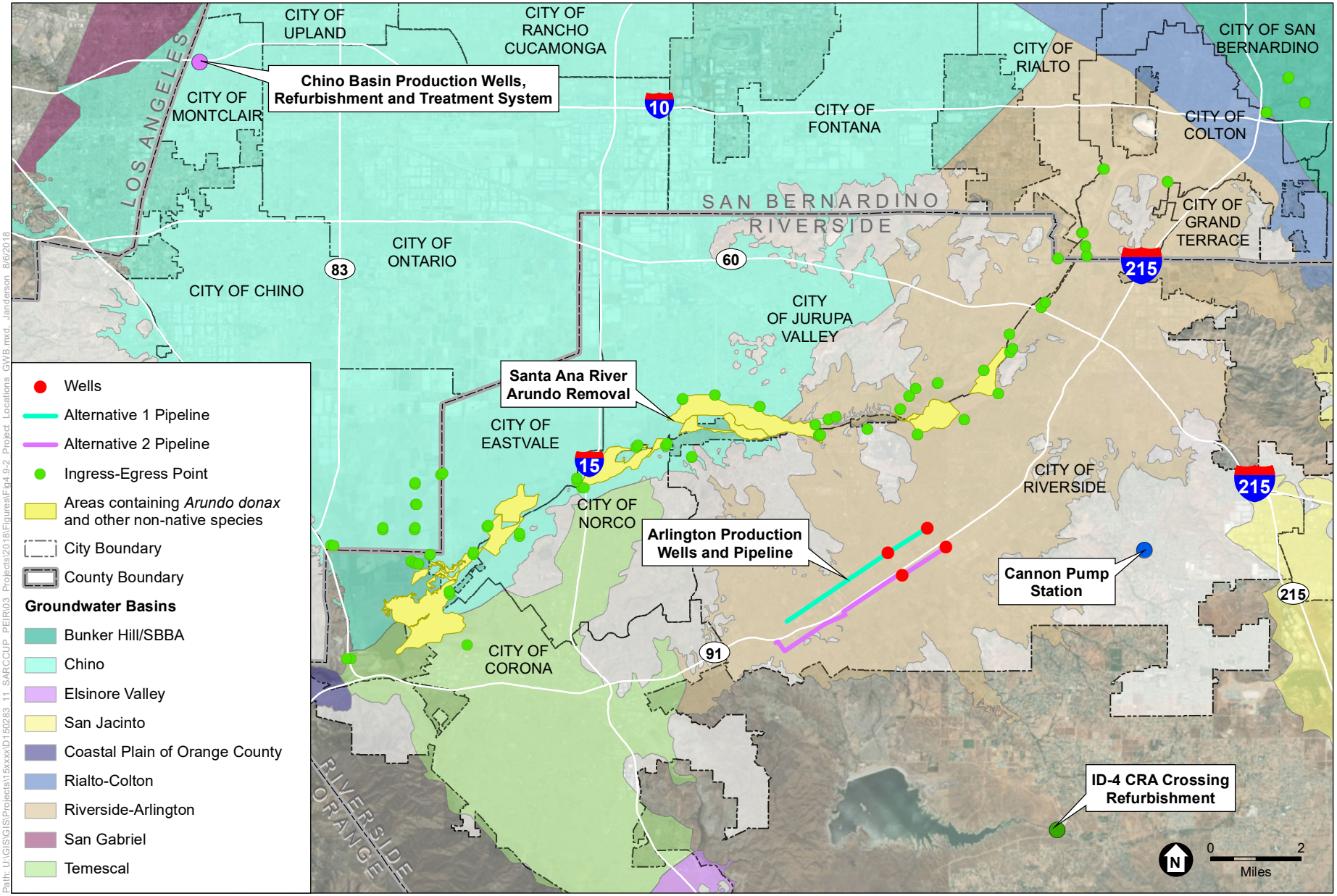
Source: SAWPA, 2017; Santa Ana RWQCB, 2016

Groundwater

Groundwater basins within the Santa Ana River watershed are shown in **Figure 4.9-2**. The following sections describe the Chino Basin and Arlington-Riverside Subbasin.

Chino Basin

The Chino Basin covers approximately 235 square miles of the upper Santa Ana River watershed. The basin is bounded by the Cucamonga Basin and the San Gabriel Mountains to the north; the Rialto-Colton Basin to the northeast; the chain of Jurupa, Pedley, and La Sierra Hills to the southeast; the Temescal Basin to the south; the Chino and Puente Hills to the southwest; and the San Jose Hills and the Pomona and Claremont Basins to the northwest (Chino Basin Watermaster, 2015). As one of the largest groundwater basins in Southern California, the Chino Basin contains about 5,000,000 acre-feet of water and has an unused storage capacity of about 1,000,000 acre-feet.



SOURCE: ESRI; Riverside County; San Bernardino County

SARCCUP

Figure 4.9-2
Groundwater Basins

ESA

Groundwater from the Chino Basin accounts for approximately 40 percent of regional water supplies (IEUA 2016). The Chino Groundwater Basin supplies groundwater for municipal and industrial uses, including supplying impaired water for treatment at the Chino Basin Desalter. The Chino Basin Desalter converts unusable groundwater that does not meet potable water standards into reliable potable water supply, provides hydraulic control over the lower Chino Basin, prevents migration of poor quality water into the Santa Ana River, and enhances groundwater yield for Chino Basin.

Primary Aquifers

The primary water-bearing formations of Chino Basin are Pleistocene and Holocene-age unconsolidated alluvial and lacustrine deposits that consist of compact gravels, sand, silt, and clay. These deposits are coarse and rich in gravel near mountains and hills, but become finer grained and better sorted toward the central parts of the valley (DWR 2006).

The Chino Basin is hydrologically subdivided into five groundwater-flow systems that act as separate and unique hydrologic units. Water resource management activities that occur in one unit will have limited impacts on the other units. For this reason, the five hydrologic units are called management zones (Chino Basin Watermaster, 2015). Management zones 1, 2, and 3 make up the Chino North Management Zone, while Management Zones 4 and 5 are outside of the IEUA service area. Each of the management zones is recharged naturally and through recharge basins operated to capture stormwater, recycled water, and imported water. Sources of water include direct percolation of precipitation, returns from irrigation, recharge of storm flows and imported water in spreading basins, and subsurface inflow from the Claremont Heights and Pomona Basin.

Recharge to the Chino Basin is primarily by precipitation runoff from the surrounding mountains and hills, infiltration through the creeks and rivers within the alluvial plains, and recharge through basins located throughout the IEUA service area. Recharge to the aquifer in Chino Basin occurs from the following sources (Chino Basin Watermaster 2015):

- Infiltration of precipitation in pervious (unpaved) areas and unlined stream channels
- Infiltration of stormwater flow and municipal wastewater discharges within the channel of the Santa Ana River
- Underflow of groundwater into valley alluvium from saturated sediments and fractures within the bounding mountains and hills;
- Artificial recharge of stormwater, imported water, and recycled water at spreading grounds throughout IEUA's service area;
- Underflow from seepage across faults that the bound the basin, including the Red Hill Fault (from Cucamonga Basin), the San Jose Fault (from the Claremont Heights and Pomona Basins), and the Rialto-Colton Fault (from the Rialto-Colton Basin);
- Intermittent underflow from the Temescal Basin (the boundary between the Chino and Temescal Basins is a groundwater divide and groundwater flow intermittently occurs between the basins)
- Infiltration of landscaping and agricultural irrigation water

Groundwater outflow occurs through extraction wells throughout the basin, and into the Prado Basin where groundwater rising contributes to the conservation pool behind Prado Dam. Groundwater then exits the Chino Basin through the Prado Gap into Orange County to the west.

Groundwater elevations are available for a groundwater monitoring well (Chino-1002554) located approximately 0.14 miles west of Well 34 (DWR 2018). Chino-1002554 is screened from 182 to 238 feet, 266 to 318 feet, and 392 to 448 feet below ground surface, with a ground surface elevation of 1060.9 feet above mean sea level. Depths to groundwater decreased from 492.63 feet on January 6, 2017, to 460.20 feet on February 8, 2017.

Groundwater Quality

The general water chemistry of groundwater in the Chino Basin is predominately a calcium-sodium bicarbonate type.[1] The current Regional Water Quality Board (RWQCB) Basin Plan TDS objective is 280 milligrams per liter (mg/L), based on the maximum concentration of TDS that could be present in water without causing adverse effects on bodies of water within the Chino Basin. The average TDS concentration in the Chino Basin is 484 mg/L and ranges between 200-600 mg/l (DWR 2006).

The Basin Plan nitrate objectives for the Chino Basin is 5 mg/L. Similar to TDS, areas with significant irrigated land use or dairy waste disposal histories overlie groundwater with elevated nitrate concentrations. The primary areas of nitrate degradation are the areas formerly or currently overlain by citrus in the northern parts of the Chino Basin.

Chino Basin Watermaster

The Chino Basin Watermaster was established in 1978 by a Superior Court Judgement which adjudicated the groundwater rights in the Chino Basin. The Judgement mandated that the Chino Basin Watermaster develop the Optimum Basin Management Plan (OBMP) which established management goals to address issues, needs and interests of water producers in the Chino Basin. Management of the Chino Basin is now guided by the "Peace II Agreement" which requires the Chino Basin Watermaster to update the OBMP every five years in order to effectively protect and enhance the safe yield of the Chino Basin through replenishment and recharge.

The Chino Basin Watermaster has assigned pumping rights within the Chino Basin to agricultural, industrial and municipal users (IEUA 2016). The safe yield for the Chino Basin as designated by the Watermaster is 140,000 acre-feet per year (AFY) (Chino Basin Watermaster 2015). The safe yield assignment limits groundwater pumping for all of the overlying pumping rights.

Groundwater Monitoring

The Chino Basin Watermaster initiated a groundwater-level monitoring program as part of the implementation of the OBMP. Currently, the groundwater-level monitoring program consists of 1,000 wells. Water levels are measured by municipal water agencies, the California Department of Toxic Substances Control (DTSC), San Bernardino County, and various private consulting

[1] General groundwater quality types can be described by the predominant cations (sodium, potassium, calcium and/or magnesium) and anions (chloride, bicarbonate, carbonate, sulfate, and/or nitrate) in solution.

firms at approximately 800 of those wells. The remaining 200 wells are measured by the Chino Basin Watermaster once per month. These 200 wells are primarily located near existing agricultural areas (Chino Basin Watermaster 2013b).

The program consists of four components (Chino Basin Watermaster 2013b):

1. An Annual Key Well Water Quality Monitoring Program consisting of 111 wells, which are mostly privately owned agricultural wells in the southern portion of Chino Basin that are otherwise not included in an established sampling program. Twenty of these wells are sampled every year, and the remaining wells are sampled once every three years. The wells sampled annually are for the continuous monitoring of areas of concern.
2. Annual sampling at nine multi-port monitoring wells placed between the Chino Desalter well fields and the Santa Ana River. Results of the annual sampling are used to analyze the effect of desalter pumping over time by comparing water quality of the native groundwater and the Santa Ana River.
3. Quarterly sampling at four near-river wells to characterize the interaction between the Santa Ana River and nearby groundwater. These shallow monitoring wells along the Santa Ana River consist of two former US Geological Survey (USGS) National Water Quality Assessment Program wells and two wells owned by the Santa Ana River Water Company.
4. A cooperative basin-wide data-collection effort known as the Chino Basin Data Collection program, which relies on municipal producers and other government agencies to supply groundwater-quality data on a cooperative basis. These sources include the Appropriators, DTSC, RWQCB, USGS, the Counties, and other cooperators.

All groundwater-quality data are checked by Watermaster staff and uploaded to a centralized database management system that can be accessed online (Chino Basin Watermaster 2013b).

Chino Desalters

The Chino Basin Desalter Authority was formed in 2001 to produce, treat, and distribute treated potable water to cities and water agencies throughout the southern portion of Chino Basin. Chino Desalter I was constructed in 2000 and Desalter II in 2006 to address salinity concerns with groundwater in the Chino Basin. The treatment processes at the Chino I and Chino II Desalters include Reverse Osmosis (RO) and Ion-Exchange for removal of nitrate and total dissolved solids (TDS). The Chino I Desalter also includes air stripping for removal of volatile organic chemicals. The desalters convert unusable groundwater that does not meet potable water standards into reliable potable water supply, provide hydraulic control over the lower Chino Basin and prevent migration of poor quality water into the Santa Ana River, and enhance groundwater yield for the Basin (IEUA 2016).

The Chino Desalters produce 25,000 AFY of treated groundwater. The amount of water received by the IEUA member agencies (cities of Chino, Chino Hills, and Ontario) is approximately 50 percent of the total production from these facilities. The remaining water is sent to agencies within the WMWD service area (IEUA 2016). The treated groundwater from the desalters is very high in quality.

Riverside-Arlington Subbasin

The Riverside-Arlington Subbasin is located within the larger Upper Santa Ana Valley Groundwater Basin (DWR 2004). This subbasin is bound by impermeable rocks of Box Springs Mountains on the southeast, Arlington Mountain on the south, La Sierra Heights and Mount Rubidoux on the northwest, and the Jurupa Mountains on the north. The northeast boundary is formed by the Rialto-Colton fault, and a portion of the northern boundary is a groundwater divide beneath the city of Bloomington. The Santa Ana River flows over the northern portion of the subbasin.

The Riverside-Arlington Subbasin is further subdivided by a groundwater divide that roughly parallels the northwest to southeast Monroe and Adams Streets (DWR 2004; WRIME 2012). The Arlington Subbasin is located to the southwest and the Riverside Subbasin is located to the northeast.

Groundwater provides only a small portion of the water supplies for the Riverside-Arlington area (WRIME 2012). Approximately 8,600 acre-feet of groundwater was produced from the area in 2009, with 19 percent coming from private wells for use within the basin and the remaining 81 percent coming from Western's Arlington Desalter wells. Other water supply sources, including all supplies for municipal use, include groundwater from nearby groundwater basins, such as Rialto-Colton, Riverside, and Bunker Hill; imported water; and recycled water.

Primary Aquifers

Groundwater in the subbasin is generally unconfined and found in alluvial deposits of depths up to 250 feet in the center of the subbasin (WRIME 2012). The Quaternary alluvial deposits consist of gravel, sand, silt, and clay. These materials were deposited by the ancestral Santa Ana River and other surface channels in a bedrock canyon formed by ancient drainage systems running from south to north, emptying into the main portion of the Santa Ana Basin near Colton. Groundwater is produced from the alluvial sediments in the subbasin with recharge from precipitation, applied water, and subsurface flow from the surrounding watersheds. Groundwater flow is toward the southwest (WRIME 2012). Groundwater elevations southwest of the proposed Wells AD-6 and AD-7 ranged from 760 to 740 feet above mean sea level in 2009.

Groundwater Quality

Water quality is poor, particularly with respect to ambient water quality related to TDS (on average greater than 950 milligrams per liter [mg/L]) and nitrate (on average greater than 20 mg/L, as nitrogen) (WRIME 2012). Total dissolved solids and nitrate concentrations have shown little long-term variability since at least the 1950s. The TDS Basin Plan Water Quality Objective is 980 mg/L and the recommended secondary Maximum Contaminant Level (MCL) is 500 mg/L. The Basin Plan Water Quality Objective for nitrate is 10 mg/L.

Orange County Groundwater Basin

The Orange County Groundwater Basin underlies north and central Orange County along the coastal plain. The basin covers an area of approximately 350 square miles, bordered by the Coyote and Chino Hills to the north, the Santa Ana Mountains to the northeast, and the Pacific Ocean to the southwest. The basin boundary extends to the Orange County-Los Angeles line to the northwest, where groundwater flow is unrestricted across the county line into the Central Basin of Los Angeles County. The Newport-Inglewood fault zone forms the southwestern boundary of all but the Shallow Aquifer in the basin. The three aquifer systems, known as the Shallow, Principal, and Deep, are hydraulically connected, as groundwater is able to flow between them through the intervening aquitards. The Shallow Aquifer system generally occurs from the surface to approximately 250 feet below ground surface. Over 90 percent of groundwater production occurs from wells that are screened within the Principal Aquifer system at depths between 200 and 1,300 feet. The basin stores an estimated 66 million acre-feet of water, but only 500,000 acre-feet of this storage is used for water supply. OCWD operates groundwater injection wells to protect the basin from seawater intrusion. The basin is recharged from Santa Ana River channel infiltration, spreading basins operated by OCWD, subsurface flows, injection wells, and from the Groundwater Replenishment System which recharges 100 million gallons per day of highly treated reclaimed water through recharge basins in Anaheim. (OCWD, 2015)

Flooding

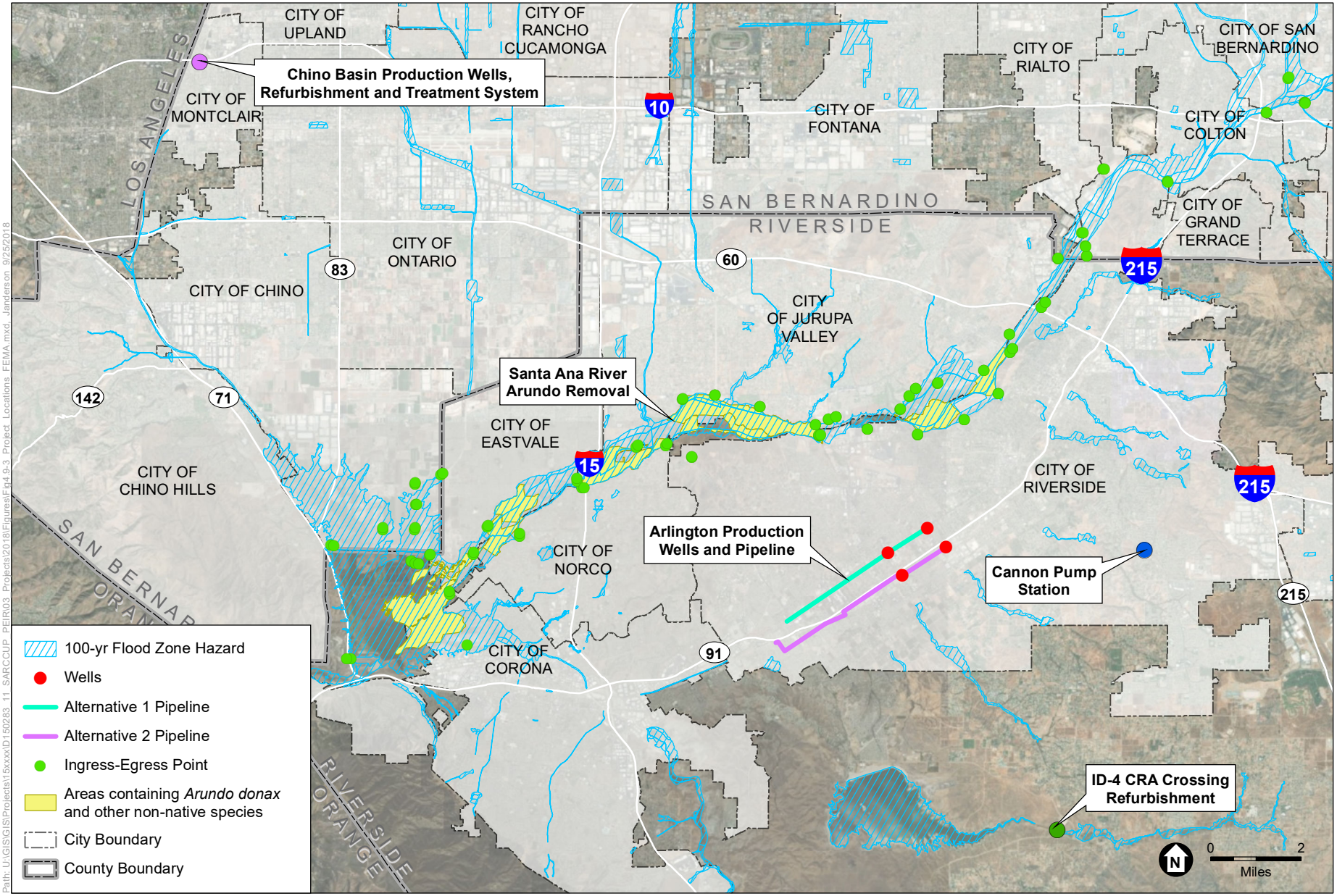
FEMA Flood Hazards

The Federal Emergency Management Agency (FEMA) identifies areas throughout the United States that are at risk for flooding. The FEMA Flood Insurance Rate Map identifies areas that have a 1 percent or greater risk (100-year flood area) of being inundated by a flood event in a given year. **Figure 4.9-3** identifies 100-year flood zone in the project area.

Dam Inundation Areas

Flooding from dam failure can result from both natural and human causes, including earthquakes, erosion, improper siting and/or design, and rapidly rising floodwater during heavy storms. The type of failure, ranging from instantaneous to gradual, is dependent on the building material of the dam. Dam failure can potentially cause loss of life and property damage, displacement of persons residing in the inundation path, and damage to infrastructure.

There are two dams (Prado Dam and Seven Oaks Dam) and several reservoirs located throughout the project area. Prado Dam is the closest dam to the project area, located at the southwestern edge of Prado Flood Control Basin. The Prado dam is located downstream of all parts of the proposed Project. No other proposed facilities would be constructed within a dam inundation area, including the Seven Oaks Dam.



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SOURCE: ESRI; Riverside County; San Bernardino County; FEMA

SARCCUP

Figure 4.9-3
100-Year Flood Zone Hazards

ESA

Tsunami and Seiche Hazard Areas

A tsunami is a very large wave that is caused by an underwater earthquake or volcanic eruption and that often causes extreme destruction when it strikes land. A seiche is an oscillating wave in an enclosed or semi-enclosed body of water (e.g., lake or bay) caused by seismic or atmospheric disturbances such as wind. The California Emergency Management Agency (CalEMA) has identified the tsunami inundation hazard zone for coastal areas of the state including the County of Orange (CalEMA 2009). The hazard zone primarily hugs the shoreline, with some exception in the areas of marinas and ports, such as Newport Beach and Seal Beach. None of the project facilities would be located within a tsunami hazard zone.

Imported Water

Imported water is purchased by the SARCCUP partner agencies from Metropolitan Water District of Southern California (MWD) for wholesale distribution to the retail agencies within each agency's service area. MWD distributes water from both the State Water Project (SWP) and from the Colorado River to its member agencies. However, IEUA only uses SWP water due to salinity concerns within the Chino Basin. SWP water salinity has averaged 320 mg/l during the past 20 years. This supply of imported water for IEUA is consistent with the Basin Plan and regulatory requirements of the Santa Ana Regional Water Quality Control Board (IEUA 2011). Imported Colorado River water salinity averages over 600 mg/l.

Imported water meets approximately 25 to 30 percent of water demands within the IEUA service area. Imported purchases from MWD in recent decades have averaged about 70,000 AFY (IEUA 2015). Over the last several years, imported water deliveries to IEUA have declined from a high of 78,872 acre-feet in 2009 to 59,047 acre-feet in 2013. Additionally, MWD has not offered replenishment-rate water since 2011 and officially canceled the program at the end of 2013. MWD has indicated that they will replace those deliveries with some other program that will be developed in the future (Chino Basin Watermaster 2013a).

4.9.2 Regulatory Framework

Federal

Clean Water Act (CWA)

Regulatory authorities exist on both the state and federal levels for the control of water quality in California. The United States Environmental Protection Agency (USEPA) is the federal agency responsible for water quality management pursuant to the Clean Water Act (CWA) of 1977. The purpose of the CWA is to protect and maintain the quality and integrity of the Nation's waters by requiring states to develop and implement state water plans and policies. The relevant sections of the CWA are summarized below.

CWA Section 303: Water Quality Standards and Implementation Plans

Section 303 of the CWA requires states to designate beneficial uses for water bodies or segments of water bodies and to establish water quality standards to protect those uses for all waters of the

United States. Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop lists of impaired waters. Impaired waters are waters that do not meet water quality standards established by the state. The law requires that these jurisdictions establish a priority ranking for listed waters and develop action plans to improve water quality. Inclusion of a water body on the Section 303(d) List of Impaired Water Bodies triggers development of a Total Maximum Daily Load (TMDL) for that water body and a plan to control the associated pollutant/stressor on the list. The TMDL is the maximum amount of a pollutant/stressor that a water body can assimilate and still meet the water quality standards. Typically, a TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources.

Section 303(d) is described as part of the regulatory framework because the Santa Ana RWQCB has identified the Santa Ana River Reach 3 as an impaired water body.

CWA Section 401: Water Quality Certification

Section 401 of the CWA (33 U.S.C. Section 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into navigable waters, including the crossing of rivers or streams during road, pipeline, or transmission line construction, to obtain a certification from the state in which the discharge originates. The certification ensures that the discharge will comply with the applicable effluent limitations and water quality standards. The state agency responsible for implementing Section 401 of the CWA in California is the California State Water Resources Control Board (SWRCB) through its local Santa Ana RWQCB.

CWA Section 402: National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402 of the CWA is one of the primary mechanisms for controlling water pollution through the regulation of sources that discharge pollutants into waters of the United States. The USEPA has delegated authority of issuing NPDES permits in California to the SWRQB, which has nine RWQCBs. The Santa Ana RWQCB regulates water quality in the project area. The NPDES permit program is discussed below in State Regulations.

CWA Section 404: Discharge of Dredged or Fill Material

Section 404 of the CWA (33 U.S.C. Section 1344) authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into the waters of the United States at specified disposal sites (33 Code of Federal Regulations [CFR] Part 323). The selection and use of disposal sites will be in accordance with guidelines developed by the Administrator of USEPA in conjunction with the Secretary of the Army and published in 40 CFR Part 230 (the “guidelines”). 40 CFR Part 230 subpart C includes water quality aspects of dredge-and-fill activities. Among other topics, these guidelines address discharges that alter substrate elevation or contours, suspended particulates, water clarity, nutrients and chemical content, current patterns and water circulation, water fluctuations, and salinity gradients. The Arundo removal action would require a Section 404 permit.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.), passed in 1969, requires protection of water quality by appropriate design, sizing, and construction of erosion and sediment controls. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by an RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies and has delegated primary implementation authority to the nine RWQCBs. The Porter-Cologne Act assigns responsibility for implementing CWA Sections 401 through 402 and 303(d) to the SWRCB and the nine RWQCBs.

The Porter-Cologne Act requires the development and periodic review of water quality control plans (Basin Plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining waste discharge requirements, identify enforcement actions, and evaluate clean water grant proposals. The Basin Plans are updated every 3 years. Compliance with Basin Plans is primarily achieved through implementation of the NPDES, which regulates waste discharges as discussed above.

The project area is located within the jurisdiction of the Santa Ana RWQCB- Region 8. The Santa Ana Region Basin Plan region defines a variety of water quality objectives for the hydrologic units (watersheds) within the project area.

Anti-Degradation Policy

The SWRCB Anti-Degradation Policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Water in California (SWRCB Resolution No. 68-16), restricts degradation of surface and ground waters. Specifically, this policy protects water bodies where existing quality is higher than necessary for the protection of beneficial uses and requires that existing high quality be maintained to the maximum extent possible.

Under the Anti-Degradation Policy, any actions that can adversely affect water quality in all surface and ground waters must: (1) be consistent with maximum benefit to the people of California; (2) not unreasonably affect present and anticipated beneficial use of the water; and (3) not result in water quality less than that prescribed in water quality plans and policies. Furthermore, any actions that can adversely affect surface waters are also subject to the federal Anti-Degradation Policy (40 CFR Section 131.12) developed under the CWA. Discharges from the proposed Project that could affect surface water quality would be required to comply with the Anti-Degradation Policy, which is included as part of the NPDES permit requirements.

NPDES Waste Discharge Program

The federal CWA established the NPDES program to protect the water quality of receiving waters of the United States. Under CWA Section 402, discharging pollutants to receiving waters of the United States is prohibited unless the discharge is in compliance with an NPDES permit. In

California, administration of the NPDES program has been delegated by USEPA to the SWRCB. The SWRCB administers water rights, water pollution control, and water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and enforcement activities. Through the nine RWQCBs, point source dischargers are required to obtain NPDES permits (or, in California under authority of Porter-Cologne, Waste Discharge Requirements). Point sources include municipal and industrial wastewater facilities and stormwater discharges.

Effluent limitations serve as the primary mechanism in NPDES permits for controlling discharges of pollutants to receiving waters. When developing effluent limitations for an NPDES permit, a permit applicant must consider limits based on both the technology available to control the pollutants (i.e., technology-based effluent limits) and limits that are protective of the water quality standards of the receiving water (i.e., water quality-based effluent limits[2] if technology-based limits are not sufficient to protect the water body). For inland surface waters and enclosed bays and estuaries, the water-quality-based effluent limitations are based on criteria in the National Toxics Rule and the California Toxics Rule, and objectives and beneficial uses defined in the applicable Basin Plan. For ocean discharges, such as desalination brine under the proposed Project, the California Ocean Plan contains beneficial uses, water quality objectives, and effluent limitations (described in detail above). There are two types of NPDES permits: individual permits tailored to an individual facility and general permits that cover multiple facilities or activities within a specific category. The NPDES permits relevant to construction and operation of the proposed Project are described below.

Prior to issuance of any NPDES permits for construction activities or operational discharges, or issuance of licenses, a review and authorization process by the Santa Ana RWQCB is required to ensure such permits and licenses are protective of designated beneficial uses and water quality and that TMDL requirements are incorporated as permit conditions in a manner consistent with relevant plans, policies, and guidelines.

NPDES Construction General Permit

The State of California adopted a Construction General Permit on September 2, 2009 (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ) (General Construction NPDES Permit, or CGP). The CGP regulates construction site stormwater management. Dischargers whose projects disturb one or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the general permit for discharges of stormwater associated with construction activity. The proposed Project would be required to comply with the permit requirements to control stormwater discharges from the construction sites. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, as well as construction of buildings and linear underground projects, including installation of water pipelines and other utility lines.

In the project area, the Construction General Permit is implemented and enforced by the Santa Ana RWQCB, which administers the stormwater permitting program. To obtain coverage under

[2] Water quality-based effluent limits specify the level of pollutant (or pollutant parameter), generally expressed as a concentration, that is allowable.

this permit, project operators must electronically file Permit Registration Documents, which include a Notice of Intent, a Stormwater Pollution Prevention Plan (SWPPP), and other compliance-related documents. An appropriate permit fee must also be mailed to SWRCB. The SWPPP identifies best management practices (BMPs) that must be implemented to reduce construction effects on receiving water quality based on potential pollutants. The BMPs identified are directed at implementing both sediment and erosion control measures as well as other measures to control potential chemical contaminants. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, and vehicle and equipment washing and fueling. The SWPPP also includes descriptions of the BMPs to reduce pollutants in stormwater discharges after all construction phases have been completed at the site (post-construction BMPs).

The Construction General permit includes several new requirements (as compared to the previous Construction General Permit, 99-08-DWQ), including risk-level assessment[3] for construction sites, an active stormwater effluent monitoring and reporting program during construction (for Risk Level II and III sites), rain event action plans for certain higher risk sites,[4] and numeric effluent limitations for pH and turbidity as well as requirements for qualified professionals that prepare and implement the plan. The risk assessment and SWPPP must be prepared by a State-qualified SWPPP Developer and implementation of the SWPPP must be overseen by a State-qualified SWPPP Practitioner. Project construction activities would be consistent with the Construction General Permit; compliance is required by law and the provisions of the permit and BMPs for construction and post-construction phases have proven effective in protecting water quality at construction sites and downgradient receiving waters.

Municipal Stormwater Permitting (MS4)

The State's Municipal Stormwater Permitting Program regulates stormwater discharges from Municipal Separate Storm Sewer Systems (MS4s). MS4 Permits were issued in two phases. Phase I was initiated in 1990, under which the RWQCBs adopted NPDES stormwater permits for medium (serving between 100,000 and 250,000 people) and large (serving more than 250,000 people) municipalities. As part of the Phase II, the SWRCB adopted a General Permit for small MS4s (serving less than 100,000 people) and nontraditional small MS4s, including governmental facilities such as military bases, public campuses, and hospital complexes. The permit also requires permittees to develop Comprehensive Bacteria Reduction Plans (CBRP). Riverside County and San Bernardino County have prepared a CBRP.

The RWQCB issued an MS4 Permit (Waste Discharge Requirement Permit for the County of San Bernardino and Incorporated Cities of San Bernardino County, Order No. R8-2010-0036 NPDES

[3] The Construction General Permit defines three levels of risk (Risk Levels I, II, and III) that may be assessed for a construction site. Risk is calculated based on the "project sediment risk," which determines the relative amount of sediment that can be discharged given the project and location details, and the "receiving water risk" (the risk sediment discharges pose to the receiving waters).

[4] Those sites that have a high potential for mobilizing sediment in stormwater and drain to a sediment-sensitive water body.

No. CAS618036) in February of 2010. The Chino Basin Production Wells, Refurbishment and Treatment System project would be located within this jurisdiction and would be are included in this permit coverage.

Similarly, an MS4 Permit (Waste Discharge Requirement Permit for the Riverside County Flood Control and Water Conservation District, The County of Riverside, and the Incorporated Cities of Riverside County within the Santa Ana Region, Order No. R8-2010-0033 NPDES No. CAS 618033) was issued in February 2010.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) is the principal federal law in the United States that ensures safe drinking water for the public. Pursuant to the Act, the USEPA is required to set standards for drinking water quality and oversee all states, localities, and water suppliers who implement these standards.

The SDWA applies to every public water system in the United States. There are currently more than 160,000 public water systems providing water to almost all Americans at some time in their lives. The Act does not cover private wells. The SDWA requires the USEPA to establish National Primary Drinking Water Regulations for contaminants that may cause adverse public health effects. The regulations include both mandatory levels (Maximum Contaminant Levels, or MCLs) and non-enforceable health goals (Maximum Contaminant Level Goals, or MCLGs) for each included contaminant.

Water Recycling Policy and Salt and Nutrient Management Plans

In February 2009, the SWRCB adopted Resolution No. 2009-0011, which established a statewide Recycled Water Policy. Draft amendments to the Recycled Water Policy were released in May 2012, September 2012, October 2012 (SWRCB hearing change sheets), and January 2013. The Recycled Water Policy Amendment was adopted by the SWRCB on January 22, 2013. The Recycled Water Policy encourages increased use of recycled water and local storm water. It also requires local water and wastewater entities, together with local salt/nutrient contributing stakeholders to develop a Salt and Nutrient Management Plan (SNMP) for each groundwater basin and subbasin in California.

Sustainable Groundwater Management Act

In 2014, the California State Legislature approved a combination of bills that together formed the Sustainable Groundwater Management Act (SGMA). SGMA requires the formation of local Groundwater Sustainability Agencies (GSAs) that must develop Groundwater Sustainability Plans (GSPs) for medium or high priority groundwater basins in California by 2022. The goal of the GSPs is to make groundwater basins sustainable by the year 2042.

Under SGMA, WMWD is the GSA for the Upper Santa Ana Valley Chino Basin. The Valley District is forming a joint GSA with other groundwater management agencies in the region to prepare and implement the GSP covering Santa Ana River Watershed groundwater basins in San Bernardino County including Chino Basin. OCWD submitted an alternative to a GSP,

documenting OCWD's current sustainable management practices, and demonstrating that a new GSA is not required.

Regional and Local

Santa Ana Basin Plan

The Santa Ana RWQCB Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional terrestrial surface water bodies (e.g., creeks, rivers, streams, and lakes), groundwater, coastal drainages, estuaries, coastal lagoons, and enclosed bays within the jurisdictional area. The preparation and adoption of Basin Plans are required by California Water Code Section 13240. According to Water Code Section 13050, Basin Plans establish the beneficial uses to be protected for the waters within a specified area, water quality objectives to protect those uses, and an implementation program for achieving the objectives. Because beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plans are regulatory references for meeting the state and federal requirements for water quality control. The water quality objectives are thus incorporated into NPDES permits. The Basin Plan is designed to preserve and enhance water quality and protect beneficial uses of all waters. Specifically, it:

- Designates beneficial uses for surface water and groundwater.
- Sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy.
- Describes implementation programs for achieving objectives to protect all waters in the region.

In addition, the Basin Plan incorporates all applicable SWRCB and RWQCB plans and policies and other pertinent water quality policies and regulations. The Santa Ana Region Basin Plan covers parts of southwestern San Bernardino County, western Riverside County, and northwestern Orange County. Water quality objectives specified for the creeks and streams include TDS, hardness, sodium, chloride, sulfate, total inorganic nitrogen, and chemical oxygen demand. As discussed in the introductory text of Section 4.9-1, Environmental Setting, only the Arundo Removal project has the potential to affect surface water. Beneficial uses for surface water in Reach 3 of the Santa Ana River include the following:

- Agricultural Supply (AGR)
- Groundwater Recharge (GWR)
- Contact Water Recreation (REC-1)
- Non-contact Water Recreation (REC-2)
- Warm Freshwater Habitat (WARM)
- Wildlife Habitat (WILD)
- Rare, Threatened, Endangered Species (RARE)
- Spawning, Reproduction, and Development (SPWN)

Groundwater quality objectives for all groundwater basins address total coliform, chemical constituents, radioactivity, and taste and odor.

Chino Basin Recharge Master Plan Update

In September 2000, the Superior Court of California approved the Peace Agreement and authorized the implementation of the Chino Basin Optimum Basin Management Program. The Peace Agreement required the preparation of a recharge master plan update every five years starting in 2000. The Chino Basin Watermaster (Watermaster) collaborated with the Chino Basin Water Conservation District and IEUA and solicited stakeholder input to prepare this update. The Recharge Master Plan Update includes various components, including planning criteria, safe yield, integrated review of water supply plans, and stormwater recharge and supplemental recharge enhancement opportunities. The plan made various conclusions based on these components, some of which are listed below:

- The Watermaster needs to acquire supplemental water to meet its replenishment obligations and the dilution requirements for the recharge of recycled water; these source will include unused production rights, imported Metropolitan water, and if necessary other non-Metropolitan imported water.
- Due to the environmental and legal challenges involved in importing water, the Watermaster should consider preemptive replenishment or water banking in the Chino Basin.
- The Watermaster should consider use of aquifer storage and recovery wells for replenishment purposes.
- The Watermaster should use in-lieu recharge to achieve an improved balance of recharge and discharge (Wildermuth 2010).

Orange County Groundwater Management Plan

OCWD adopted its first Groundwater Management Plan in 1989 and latest update in 2015. This plan sets forth basin management goals and objectives and describes how the basin is managed. This includes description of basin hydrogeology, water supply monitoring programs, management and operation of recharge facilities, water quality protection and management, and natural resource and collaborative watershed programs. Basin management goals are: (1) to protect and enhance groundwater quality, (2) to protect and increase the sustainable yield of the basin in a cost-effective manner, and (3) to increase the efficiency of District operations.

Riverside-Arlington Groundwater Management Plan

The Groundwater Management Plan (GWMP) was developed to inform the public of the importance of groundwater in the Riverside-Arlington Basin, as well as to develop relationships with stakeholders and discuss issues related to groundwater, and to develop plans to ensure the long-term sustainability of groundwater resources in the Basin. The goals of the GWMP are to optimize groundwater levels, enhance water quality, and minimize land subsidence. (WMWD 2011). The plan area covers approximately 23 square-miles of extensively developed land that is predominately urban. The plan area used approximately 8,600 acre-feet of groundwater in 2009, a small portion of the greater amount of water used, but this water supply is local, reliable and vital

to the future sustainability of the plan area. This plan was developed through WMWD per AB 3030 and SB 1938 (WMWD 2011.)

San Bernardino County Department of Public Health

San Bernardino County Department of Public Health oversees the construction of groundwater wells within the project area. As part of the Department's Public Health Drinking Water Program, the completion of a permit application is required for the construction and/or decommissioning of wells, including injection and extraction wells.

County of Riverside Department of Environmental Health

Similarly, the County of Riverside Department of Environmental Health manages the construction or destruction of any wells within Riverside County. An application is required for wells used for monitoring, agricultural, community, or individual purposes.

San Bernardino County Model Water Quality Management Plan Guidance

New development in San Bernardino County requires the preparation of a Water Quality Management Plan (WQMP) to achieve compliance with the MS4. The Environmental Management Division of the Department of Public Works reviews the WQMP that identifies potential stormwater pollutants and identifies structural and non-structural source control BMPs (County of San Bernardino 2013).

4.9.3 Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the significance of impacts related to hydrology and water quality are based on Appendix G of the *CEQA Guidelines*, as modified by *California Building Industry Association v. Bay Area Air Quality Management District* and currently being updated by the state. The proposed Project would result in a significant impact to hydrology or water quality if it would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality (see Impact 4.9-1, below);
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin (see Impact 4.9-2, below);
- Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would (see Impact 4.9-3, below):
  - Result in substantial erosion or siltation on- or off-site;
  - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

  - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
  - Impede or redirect flood flows

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation (see Impact 4.9-4, below); or
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan (see Impact 4.9-5, below).

Impacts Discussion

Water Quality Standards and Waste Discharge Requirements

Impact 4.9-1: The proposed Project could result in water quality impacts and could violate water quality standards or substantially otherwise degrade water quality.

Chino Basin Production Wells, Refurbishment and Treatment System The refurbishment of Well 34 would include site grading, drilling, soil stockpiling, and facility construction. Soil-disturbing activities, such as excavation and site clearing, could result in soil erosion and the migration of soil and sediment in stormwater runoff to downgradient water bodies and storm drains. If not properly managed, stockpiled soils could migrate off-site during precipitation events and could result in increased sedimentation in downstream receiving water bodies. Construction activities could also result in the accidental release of hazardous construction chemicals such as fuels and lubricants, paint and thinners, glues and adhesives, solvents and cleaning solutions that, if not managed appropriately, could be transported off-site by stormwater runoff and degrade the water quality of nearby water bodies.

Project construction activities on sites greater than 1 acre would be subject to the requirements of the NPDES Construction General Permit. Under the Construction General Permit, a SWPPP would be prepared and implemented, including specific measures and conditions to reduce or eliminate stormwater flow carrying pollutants from the construction activities. The SWPPP would include specific BMPs, including erosion and stormwater control measures that would be implemented on each construction site. Examples of typical construction BMPs include installing sediment barriers such as silt fencing and fiber rolls, maintaining equipment and vehicles used for construction, and tracking controls such as stabilization of construction access points. The SWPPP is also required to include a monitoring program, which would require inspections of the construction site to be conducted prior to anticipated storm events and after the actual storm events. The development and implementation of BMPs in accordance with the CGP would prevent significant construction-related impacts on water quality during construction activities, resulting in a less than significant impact.

Operation of the production well would require storage of cleaning chemicals needed for occasional cleaning of the well. The site would be designed to contain stored chemicals subject to chemical storage regulations. Compliance with hazardous materials regulations would ensure that impacts to water quality from well operations would not adversely affect local surface water quality.

On-site treatment may result in waste streams that would be disposed of in the local sanitary sewer or brine line. Therefore, impacts would be less than significant.

Arlington Production Wells and Pipeline

The construction of new wells and pipelines would include site clearing, grading, drilling, soil stockpiling, excavation, backfilling, and facility construction. The two Arlington production wells would be drilled using reverse-circulation or mud rotary methods, both of which would require the use of mud and possibly chemical additives to keep the boreholes open during drilling. Construction activities could result in the release of pollutants (sediments and/or chemicals) that could be transported off-site by stormwater, potentially degrading the water quality of nearby receiving waters. Soil-disturbing activities, such as excavation and site clearing, could result in soil erosion and the migration of soil and sediment in stormwater runoff to downgradient water bodies and storm drains. If not properly managed, stockpiled soils could migrate off-site during precipitation events and could result in increased sedimentation in downstream receiving water bodies. Construction activities could also result in the accidental release of hazardous construction chemicals such as fuels and lubricants, paint and thinners, glues and adhesives, solvents and cleaning solutions that, if not managed appropriately, could be transported off-site by stormwater runoff and degrade the water quality of nearby water bodies.

Project construction activities on sites greater than 1 acre would be subject to the requirements of the NPDES Construction General Permit. Under the Construction General Permit, a SWPPP would be prepared and implemented, including specific measures and conditions to reduce or eliminate stormwater flow carrying pollutants from the construction activities. The SWPPP would include specific BMPs, including erosion and stormwater control measures that would be implemented on each construction site. The development and implementation of BMPs in accordance with the CGP would prevent significant construction-related impacts on water quality during construction activities, resulting in a less than significant impact.

Operation of the production well would require storage of cleaning chemicals needed for occasional cleaning of the well. The site would be designed to contain stored chemicals subject to chemical storage regulations. Compliance with hazardous materials regulations would ensure that impacts to water quality from well operations would not adversely affect local surface water quality. Therefore, impacts would be less than significant.

Cannon Pump Station

Construction of the pump station would include site clearing, grading, soil stockpiling, excavation, backfilling, and facility construction. These activities would be subject to the requirements of the NPDES Construction General Permit. Under the Construction General Permit, a SWPPP would be prepared and implemented, including specific measures and conditions to reduce or eliminate stormwater flow carrying pollutants from the construction activities. The SWPPP would include specific BMPs, including erosion and stormwater control measures that would be implemented on each construction site. Examples of typical construction BMPs include installing sediment barriers such as silt fencing and fiber rolls, maintaining equipment and vehicles used for construction, and tracking controls such as stabilization of

construction access points. The SWPPP is also required to include a monitoring program, which would require inspections of the construction site to be conducted prior to anticipated storm events and after the actual storm events. The development and implementation of BMPs in accordance with the CGP would prevent significant construction-related impacts on water quality during construction activities, resulting in a less than significant impact.

Operation of the pump station would require storage of cleaning chemicals needed for operations and occasional cleaning. The site would be designed to contain stored chemicals subject to chemical storage regulations. Compliance with hazardous materials regulations would ensure that impacts to water quality from well operations would not adversely affect local surface water quality. On-site treatment may result in waste streams that would be disposed of in the local sanitary sewer or brine line. Therefore, impacts would be less than significant.

ID-4 CRA Crossing Refurbishment

Project construction activities would be subject to the requirements of the NPDES Construction General Permit. Under the Construction General Permit, a SWPPP would be prepared and implemented, including specific measures and conditions to reduce or eliminate stormwater flow carrying pollutants from the construction activities. The development and implementation of BMPs in accordance with the CGP would prevent significant construction-related impacts on water quality during construction activities, resulting in a less than significant impact. Operation of the ID-4 Crossing would not result in any potential for water quality impacts.

Arundo Removal

The Arundo removal activities would be conducted along the banks of and within the Santa Ana River. As described in the Project Description, the removal would be accomplished using by hand using loppers, chainsaws, brush cutters, tractor-mounted mulching mowers, arm-mounted tractor/cutter and other approved power equipment. Spraying with an herbicide approved for use in the vicinity of aquatic environments may also be used. The removal activities have the potential to release pollutants such as sediment, fuels and lubricants, and herbicides into the river, adversely affecting water quality.

Although the Arundo removal activities would avoid water contact, disturbance on the banks of the low-flow channel could promote erosion that could adversely affect local water quality. The removal activities may not be subject to the state CGP. Implementation of **Mitigation Measure HYDRO-1** would require that OCWD implement BMPs specifically designed to prevent erosion and water quality impacts during Arundo removal activities in the stream channel.

Upon completion of the Arundo removal, the areas would be monitored for new growth of Arundo and other invasive species. As described in the Project Description, the root balls of the Arundo would be left in place to avoid destabilizing the banks and causing erosion. If the remaining root balls sprout new growth, the new growth and root balls would be treated with a USEPA-approved herbicide. Use of the herbicide would be subject to RWQCB herbicide application regulations and manufacturer recommendations. Appropriate use of the chemicals would not adversely affect water quality.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

HYDRO-1: Prior to implementing Arundo donax removal activities, OCWD shall prepare a Storm Water Pollution Prevention Plan that addresses each phase of the activities including site preparation, access, stockpiling, vegetation removal, and disposal activities. At a minimum, the plan shall include the following required Best Management Practices or equivalent measures:

- Erosion prevention BMPs within the application areas.
- Surface water protection BMPs to ensure equipment, personnel and vegetation avoids contact with water to the extent feasible.
- Site access protocols to minimize tracking and erosion.
- Temporary sediment fences or straw waddles when necessary to protect surface water.
- Herbicide storage and application protocols.
- Spill prevention kits near equipment stockpiling areas.

Significance Determination after Mitigation: Less than Significant

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Groundwater Supplies and Recharge

Impact 4.9-2: The proposed Project would not result in groundwater impacts due to potentially deceasing groundwater supplies or interfering with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Chino Basin Production Wells, Refurbishment and Treatment System

Refurbishment and use of Well 34 would enable IEUA to extract an additional 3,000 AFY of groundwater to meet SARCCUP dry year yield objectives. The operation of the well would lower groundwater levels in immediate vicinity during pumping. Well 34 is within the Chino Basin subject to the Chino Basin Watermaster groundwater basin management authority. As a result, the well would operate in conformance with the Chino Basin Adjudication. IEUA and the Watermaster would be responsible for ensuring that groundwater levels do no decrease to such an extent that other groundwater pumpers are adversely affected. In addition, the Chino Basin will be subject to a GSP managed by the GSA that is specifically required to prevent "undesirable effects" that would include lowering groundwater levels of neighboring pumpers. Through the sustainable groundwater basin management imposed by the Watermaster and GSA, the use of Well 34 to support SARCCUP objectives would not result in undesirable effects. Impacts would be less than significant.

Arlington Production Wells and Pipeline

Installation and use of the Arlington well would provide WMWD with additional groundwater extraction capacity to meet SARCCUP dry year yield objectives. The operation of the well would lower groundwater levels in immediate vicinity during pumping. The Arlington well is within the Arlington Subbasin subject to the WMWD's groundwater basin management authority. WMWD would be responsible for ensuring that groundwater levels do no decrease to such an extent that other groundwater pumpers are adversely affected. In addition, the Arlington Basin is subject to a GSP managed by WMWD that is specifically required to prevent "undesirable effects" that would include lowering groundwater levels of neighboring pumpers. Through the sustainable groundwater basin management imposed by the GSA, the use of the Arlington well to support SARCCUP objectives would not result in undesirable effects. Impacts would be less than significant.

Cannon Pump Station

Construction and operation of the Cannon Pump Station project would not affect groundwater supplies. The pump station would support the SARCCUP objectives of delivering water where it is needed in a regionally coordinated fashion. Through the sustainable groundwater basin management imposed on the operation of SARCCUP facilities by the partner agencies and local GSAs, operation of SARCCUP would not result in undesirable effects. Impacts to groundwater supplies from WMWD's water conveyance facilities would be less than significant.

ID-4 CRA Crossing Refurbishment

Refurbishment and operation of the ID-4 CRA crossing would not affect groundwater supplies. The pipeline repair would support the SARCCUP objectives of delivering water where it is needed in a regionally coordinated fashion. Through the sustainable groundwater basin management imposed on the operation of SARCCUP facilities by the partner agencies and local GSAs, operation of SARCCUP would not result in undesirable effects. Impacts to groundwater supplies from WMWD's water conveyance facilities would be less than significant.

Arundo Removal

The removal of *Arundo donax* from the Santa Ana River channel would not adversely affect groundwater supplies. Since the invasive plant relies on groundwater, its removal will increase the availability of groundwater supplies for other uses. The removal of *Arundo donax* within the 640 acres may increase available groundwater supplies by 12,500 AFY. As a result, arundo removal would have a beneficial effect on groundwater supplies.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

Drainage Patterns

Impact 4.9-3: The proposed Project would not result in impacts due to potentially altering the existing drainage pattern of a site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion, siltation, exceedance of stormwater system capacities, additional sources of polluted runoff, or impeded or redirected flood flows.

Chino Basin Production Wells, Refurbishment and Treatment System The Chino Basin Production Wells, Refurbishment and Treatment System project would not be constructed in streams or rivers, and would not alter a course of a stream or add impervious surfaces in a manner that would result in erosion, siltation, exceedance of stormwater system capacities, additional sources of polluted runoff, or impeded or redirected flood flows. The well and treatment system would have a small footprint that would not substantially change the existing drainage patterns. Therefore, the impact relative to erosion, siltation, exceedance of stormwater system capacities, additional sources of polluted runoff, or impeded or redirected flood flows would be less than significant.

Arlington Production Wells and Pipeline

The construction and operation of the Arlington well would not alter a course of a stream or add impervious surfaces in a manner that would result in erosion, siltation, exceedance of stormwater system capacities, additional sources of polluted runoff, or impeded or redirected flood flows. The well would have a small footprint that would not substantially change the existing drainage patterns. Therefore, the impact relative to erosion, siltation, exceedance of stormwater system capacities, additional sources of polluted runoff, or impeded or redirected flood flows would be less than significant.

Cannon Pump Station

The Cannon Pump Station project would not alter a course of a stream or add impervious surfaces in a manner that would result in erosion, siltation, exceedance of stormwater system capacities, additional sources of polluted runoff, or impeded or redirected flood flows. The well and treatment system would have a small footprint that would not substantially change the existing drainage patterns. Therefore, the impact relative to erosion, siltation, exceedance of stormwater system capacities, additional sources of polluted runoff, or impeded or redirected flood flows would be less than significant.

ID-4 CRA Crossing Refurbishment

The ID-4 CRA crossing would not alter a course of a stream or add impervious surfaces in a manner that would result in erosion, siltation, exceedance of stormwater system capacities, additional sources of polluted runoff, or impeded or redirected flood flows. The repaired pipeline crosses over the CRA, but would not change the existing drainage patterns. Therefore, the impact relative to erosion, siltation, exceedance of stormwater system capacities, additional sources of polluted runoff, or impeded or redirected flood flows would be less than significant.

Arundo Removal

The Arundo removal project would be located with the river. The proposed activities would be limited to the removal of surface plant matter. The root balls would be left in place and there would be no other changes to the drainage configuration of the river. Therefore, the impact relative to erosion, siltation, exceedance of stormwater system capacities, additional sources of polluted runoff, or impeded or redirected flood flows would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Flood, Tsunami, or Seiche Zones

Impact 4.9-4: The proposed Project would not risk release of pollutants due to the project inundation from floods, tsunamis, or seiches.

The proposed SARCCUP infrastructure projects would be not located within 100-year flood zones, or close to the ocean and subject to tsunamis, or within or close to large water bodies subject to seiches, resulting in no impact.

Arundo removal activities would occur within the 100-year flood zone of the Santa Ana River. However, the activities would not change the alignment of the river or increase the risk of the release of pollutants during floods. Impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Water Quality Control Plan or Sustainable Groundwater Management Plan

Impact 4.9-5: The proposed Project would not conflict with water quality control plans or sustainable groundwater management plans.

As discussed in Chapter 2*, Project Background*, and Chapter 3*, Project Description*, the purpose of the projects would be to improve the availability and reliability of the water supply. The

SARCCUP projects would be subject to local groundwater management plans, adjudicated judgments, and regional GSPs. SARCCUP is envisioned as a watershed-scale solution to water supply reliability that would be consistent with the designated beneficial uses and water quality objectives of the Santa Ana RWQCB Basin Plan. Therefore, implementation of the projects would not conflict with water quality control plans or the applicable sustainable groundwater management plans.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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4.9.4 References

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4.10 Land Use and Planning

This section evaluates the proposed Project's consistency with current land use, land use designations, land use policies, and identifies impacts to land use that could occur as a result of implementation of the proposed Project.

4.10.1 Environmental Setting

Regional Setting

San Bernardino County

San Bernardino County is made up of 24 cities with a total land area of approximately 12.9 million acres. (County of San Bernardino 2007).

Although San Bernardino County is the largest county in the contiguous United States, approximately 81 percent (10.5 million acres) of the total area is outside of County jurisdiction. Approximately 6 million acres are federal public lands managed by the Bureau of Land Management and 1.9 million acres are owned by the United States Department of Defense. Of the remaining 19 percent of the county's total land area, approximately 4 percent lies within the 24 incorporated cities. Each incorporated city within San Bernardino County has its own General Plan with specific land use designations. The remaining 15 percent (about 1.9 million acres) is entirely unincorporated county jurisdiction (County of San Bernardino 2007).

Riverside County

Riverside County is made up of 28 cities with a total land area of approximately 4.6 million acres. Riverside County contains one 2003 General Plan that has been amended and 19 area plans. Each of the 28 incorporated cities within Riverside County has its own General Plan with specific land use designations (County of Riverside 2017).

The 2003 General Plan depicts Riverside County as being predominately rural and natural in character, Approximately 83 percent of the area in western Riverside County is designated for Agricultural, Rural, Rural Community, or Open Space uses, while these uses make up over 96 percent of the land in the eastern half of the county (County of Riverside 2017).

Local Setting

Chino Basin Bank

City of Montclair

The City of Montclair is located at the western end of San Bernardino County, approximately 35 miles to the east of downtown Los Angeles and 30 miles west of the San Bernardino Civic Center. The western boundary of the city is contiguous with the Los Angeles County line. The city is approximately 6.47 square miles of which 5.1 square miles is fully developed. The remainder consists of vacant and agricultural lands. Most of these can be found south of Holt

Boulevard, which also includes the unincorporated areas under the jurisdiction of San Bernardino County. The city is primarily classified as a residential community and commercial uses account for the second most prominent use (City of Montclair 1999).

The proposed Chino Basin Production Wells, Refurbishment and Treatment System would be implemented within the northwestern portion of the city. The site is has a land use designation of Urban Vacant and zoned as R1, Single Family Residential (City of Montclair 1999).

Riverside-Arlington Bank

City of Riverside

The City of Riverside is located within the northwestern portion of Riverside County, approximately 40 miles to the southeast of downtown Los Angeles and 4.5 miles south of the San Bernardino County line. The city is approximately 81.1 square miles and mostly developed. (City of Riverside 2018a).

The Arlington Production Wells and Pipeline would be implemented within the center of the city boundaries along State Route 91. For one alternative location, Well AD-6 would be located at the intersection of Magnolia Avenue and Jackson Street within a grass field designated as Public Facilities/Institutional (PF) and zoned as Public Facilities (PF). Well AD-7 would be located at the intersection of Magnolia Avenue and Adams Street within a grassy area designated as Mixed-Use Village (MU-V) and zoned as Multi-Family Residential (R-3-1500). The pipeline would start at Well AD-7 and run underground west along Magnolia Avenue just past La Sierra Avenue with the public right-of-way (City of Riverside 2018a).

For the other alternative location, Well AD-6 would be located just off Jackson Street, along a drainage area designated as Business Office Park (B/OP) and zoned as Medium Density Residential (R-1-7000). Well AD-7 would be located at the intersection of Auto Center Drive and Motor Circle within an automobile park within the public right-of-way within an area designated as Commercial Regional Center (CRC) and zoned for Commercial General (CG). The pipeline would start at Well AD-7 and run underground along Auto Center Drive, north on Adams Street, west on Indiana Avenue to Fillmore Street within the public right-of way (City of Riverside 2018a).

The CannonPump Station project facilities would be located off the intersection of Alessandro Boulevard and Overlook Parkway within an undeveloped vegetated area primarily designated as Low Density Residential (LDR). The facilities would be located within an area zoned for Residential Agriculture (RA), Residential Conservation (RC), with a Water Course Overlay (WC). The piping would connect with existing lines located with the public right-of-way (City of Riverside 2018a).

The ID-4 CRA Crossing Refurbishment project area is located within unincorporated Riverside County, south of the City of Riverside. The area is designated as Open Space/Natural Resources (OS) and zoned as Watercourse, Watershed and Conservation Area (W-1) (City of Riverside 2018a).

4.10.2 Regulatory Framework

Federal

Federal Aviation Administration

The Federal Aviation Administration (FAA) is the branch of the U.S. Department of Transportation with regulatory responsibility for civil aviation. The FAA is responsible for establishing policies and regulations to ensure the safety of the traveling public. FAA Advisory Circular (AC) 150/5200-33B addresses hazardous wildlife attractants on or near airports (FAA 2007). This Advisory Circular is intended to provide guidance on siting certain land uses that have the potential to attract potentially hazardous wildlife to a public-use airport or its vicinity. The FAA Advisory Circular recommends against "land use practices that attract or sustain populations of hazardous wildlife within the vicinity of airports or cause movement of hazardous wildlife onto, into, or across the approach or departure airspace, aircraft movement area, loading ramps, or aircraft parking area of airports." (FAA 2007).

State

California Government Code Section 53091

California Government Code Section 53091 specifies that water supply facilities such as those associated with the proposed projects, are exempt from zoning restrictions. Specifically, Section 53091 states (State of California Legislative Council 2003):

(d) Building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency.

(e) Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water.

Caltrans Division of Aeronautics

The State Aeronautics Act[1] requires local jurisdictions that operate public airports to establish Airport Land Use Commissions (ALUCs) or an equivalent designated body to protect the public health, safety, and welfare. The ALUCs or equivalent are responsible for promoting the orderly expansion of airports and adoption of land use measures by local public agencies to minimize exposure to excessive noise and safety hazards near airports. Each ALUC or equivalent designated body is responsible for preparing and maintaining an ALUCP that identifies compatible land uses near each public use airport within its jurisdiction. The ALUCP must provide policies for reviewing certain types of development that occur near airports. State law requires consistency between airport land use compatibility plans and any associated general plans. Caltrans is responsible for the review and approval of all ALUCPs within the State of California.

[1] The State ALUC law is contained in Public Utilities Code Article 3.5, State Aeronautics Act, Section 21661.5, Section 21670 *et seq*., and Government Code Section 65302.3 *et seq*.

Regional

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the federally mandated Metropolitan Planning Organization representing six counties: Los Angeles, Imperial, Orange, Riverside, San Bernardino, and Ventura. The SCAG Regional Comprehensive Plan addresses important regional issues such as housing, traffic/transportation, water, and air quality and serves as an advisory planning document to support and encourage local agencies in their planning efforts.

San Bernardino Associated Governments

San Bernardino Associated Governments (SANBAG) is the council of governments and transportation planning agency for San Bernardino County. SANBAG is responsible for cooperative regional planning and furthering an efficient multi-modal transportation system countywide. SANBAG serves the 2.1 million residents of San Bernardino County. As the County Transportation Commission, SANBAG supports freeway construction projects, regional and local road improvements, train and bus transportation, railroad crossings, call boxes, ridesharing, congestion management efforts and long-term planning studies.

Western Riverside Council of Governments

The Western Riverside Council of Governments (WRCOG) has representatives from 17 cities, the Riverside County Board of Supervisors, the Eastern and Western Municipal Water Districts, and the Morongo Band of Mission Indians. WRCOG focuses on a number of regional matters such as cooperative planning, coordination and technical assistance on issues of mutual concern that cross jurisdictional lines. WRCOG's program areas are varied and include transportation, environment, energy, economy, and health (WRCOG 2018).

Western Riverside County Multiple Species Habitat Conservation Plan

The Western Riverside County MSHCP is a comprehensive, multi-jurisdictional HCP focused on the conservation of species and their associated habitats in western Riverside County. The primary goal of the MSHCP is to maintain biological and ecological diversity within a rapidly urbanizing region. The MSHCP involves the assembly and management of a 500,000-acre Conservation Area for the conservation of natural habitats and their constituent wildlife populations. The MSHCP was developed to serve as a HCP pursuant to the NCCP Act and Section 10(a)(1)(B) of the FESA. The MSHCP encompasses 1.26 million acres and includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line as well as jurisdictional areas of the Cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto. The overarching purpose of the plan is to balance development and economic interests with species and lands conservation goals. The MSHCP permits development of lands and take of species “in exchange for the assembly and management of a coordinated MSHCP Conservation Area” (Western Riverside County Regional Conservation Authority 2018).

County of San Bernardino General Plan

The Land Use Element of the County of San Bernardino 2007 General Plan functions as a guide to planners, the general public, and decision makers as to the ultimate pattern of development for the County of San Bernardino (County of San Bernardino 2007). Goals and policies that apply to the proposed Chino Basin Production Wells, Refurbishment and Treatment System are listed below.

> **LU 1.1** Develop a well-integrated mix of residential, commercial, industrial, and public uses that meet the social and economic needs of the residents in the three geographic regions of the County: Valley, Mountain, and Desert.

GOAL LU 11. Promote mutually beneficial uses of land to address regional problems through coordination and cooperation among the County, the incorporated cities, Southern California Association of Governments (SCAG), San Bernardino Associated Governments (SANBAG), the various special districts and other local, state, and federal agencies.

Local

Riverside County Airport Land Use Compatibility Plan

The Riverside County Airport Land Use Compatibility Plan, adopted by the Riverside County ALUC establishes policies to land use compatibility planning in the vicinity of airports throughout Riverside County. The plan includes compatibility criteria, maps of AIAs, and procedural requirements associated with the compatibility review of development proposals (Riverside County ALUC 2004). Policies contained within this ALUC and associated amendments apply to the Santa Ana River Arundo Removal project and Arlington Productions Wells and Pipeline project.

County of Riverside General Plan

The County of Riverside General Plan recognizes 19 geographic planning areas within the county. The Land Use Element presents goals and policies that guide future development patterns in the county. Goals and policies that apply to the Arlington Production Wells and Pipeline, Cannon Pump Station, and ID-4 CRA Crossing Refurbishment projects are listed below.

> **Policy LU 22.3.** Require that adequate and available circulation facilities, water resources, and sewer facilities meet the demands of the proposed residential land use.
>
> **Policy LU 25.1.** Accommodate the development of public facilities in areas appropriately designated by the General Plan and area plan land use maps.

County of Riverside Zoning Code

The ID-4 CRA Crossing Refurbishment project area is zoned as Watercourse, Watershed and Conservation Area (W-1) by the County of Riverside. Typical uses within this zone include, land subject to periodic flooding and other hazards, and not suitable for permanent occupancy. Permitted uses include agriculture, apiaries, grazing of farm stock, golf courses without buildings,

aquaculture. An approved Conditional Use Permit is required for airports, heliports, hunting clubs, shooting ranges, recreational vehicle parks, and athletic fields (County of Riverside 2018).

City of Montclair General Plan

The City of Montclair 1999 General Plan has adopted a land use goal and several land use objectives to guide the formation of the Land Use Plan for the City. Policies tailored to achieve the goal and objectives were established to augment and support the plan (City of Montclair 1998). Objectives that apply to the Chino Basin Production Wells, Refurbishment and Treatment System project are listed below.

> **LU-1.1.0.** To encourage compatible land uses within the City.
>
> **LU-1.2.0.** To promote the mitigation of existing land use conflicts.
>
> **LU-1.3.0**. To promote the rational utilization of underdeveloped and undeveloped parcels.

City of Montclair Zoning Code

The Chino Basin Production Wells, Refurbishment and Treatment System project area is zoned as R-1, Single Family Residential by the City of Montclair. R-1 is defined in the City of Montclair Zoning Code as:

> The R-1 Single-Family Residential Zone is intended as a district of single-family homes with not more than one primary dwelling unit, a maximum of one second dwelling unit pursuant to Chapter 11.23 of this title, and detached accessory building(s) pursuant to Chapter 11.19 of this title, upon one lot. Except as specifically provided elsewhere in this title, any and every building and premises or land in the R-1 Zone shall be used for, or occupied, and every building shall be erected, constructed, established, altered, enlarged, maintained, and moved into or within such R-1 Zone exclusively and only in accordance with the provisions set forth in this chapter. (City of Montclair 2018)

City of Riverside General Plan

The City of Riverside's 2025 General Plan Land Uses and Urban Design Element contains various objectives and goals related to the future development within the city. Objectives and goals that apply to the Arlington Production Wells and Pipeline, Cannon Pump Station, and ID-4 CRA Crossing Refurbishment projects are listed below.

> **Objective LU-2**: Recognize and enhance the Santa Ana River's multiple functions: a place of natural habitat, a place for recreation and a conveyance for stormwater runoff.
>
> > **Policy LU-2.2**: Utilize the 2004 Santa Ana River Task Force Report in planning, programming and implementing environmental and recreational improvements to the River area.
>
> **Objective LU-7:** Preserve and protect significant areas of native wildlife and plant habitat, including endangered species.

Policy LU-7.4: Continue to participate in the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

Objective LU-9: Provide for continuing growth within the General Plan Area, with land uses and intensities appropriately designated to meet the needs of anticipated growth and to achieve the community's objectives.

Policy LU-9.4: Promote future patterns of urban development and land use that reduce infrastructure construction costs and make better use of existing and planned public facilities when considering amendments to the Land Use Policy Map (Figure LU-10).

City of Riverside Zoning Code

The proposed Project components would be implemented within various zones in the City of Riverside as defined below (City of Riverside 2018):

Public Facilities (PF)

The Public Facilities Zone (PF) is established to create and preserve areas for official and public uses of property and related activities, including civic center, public schools, public buildings, parks and recreation facilities, waterworks and drainage facilities, and similar areas that, for the welfare of the City, should be kept clear of particular structures or improvements, and for watershed areas for conservation of flood or storm waters or for protection against flood or storm waters.

Multi-Family Residential (R-3-1500)

The Residential Agricultural Zone (RA-5) 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.

Medium Density Residential (R-1-7000)

Medium High Density Residential Zones (R-3-4000 and R-3-3000) and High Density Residential Zones (R-3-2500, R-3-2000 and R-3-1500) are established to provide areas for multiple family residences within a single structure, including such residential development types as apartments, town homes and condominiums.

Commercial General (CG)

The Commercial General Zone (CG) is intended to allow for more intense service commercial retail, office, and repair uses. The CG Zone allows for some outdoor retail uses.

Residential Agriculture (RA)

The Residential Agricultural Zone (RA-5) 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.

Residential Conservation (RC)

The Residential Conservation Zone (RC) is established consistent with General Plan objectives and voter approved initiatives (Proposition R and Measure C) to protect prominent ridges, hilltops and hillsides, slopes, arroyos, ravines and canyons, and other areas with high

visibility or topographic conditions that warrant sensitive development from adverse development practices, and specifically, to achieve the following objectives:

1. To preserve and enhance the beauty of the City's landscape;
2. To maximize the retention of the City's natural topographic features, including but not limited, to skyline profiles, ridgelines, ridge crests, hilltops, hillsides, slopes, arroyos, ravines, canyons, prominent trees and rock outcrops, view corridors, and scenic vistas through the careful selection and construction of building sites and building pads on said topographic features.
3. To assure that residential use of said topographic features will relate to the surrounding topography and will not be conspicuous and obtrusive because of the design and location of said residential use;
4. To reduce the scarring effects of excessive grading for building pads and cut and fill slopes;
5. To prevent the construction of slopes inadequately protected from erosion, deterioration or slippage; and
6. To conserve the City's natural topographic features.

4.10.3 Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the significance of impacts related to Land Use and Planning are based on Appendix G of the *CEQA Guidelines*. The proposed Project would result in a significant impact to Land Use and Planning if it would:

- Physically divide an established community (see Impact 4.10-1, below);
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purposed of avoiding or mitigating an environmental effect (see Impact 4.10-2, below); or
- Conflict with any applicable habitat conservation plan or natural community conservation plan (see Impact 4.10-3, below).

Impacts Discussion

Proposed Project facilities include aboveground structures such as groundwater treatment systems, wellheads, pump stations, and smaller ancillary facilities. Other facilities would be located underground, such as pipelines and groundwater wells. Land use impacts associated with underground structures would be short-term and would only occur during the construction phase of Project implementation. Long-term land use impacts would be associated with aboveground structures.

Divide an Established Community

Impact 4.10-1: The proposed Project would not result in impacts regarding the physically division of an established community.

The physical division of an established community generally refers to the construction of features such as an interstate highway, railroad tracks, or permanent removal of a means of access, such as a local road or bridge that would impact mobility within an existing community or between a community and outlying area. The proposed construction and operation of the projects would not create any physical barriers or linear development within an established community. As a result, there would not be impacts related to physically dividing an established community.

Significance Determination before Mitigation: No Impact

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: No Impact

Conflict with Applicable Plans, Policies, or Regulations

Impact 4.10-2: The proposed Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purposed of avoiding or mitigating an environmental effect.

Chino Basin Production Wells, Refurbishment and Treatment System

The proposed Chino Basin Production Wells, Refurbishment and Treatment System is an existing well site that is partially developed with well facilities. Implementation of well refurbishment and new treatment facilities would be consistent with the character of the existing Well 34 site and would not substantially alter the existing character of facilities on the site. Furthermore, per Government Code Section 53091, building ordinances of local cities or counties do not apply to the location or construction of facilities for the projection, generation, storage, treatment, or transmission of water or wastewater. Therefore, any Project facilities that conflict with local General Plan land use designations would not be subject to a conditional use permit or general plan amendment.

Arlington Production Wells and Pipeline

Pipelines associated with the proposed Arlington Production Wells and Pipeline would be installed primarily within or adjacent to public rights-of-way and would not conflict with land use designations or be incompatible with neighboring land uses. In addition, underground pipelines, once constructed would not pose long-term incompatibility with land uses. Per Government Code Section 53091, building ordinances of local cities or counties do not apply to the location or construction of facilities for the projection, generation, storage, treatment, or transmission of

water or wastewater. Therefore, any Project facilities that conflict with local General Plan land use designations would not be subject to a conditional use permit or general plan amendment.

Cannon Pump Station

Per Government Code Section 53091, building ordinances of local cities or counties do not apply to the location or construction of facilities for the projection, generation, storage, treatment, or transmission of water or wastewater. Therefore, any Project facilities that conflict with local General Plan land use designations would not be subject to a conditional use permit or general plan amendment.

ID-4 CRA Crossing Refurbishment

The proposed refurbishment activities at the ID-4 CRA Crossing Refurbishment project site would not alter or change the current use of the project facilities within the project area. As such, there would be no conflicts with land use designations or existing neighborhood land uses. Therefore, impacts would be less than significant.

Arundo Removal

The Santa Ana River Arundo Removal project would not implement any built structures or develop facilities within the project area that could potentially conflict with any applicable land use plan, policy, or regulation. Therefore, no impacts would occur.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Conflict with Conservation Plans

Impact 4.10-3: The proposed Project would not conflict with an applicable habitat conservation plan or natural community conservation plan and would require mitigation to reduce potentially significant impacts to less than significant levels.

Chino Basin Production Wells, Refurbishment and Treatment System

The proposed Chino Basin Production Wells, Refurbishment and Treatment System project area is not located within an adopted habitat conservation plan or natural community conservation plan. Therefore, this project would not conflict with any conservation plan.

Arlington Production Wells and Pipeline

The Arlington Production Wells would be located within the Western Riverside County MSHCP. However, the project area is not located within any conserved lands or criteria cells. Further, the

project area consists of existing developed roads and does not support any native habitat. Therefore, the Arlington Production Wells would not conflict with the Western Riverside County MSHCP.

Cannon Pump Station

The Cannon Pump Station project pipelines, pump stations and other facilities would be located within the Western Riverside MSHCP and the project area supports native habitat. The project area is not located within any conserved lands or criteria cells. Therefore, the Cannon Pump Station would not conflict with the Western Riverside County MSHCP.

ID-4 CRA Crossing Refurbishment

The ID-4 CRA Crossing Refurbishment project area is located within the Western Riverside County MSHCP and Stephens Kangaroo Rat Habitat ConservatinPlan (SKRHCP). The project area is not located within any conserved lands or criteria cells of the MSHCP or within historically occupied areas identified in the SKRHCP. Therefore, implementation of the ID-4 CRA Crossing project would be consistent with the SKRHCP and MSHCP.

Arundo Removal

The Santa Ana River Arundo Removal project is located within the Western Riverside County MSHCP and the proposed Upper Santa Ana River HCP. The project would improve the riparian habitat conditions within the Santa Ana River watershed, thereby enhancing habitat conditions for federally and state listed wildlife species, and other wildlife, known to occupy the project area. Habitat restoration and enhancement is in line with the objectives of the Western Riverside County MSHCP and the proposed Upper SAR HCP, and would not conflict with the provisions of either HCP. No impact would occur.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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4.10.4 References

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4.11 Minerals

This section includes a description of mineral resources in the proposed Project areas, and the impacts that could occur to mineral resources as a result of implementing the proposed Project.

4.11.1 Environmental Setting

Regional Setting

Minerals are naturally occurring chemical elements or compounds, or groups of elements or compounds that were not formed by organisms. Naturally occurring concentrations of minerals in the earth's crust are known as mineral deposits. Mineral resources are mineral deposits from which the economic extraction of a commodity (such as gold or copper) is currently potentially feasible. In addition to metallic minerals, materials used for construction (e.g., sand and aggregate), industrial and chemical processes (e.g., salt), and fuel (e.g., crude oil) are considered mineral resources in California (DOC, 2017).

Mineral Resource Zones

Based on guidelines adopted by the California Geological Survey (CGS) Mineral Resource Zones (MRZs) are classified according to the presence or absence of significant nonfuel mineral resources deposits. Nonfuel mineral resources include metals such as gold, silver, iron, and copper; industrial metals such as boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone; and construction aggregate, including sand, gravel, and crushed stone. These classifications indicate the potential for a specific area to contain significant mineral resources (DOC 2017).

The classification process involves the determination of Production-Consumption (P-C) Region boundaries, based on identification of active aggregate operations (Production) and the market area served (Consumption). The P-C regional boundaries are modified to include only those portions of the region that are urbanized or urbanizing and are classified for their aggregate content. An aggregate appraisal further evaluates the presence or absence of significant sand, gravel, or stone deposits that are suitable sources of aggregate. The classification of these mineral resources is a joint effort of the state and local governments. It is based on geologic factors and requires that the State Geologist classify the mineral resources area as one of the four MRZs or as a Scientific Zone (SZ) (DOC 2013):

MRZ-1: Areas where available geologic information indicates there is little or no likelihood for presence of significant mineral resources.

MRZ-2: Areas where available geologic information indicates that significant measured or indicated resources are present or where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.

MRZ-3: Areas where available geologic information indicates known or inferred mineral occurrences of undetermined mineral resource significance.

MRZ-4: Areas of no known mineral occurrences where geologic information does not rule out the presence or absence of significant mineral resources.

SZ: Areas containing unique or rare occurrence of rocks, minerals, or fossils that are of outstanding scientific significance.

San Bernardino County

The Desert Planning Region, which includes the Mojave Desert and 93 percent of the land within the eastern portion of the county, accounts for over 90 percent of all county mining activities (County of San Bernardino 2007). There are currently 95 active mines within San Bernardino County; the main commodities mined include aggregate (sand and gravel), decorative rock, and iron (San Bernardino County 2015).

The western portion of San Bernardino County is largely designated as "urban area" and are not MRZs. Portions of the cities of Montclair, Upland, and Rancho Cucamonga are designated as MRZ-2 zones (DOC 2007). The eastern portion of San Bernardino County contains multiple MRZ-2 zones within the cities of Fontana and San Bernardino along with portions of the City of Rialto and along the Santa Ana River. MRZ-1 and urban areas separate these MRZ-2 zones (DOC 2008).

Riverside County

Riverside County has extensive deposits of clay, limestone, iron, sand, and aggregates. Mineral deposits in Riverside County are important to many industries, including construction, transportation, and chemical processing. The value of mineral deposits within Riverside County is enhanced by close proximity to urban areas (County of Riverside 2015a).

Most of the western portion of Riverside County is within an MRZ-3 zone with small areas of the county along Interstate 15 zoned as MRZ-2. The Midwestern portion of the county is primarily unstudied and has no MRZ classification, while the eastern portion of the county is primarily designated as MRZ-4. Furthermore, there are MRZ-2 zones and small areas of Riverside County that are designated as "significant" by the State along I-10 and SR-11 where it meets SR-62 (County of Riverside 2015b).

Local Setting

Chino Basin Bank

City of Montclair

The proposed Chino Basin Production Wells, Refurbishment and Treatment System would be constructed in the City of Montclair within the northwestern portion of the Chino Basin. Aggregate reserves (sand and gravel) are the only commercial grade mineral resources identified within the City of Montclair. Large amounts of sand and gravel have been removed from the northern portion of the City of Montclair. Currently, there are no active mining activities within the city. Past mining activities have left several large pits in the cities of Montclair and Upland,

which are now being used for flood control and water conservation purposes. Future utilization of sand and gravel resources is unlikely due to the extensive urban development within the city (City of Montclair 1999). The Chino Basin Production Wells, Refurbishment and Treatment System is located within a MRZ-2 area (**Figure 4.11-1**). There are no mineral resource recovery sites designated by the City of Montclair General Plan (City of Montclair 1999).

Riverside-Arlington Bank

City of Riverside

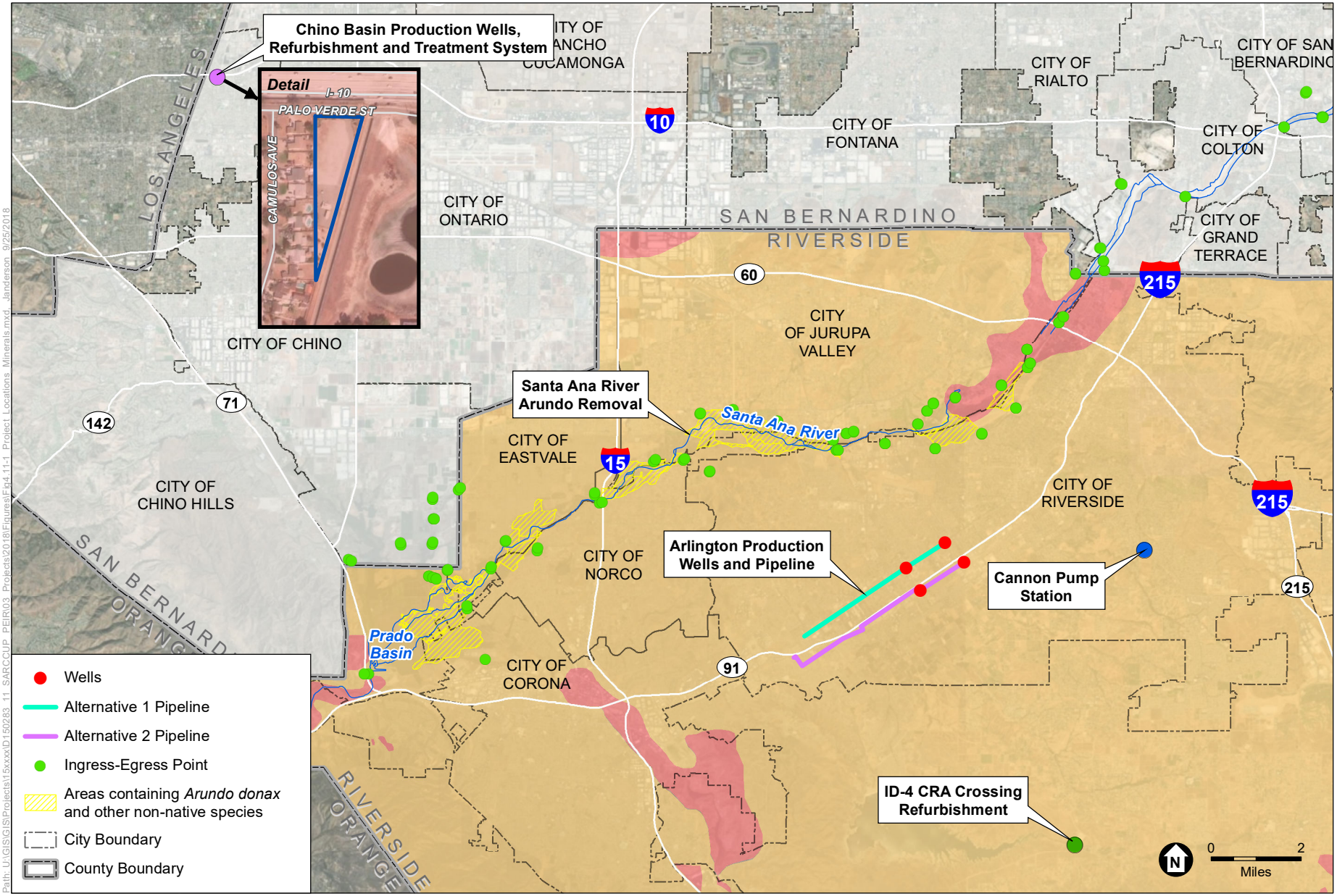
The Arlington Production Wells and Pipeline and Cannon Pump Station project would be constructed in the City of Riverside within the Riverside-Arlington Basin Bank. Historically, the quarrying of granitic rock was a significant industry in the City of Riverside. However, these operations have not been active for decades and most extraction sites are now beyond the urban periphery. While mineral extraction no longer plays a major role in Riverside's economy, the area generally bound by Market Street, Mission Boulevard, the Santa Ana River and Lake Evans is a state-classified MRZ-2. The eastern half of the city is designated as MRZ-3; indicating that the area contains known or inferred mineral occurrences of undetermined mineral resource significance and scattered areas harbor marginally economic deposits of feldspar, silica, limestone and other rock products (City of Riverside 2012). The Arlington Production Wells and Cannon Pump Station projects are located within MRZ-3 areas (refer to Figure 4.11-1). The City of Riverside General Plan designates the Cannon Pump Station project area as a mineral resource recovery zone (City of Riverside 2012).

The ID-4 CRA Crossing Refurbishment project is located within unincorporated Riverside County, south of the City of Riverside, but in its Sphere of Influence[1], and in an area designated as MRZ-3 (refer to Figure 4.11-1). The ID-4 CRA Crossing Refurbishment project area is not located within a mineral resource recovery zone (City of Riverside 2012).

Santa Ana River

The Santa Ana River drains from the San Bernardino Mountains to the valley floor of the Inland Empire, through the Prado Basin and on to Orange County and the Pacific Ocean. The Santa Ana River contains significant mineral deposits used for aggregate materials for San Bernardino, Riverside, and Orange Counties. The River thus has various MRZ designations for construction aggregate. The Santa Ana River is primarily designated as a MRZ-3 zone on its path through the Inland Empire until the Prado Basin area, where it turns into a MRZ-2 zone. The Santa Ana River is designated as a MRZ-2 zone within portions of northern Orange County, and then MRZ-3 zones as the River drains into the Pacific Ocean (DOC 2008; DOC 2007; DOC 1995a). The Arundo removal would take place along the Santa Ana River in MRZ-3 and MRZ-2 areas (refer to Figure 4.11-1). The City of Riverside General Plan 2025 designates a portion of the Santa Ana River, surrounding SR-60 as a mineral resource recovery zone.

1 Sphere of Influence: a field or area in which an individual or organization (jurisdiction) has power to affect events and developments



SOURCE: ESRI; Riverside County; San Bernardino County

SARCCUP

Figure 4.11-1
Mineral Resource Zone within Project Area

ESA

4.12.2 Regulatory Framework

State

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (SMARA) requires the State Mining and Geology Board to adopt state policies for reclaiming mined lands and conserving mineral resources.

In accordance with SMARA, the State has established the California Mineral Land Classification System to help identify and protect mineral resources in areas that are subject to urban expansion or other irreversible land uses that would preclude mineral extraction. Protected mineral resources include construction materials, industrial and chemical mineral materials, metallic and rare minerals, and nonfluid mineral fuels (DOC 2013).

4.12.3 Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the significance of impacts related to mineral resources are based on Appendix G of the *CEQA Guidelines*. The proposed Project would result in a significant impact to mineral resources if it would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state (see Impact 4.11-1, below); or
- Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan (see Impact 4.11-1, below).

Impacts Discussion

Loss of Known Mineral Resources

Impact 4.11-1: The proposed Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

Chino Basin Production Wells, Refurbishment and Treatment System

The proposed Chino Basin Production Wells, Refurbishment and Treatment System site is located within an MRZ-2 designated zone (refer to Figure 4.11-1). The treatment system would cover approximately 1.5 acres of surface area and excavation would be limited to 6 feet deep to install the pipelines to the city's sewer system. Excavated material would be used to back-fill the pipe and trench. The area is fully developed limiting access to mineral resource removal (City of Montclair 1999). Therefore, implementation of the proposed groundwater treatment system at Well 34 would result in less than significant impacts.

The proposed Chino Basin Production Wells, Refurbishment and Treatment System would construct pipeline connections to existing lines in Palo Verde Street. The pipelines would be located within highly disturbed existing rights-of-way and access to mineral resources in the area is limited by existing development. Therefore, implementation of the proposed conveyance pipelines would have a less than significant impact on availability of mineral resources.

Arlington Production Wells and Pipeline

The Arlington Production Wells would be located within a MRZ-3 area which is highly developed (refer to Figure 4.11-1). The well sites, which would be housed within a single-story structure, would not be large enough to interfere with the exploitation of mineral resources. Further, as described above, implementation of the project would not prohibit the future extraction of mineral resources after the life span of the well. Therefore, implementation of the proposed wells would not result in the loss of availability of mineral resources that would be of value to the region and residents of the state. Impacts would be less than significant. The pipelines would be located within highly disturbed existing rights-of-way and access to mineral resources in the area is limited by existing development. Therefore, implementation of the proposed conveyance pipelines would have a less than significant impact on availability of mineral resources.

Cannon Pump Station

The Cannon Pump Station project area is not located within an area that is actively being used for mineral excavation. Therefore, implementation of proposed pump stations and other ancillary facilities would have no impact on the availability of mineral resources that would be of value to the region and residents of the state.

ID-4 CRA Crossing Refurbishment

The ID-4 CRA would be located within a highly disturbed area where access to mineral resources is limited by the CRA. Therefore, implementation of the proposed conveyance pipelines would have a less than significant impact on availability of mineral resources.

Arundo Removal

The Santa Ana River Arundo Removal would take place within various areas along the Santa Ana River. The River is designated as MRZ-3 and MRZ-2, (refer to Figure 4.11-1). The portions of the River that encompass the proposed Santa Ana River Arundo Removal is not located within an area that is actively being used for mineral extraction. The invasive *Arundo donax* would be removed along the River, and no facilities or built structures would be constructed within these areas. Therefore, implementation of the proposed Santa Ana River Arundo Removal project would have no impact to the availability of mineral resources.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Loss of Mineral Resource Recovery Site

Impact 4.11-2: The proposed Project would have no impact to the availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Chino Basin Production Wells, Refurbishment and Treatment System

The proposed Chino Basin Production Wells, Refurbishment and Treatment System would take place within an MRZ-2, within the City of Montclair. According to the City of Montclair General Plan, the city does not contain any mineral resource recovery sites. Therefore, implementation of the proposed groundwater treatment system and well refurbishment activities at Well 34 would not impact a mineral resource recovery site. The pipelines would not be located within areas delineated as mineral resource recovery zones. Therefore, there would be no impact to mineral resource recovery zones.

Arlington Production Wells and Pipeline

The Arlington Production Wells would not be located within the City-designated mineral resource recovery sites as delineated within the Open Space and Conservation Element (City of Riverside General Plan 2012). Therefore, implementation of the proposed project would have no impact to a mineral resource recovery site. The pipelines would not be located within areas delineated as mineral resource recovery zones. Therefore, there would be no impact to mineral resource recovery zones.

Cannon Pump Station

The Cannon Pump Station project's pump stations and ancillary facilities would be located within a mineral resource recovery site as delineated within the Open Space and Conservation Element of the General Plan 2025. However, loss of surface access to the locally important mineral resources within the areas proposed Canyon Pump Station project facilities would not prohibit the future extraction of mineral resources after the life span of these proposed facilities. Therefore, implementation of the Canyon Pump Station project facilities would result in less than significant impacts to a mineral resource recovery site.

ID-4 CRA Crossing Refurbishment

The ID-4 CRA Crossing would not limit access to mineral resource recovery zones. Therefore, there would be no impact to mineral resource recovery zones.

Arundo Removal

The Santa Ana River Arundo Removal project would take place within various areas along the Santa Ana River. A portion of the Santa Ana River located within the City of Riverside's Sphere of Influence around SR-60 is located within an area designated as mineral resource recovery site.

However, removal of an invasive species within and around the river would not interfere with the extraction of mineral resources at any time within these areas. The implementation of the Arundo Removal project would result in a less than significant impact to a mineral resource recovery site.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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4.11.4 References

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4.12 Noise

This section provides background information on noise and vibration, as well as applicable regulatory framework, potential impacts associated with implementation of the proposed Project and mitigation measures to reduce those impacts to a level of less than significant.

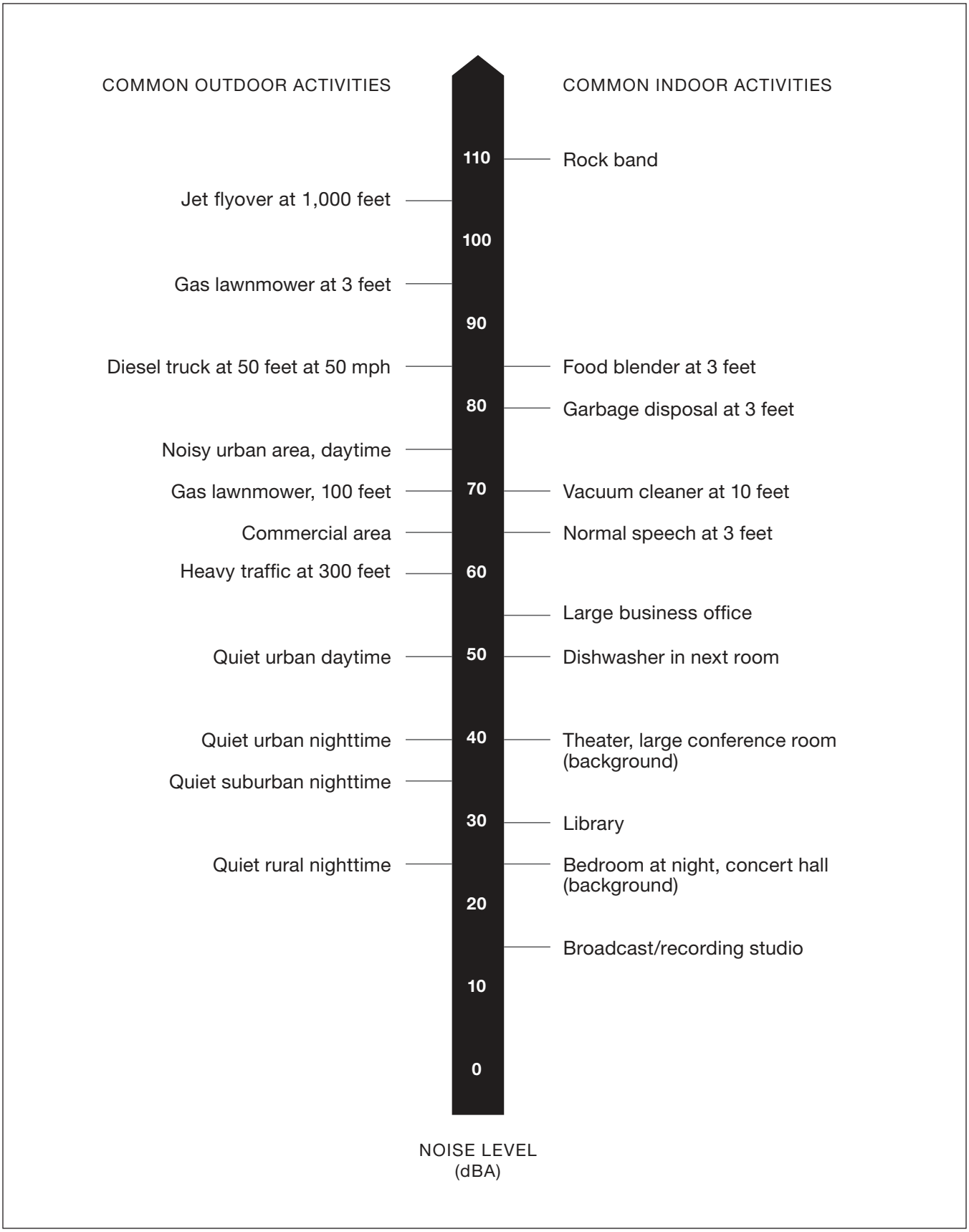
4.12.1 Environmental Setting

Environmental Noise Fundamentals

Noise is defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) which is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequencies spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements. Some representative noise sources and their corresponding A-weighted noise levels are shown in **Figure 4.12-1**.



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SOURCE: Caltrans

SARCCUP

Figure 4.12-1
Decibel Scale and Common Noise Sources

ESA

Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. The noise levels presented in Figure 4.12-1 are representative of measured noise at a given instant in time, however, they rarely persist consistently over a long period of time. Rather, community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable.

The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. What makes community noise constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment varies the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: the equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The Leq is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

Lmax: the instantaneous maximum noise level for a specified period of time.

CNEL: similar to the Ldn, the Community Noise Equivalent Level (CNEL) adds a 5-dBA penalty during the evening hours between 7:00 PM and 10:00 PM in addition to a 10-dBA penalty between the hours of 10:00 PM and 7:00 AM

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning; and
- physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- a change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- a 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver such as parking lots or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans 2009).

Fundamentals of Vibration

As described in the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment* (FTA 2006), ground-borne vibration can be a concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly and sick), and vibration sensitive equipment.

The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings.

Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others because of the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, hotels, schools, day care centers, rest homes, and hospitals are generally more sensitive to noise than commercial and industrial land uses. There are numerous sensitive receptors throughout the Project area and there is the potential for many sensitive receptors to be within 500 feet of existing and proposed Project facilities.

4.12.2 Regulatory Framework

Federal

Under the authority of the Noise Control Act of 1972, the United States Environmental Protection Agency (USEPA) established noise emission criteria and testing methods published in Parts 201 through 205 of Title 40 of the Code of Federal Regulations (CFR) that apply to some transportation equipment (e.g., interstate rail carriers, medium trucks, and heavy trucks) and construction equipment. In 1974, the USEPA issued guidance levels for the protection of public health and welfare in residential land use areas.[1] The guidance levels specified an outdoor L_{dn} of 55 dBA and an indoor L_{dn} of 45 dBA. These guidance levels are not considered as standards or regulations and were developed without consideration of technical or economic feasibility. There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the proposed Project.

[1] USEPA, EPA Identifies Noise Levels Affecting Health and Welfare. April 12, 1974.

Federal Transit Authority Vibration Standards

The FTA has identified a daytime 1-hour L_{eq} level of 90 dBA as a noise level where adverse community reaction could occur at residential land uses.[2] This noise level is used here to assess whether construction-related on-site and off-site noise levels would have the potential to cause a substantial temporary or periodic increase in ambient noise levels at sensitive receptor locations.

State

Noise

The State of California does not have statewide standards for environmental noise, but the California Department of Public Health (DPH) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure (**Table 4.12-1** below). The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise compatibility by different land uses types is categorized into four general levels: "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable." For instance, a noise environment ranging from 50 dBA CNEL to 65 dBA CNEL is considered to be "normally acceptable" for multi-family residential uses, while a noise environment of 75 dBA CNEL or above for multi-family residential uses is considered to be "clearly unacceptable."

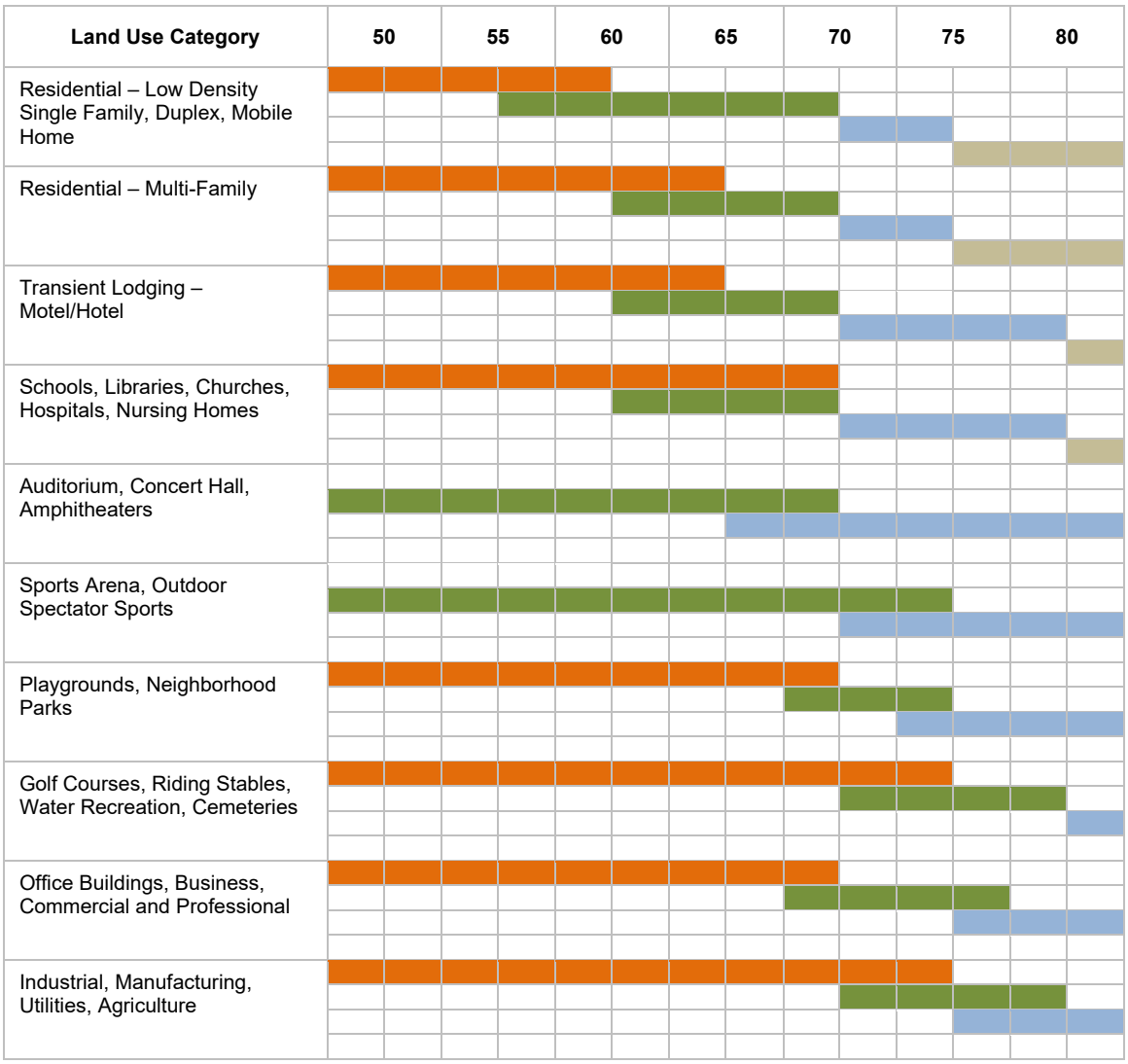
Vibration

There are no state vibration standards. Moreover, according to the California Department of Transportation's (Caltrans) *Transportation and Construction Vibration Guidance Manual*, there are no official Caltrans standards for vibration.[3] However, this manual provides guidelines that can be used as screening tools for assessing the potential for adverse vibration effects related to structural damage and human perception. The manual is meant to provide practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. The vibration criteria established by Caltrans for assessing structural damage and human perception are shown in **Table 4.12-2**, and **Table 4.12-3**, respectively.

2 FTA, Transit Noise and Vibration Impact Assessment. May 2006.

3 Caltrans, 2013. Transportation and Construction Vibration Guidance Manual. September.

TABLE 4.12-1
COMMUNITY NOISE EXPOSURE - LDN OR CNEL (DBA)



	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New construction or development generally should not be undertaken.

SOURCE: State of California, Governor's Office of Planning and Research, 2003. *General Plan Guidelines*.

TABLE 4.12-2
CALTRANS VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA

	Maximum PPV (in/sec)	
Structure and Condition	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

NOTE: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

SOURCE: Caltrans, 2013. Transportation and Construction Vibration Guidance Manual. September.

TABLE 4.12-3
CALTRANS VIBRATION ANNOYANCE POTENTIAL CRITERIA

	Maximum PPV (in/sec)	
Structure and Condition	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

NOTE: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

SOURCE: Caltrans, 2013. Transportation and Construction Vibration Guidance Manual. September.

Regional

San Bernardino County Development Code

Noise. Section 83.01.080 of the County of San Bernardino Development Code establishes standards concerning acceptable noise levels for both noise sensitive land uses and for noise generating land uses.

C. Noise standards for stationary noise sources.

1. **Noise standards. Table 4.12-4** describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties.

TABLE 4.12-4
NOISE STANDARDS FOR STATIONARY SOURCES

Affected Land Uses (Receiving Noise)	7 a.m. – 10 p.m. Leq dBA	10 p.m. – 7 a.m. Leq dBA
Residential	55	45
Professional Services	55	55
Other Commercial	60	60
Industrial	70	70

SOURCE: San Bernardino County Development Code, Table 83-2, February 2009.

2. **Noise limit categories.** No person shall operate or cause to be operated a source of sound at a location or allow the creation of noise on property owned, leased, occupied, or otherwise controlled by the person, which causes the noise level, when measured on another property, either incorporated or unincorporated, to exceed any one of the following:
   a. The noise standard for the receiving land use as specified in Subsection B (Noise impacted areas), above, for a cumulative period of more than 30 minutes in any hour.
   b. The noise standard plus 5 dB(A) for a cumulative period of more than 15 minutes in any hour.
   c. The noise standard plus 10 dB(A) for a cumulative period of more than five minutes in any hour.
   d. The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour.
   e. The noise standard plus 20 dB(A) for any period of time.

D. Noise standards for adjacent mobile noise sources. Noise from mobile sources may affect adjacent properties adversely. When it does, the noise shall be mitigated for any new development to a level that shall not exceed the standards described in the following **Table 4.12-5**.

TABLE 4.12-5
NOISE STANDARDS FOR ADJACENT MOBILE NOISE SOURCES

Land Use		LDN (or CNEL) dBA	
Categories	**Uses**	**Interior[1]**	**Exterior[2]**
Residential	Single and multi-family, duplex, mobile homes	45	60[3]
Commercial	Hotel, motel, transient housing	45	60[3]
	Commercial retail, bank, restaurant	50	N/A
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	N/A
Institutional/Public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	N/A	65

(1) The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.

(2) The outdoor environment shall be limited to:

- Hospital/office building patios
- Hotel and motel recreation areas
- Mobile home parks
- Multi-family private patios or balconies
- Park picnic areas
- Private yard of single-family dwellings
- School playgrounds

(3) An exterior noise level of up to 65 dBA (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dBA (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

SOURCE: San Bernardino County Development Code, Table 83-3, February 2009.

E. Increases in allowable noise levels. If the measured ambient level exceeds any of the first four noise limit categories in Subsection (d)(2), above, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If the ambient noise level exceeds the fifth noise limit category in Subsection (d)(2), above, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

F. Reductions in allowable noise levels. If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in Table 83-2 (Noise Standards for Stationary Noise Sources) shall be reduced by 5 dB(A).

G. Exempt noise. The following sources of noise shall be exempt from the regulations of this Section:

1. Motor vehicles not under the control of the commercial or industrial use.
2. Emergency equipment, vehicles, and devices.
3. Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

Vibration.

A. Vibration standard. No ground vibration shall be allowed that can be felt without the aid of instruments at or beyond the lot line, nor shall any vibration be allowed which produces a particle velocity greater than or equal to two-tenths (0.2) inches per second measured at or beyond the lot line.

B. Vibration measurement. Vibration velocity shall be measured with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity, or acceleration. Readings shall be made at points of maximum vibration along any lot line next to a parcel within a residential, commercial and industrial land use zoning district.

C. Exempt vibrations. The following sources of vibration shall be exempt from the regulations of this Section.

1. Motor vehicles not under the control of the subject use.
2. Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

Local

Local noise control is addressed through implementation of general plan policies, including noise and land use compatibility guidelines, and through enforcement of noise ordinance standards. Noise ordinances regulate such sources as mechanical equipment and amplified sounds as well as prescribe noise limits in residential and commercial zones. Noise regulations of the County of Riverside and the Cities of Montclair and Riverside are summarized below.

County of Riverside General Plan Noise Element

The California Government Code Section 65302(g) requires that a noise element be included in the General Plan of each county and city in the State. The Noise Element of the County of Riverside General Plan is intended to provide a systematic approach to identifying and appraising noise problems in the community; quantifying existing and projected noise levels; addressing excessive noise exposure; and community planning for the regulation of noise.

The County's primary goal with regard to community noise is to ensure that noise-producing land uses would be compatible with adjacent land uses. To this end, the Noise Element establishes noise/land use compatibility guidelines based on cumulative noise criteria for outdoor noise. These guidelines are based, in part, on the community noise compatibility guidelines established by the DHS for use in assessing the compatibility of various land use types with a range of noise levels. The County's noise/land use compatibility guidelines are shown in **Table 4.12-6**. The County's stationary source land use noise standards are shown in **Table 4.12-7**.

TABLE 4.12-6
COUNTY OF RIVERSIDE LAND USE COMPATIBILITY FOR COMMUNITY NOISE EXPOSURE LEVEL (L_{DN} OR CNEL, dBA)

Land Use	Normally Acceptable[a]	Conditionally Acceptable[b]	Normally Unacceptable[c]	Clearly Unacceptable[d]
Single-family, Duplex, Mobile Homes	50–60	55–70	70–75	above 75
Multi-Family Homes	50–65	60–70	70–75	above 75
Schools, Libraries, Churches, Hospitals, Nursing Homes	50–70	60–70	70–80	above 80
Transient Lodging – Motels, Hotels	50–65	60–70	70–80	above 80
Auditoriums, Concert Halls, Amphitheaters	---	50–70	above 65	---
Sports Arena, Outdoor Spectator Sports	---	50–75	above 70	---
Playgrounds, Neighborhood Parks	50–70	---	68–75	above 74
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50–75	---	70–80	above 80
Office Buildings, Business, Commercial, and Professional	50–70	68–77	---	above 75
Industrial, Manufacturing, Utilities, Agriculture	50–75	70–80	---	above 75

[a] Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
[b] Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Outdoor environment will seem noisy.
[c] Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.
[d] Clearly Unacceptable: New construction or development should generally not be undertaken. Construction costs to make the indoor environment acceptable would be prohibitive and the outdoor environment would not be usable.

SOURCE: County of Riverside, 2003.

TABLE 4.12-7
COUNTY OF RIVERSIDE STATIONARY SOURCE LAND USE NOISE STANDARDS

Residential	Interior Standards	Exterior Standards
10:00 p.m. to 7:00 a.m	40 Leq	45 Leq
7:00 a.m. to 10:00 p.m.	55 Leq	65 Leq

NOTE: These are only preferred standards; final decision will be made by the Riverside County Planning Department and Office of Public Health.

SOURCE: County of Riverside, 2003

Chapter 9.52 of the Riverside County Code of Ordinances exempts capital improvement projects of a governmental agency and the maintenance or repair of public properties from the County's noise regulations.

The County of Riverside General Plan Noise Element contains various policies to address countywide noise issues. The following are relevant to the proposed Project:

Policy N 1.1 Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or blockwalls shall be used.

Policy N 1.5 Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.

Policy N 12.1 Minimize the impacts of construction noise on adjacent uses within acceptable practices.

Policy N 12.2 Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.

Policy N 12.4 Require that all construction equipment utilizes noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

City of Montclair General Plan

The City of Montclair General Plan Noise Element contains various policies to address citywide noise issues. The following are relevant to the proposed Project:

Policy 1.1.7 Review land use patterns in the community noise environment, and amend the Land Use map as appropriate to assure reasonable land use/noise compatibility.

Policy 1.1.9 All sources of temporary noise shall comply with the City of Montclair Noise Ordinance.

Policy 1.2.3 All sources of stationary noise shall comply with the City of Montclair Noise Ordinance.

Policy 1.2.4 A noise study shall be prepared at the discretion of the City of Montclair by an acoustical consultant for new development including but not limited to any of the following uses: (1) Printing Press; (2) Riveting Machine; (3) Milling Machine; (4) Rock Crusher; (5) Commercial Trash Compactors; (6) Truck Loading Docks; (7) Power Generators; (8) Air Wrenches; (9) Drive-Through Speakerphones; (10) Well Pumps; (11) Shooting Ranges; and Other uses which generate significant noise levels.

This study should quantify future noise levels and recommend specific mitigation measures.

Policy 1.2.5 All construction vehicles and equipment, fixed or mobile operated, shall be equipped with properly operating and maintained mufflers.

Policy 1.2.6 Stock piling and/or vehicle staging areas shall be located as far as practical from residential homes.

Policy 1.2.7 The noisiest operations shall be arranged to occur together in the construction program to avoid continuing periods of greater annoyance.

Policy 1.2.8 Construction which can impact noise sensitive receptors shall be limited to the hours of 7:00 AM to 8:00 PM on any given day and provided that the building official determines that the public health and safety will not be impaired.

Additionally, the City recognizes that construction noise is of a temporary nature and does not require noise mitigation for construction activities.

City of Montclair Municipal Code

The base ambient exterior noise levels for each respective zone and time period and the maximum allowable noise creation above the base ambient noise level (BANL) are shown in **Table 4.12-8** and **Table 4.12-9**, respectively.

TABLE 4.12-8
BASE AMBIENT EXTERIOR NOISE LEVELS

Zone	Time	Decibels (dBA)
Residential	10:00 p.m. – 7:00 a.m.	45
Residential	7:00 a.m. – 10:00 p.m.	55
Commercial	10:00 p.m. – 7:00 a.m.	55
Commercial	7:00 a.m. – 10:00 p.m.	65
Industrial	10:00 p.m. – 7:00 a.m.	60
Industrial	7:00 a.m. – 10:00 p.m.	70

SOURCE: City of Montclair Municipal Code, Section 6.12.040

TABLE 4.12-9
MAXIMUM NOISE LEVELS

Noise Level Exceeded	Allowable Maximum Duration Period
Base Ambient Noise Level (BANL)	30 minutes in any hour
5 – 9 dBA	Above BANL 15 minutes in any hour
10 – 14 dBA	Above BANL 5 minutes in any hour
15 – 16 dBA	Above BANL 1 minute in any hour
16 dBA or greater above BANL	Not permitted

SOURCE: City of Montclair Municipal Code, Section 6.12.050

Section 6.12.060 of the City of Montclair Municipal Code exempts noise sources associated with the construction, repair, remodeling, or grading of any real property provided that such activities do not take place between the hours of 8:00 PM and 7:00 AM on any given day.

City of Riverside General Plan

The City of Riverside General Plan Noise Element contains various policies to address citywide noise issues. The following is relevant to the proposed Project:

Policy N-1.2 Enforce the City of Riverside Noise Control Code to ensure that stationary noise and noise emanating from construction activities, private developments/residences and special events are minimized.

City of Riverside Municipal Code

Section 7.25.010 of the City of Riverside Municipal Code establishes the exterior noise standards as shown in **Table 4.12-10**.

TABLE 4.12-10
EXTERIOR NOISE STANDARDS

Land Use Category	Time Period	Noise Level (dBA)
Residential	Night (10:00 p.m. to 7:00 a.m.)	45
	Day (7:00 a.m. to 10:00 p.m.)	55
Office/Commercial	Any time	65
Industrial	Any time	70
Community Support	Any time	60
Public recreation facility	Any time	65
Nonurban	Any time	60

SOURCE: City of Riverside Municipal Code, Section 6.12.040

Section 7.35.010 of the City of Riverside Municipal Code prohibits the operation of any tools or equipment used in construction, drilling, repair, alteration, grading or demolition work between the hours of 7:00 p.m. and 7:00 a.m. on weekdays and between 5:00 p.m. and 8:00 a.m. on Saturdays or at any time on Sunday or federal holidays. Pursuant to Section 7.35.020, construction, repair, remodeling, or grading that takes place within permissible times (7:00 a.m. to 7:00 p.m. on weekdays and 8:00 a.m. to 5:00 p.m. on Saturdays) are exempt from the provisions of the City's noise control ordinance.

4.11.3 Impacts and Mitigation Measures

Significance Criteria

Consistent with the CEQA *Guidelines* Appendix G, the proposed Project would result in a significant impact on the environment if it would result in:

- Exposure of persons to or generation of noise levels in excess of standards in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (see Impact 4.12-1, below);

- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels (see Impact 4.12-2, below);
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (see Impact 4.12-3, below);
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels existing without the project (see Impact 4.12-4, below);
- For a project located with an airport land use plan, or where such a pan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels (see Impact 4.12-5, below); or
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels (see Impact 4.12-6, below).

Methodology

Construction Noise Levels

Project construction noise levels were estimated using the FHWA's Roadway Construction Noise Model (RCNM) and construction equipment information provided by IEUA, WMWD, and OCWD. Potential noise levels were identified for the nearest sensitive receptors located offsite based on their respective distances from each project area. To present a conservative impact analysis, the estimated noise levels were calculated for a scenario in which all construction equipment for each sub-phase was assumed to be operating simultaneously and located at the construction area nearest to the affected receptors. These assumptions represent the worst-case noise scenario because construction activities would typically be spread out throughout the Project area and would be located further away from the affected receptors. The estimated noise levels at the affected receptors were then analyzed against the daytime noise level where adverse community reaction could occur at residential land uses according to the FTA, 90 dBA L_{eq}.[4]

Onsite Stationary Source Noise Levels

Upon completion of the Project components, new pipeline would be located underground and new well and pump facilities would be enclosed in concrete block structures. Operational activity would be limited to periodic maintenance when needed. Therefore, operational noise is not anticipated to substantially increase due to implementation of the proposed Project.

Groundborne Vibration Levels

For the purposes of the assessment of potential vibration impacts, the methodology described in the Caltrans' *Transportation and Construction Vibration Guidance Manual* was used to evaluate project-related vibration effects to nearby sensitive land use. For adverse human reaction, the analysis applies the "strongly perceptible" threshold of 0.1 in/sec PPV for continuous sources. For risk of architectural damage to older buildings and structures, this analysis applies a threshold of 0.3 in/sec PPV for continuous sources.

[4] FTA, Transit Noise and Vibration Impact Assessment. May 2006.

Impacts Discussion

Exceedance of Established Noise Standards

Impact 4.12-1: The proposed Project could result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Construction

Noise from construction activities associated with each of the proposed projects would be generated by vehicles and equipment involved during various stages of construction: grading/drilling, excavation, building construction, and street restoration. The noise levels created by construction equipment would vary depending on factors such as, the type of equipment, the specific model, the operation being performed and the condition of the equipment. Construction noise associated with the proposed Project was analyzed using a mix of typical construction equipment, estimated durations and construction phasing. **Table 4.12-11,** *Construction Equipment and Estimated Noise Levels (L_{eq})* presents the list of construction equipment and approximate quantities per construction phase with reference noise levels.

TABLE 4.12-11
CONSTRUCTION EQUIPMENT AND ESTIMATED NOISE LEVELS (L_{EQ})

Construction Equipment	Noise Level at 50 ft (dBA)	Usage Factor (%)	Hourly Quantity
Arlington Production Wells and Pipeline			
Well Drilling			
Drill Rig Truck	79	29	1
Generator Sets	81	50	1
Forklift	75	10	1
Water Trucks	80	10	4
Well Building Construction			
Concrete Mixer Trucks	79	40	1
Rubber Tired Loader	79	50	1
Forklift	75	10	1
Excavation and Shoring			
Water Trucks	80	10	3
Excavator	81	40	2
Backhoe	80	40	1
Rubber Tired Loader	79	50	1
Cranes	81	40	1
Compactor (Ground)	83	20	1
Other Equipment	85	50	1

Construction Equipment	Noise Level at 50 ft (dBA)	Usage Factor (%)	Hourly Quantity
Pipe Installation			
Water Trucks	80	10	3
Other Equipment	85	50	1
Welders	74	40	1
Cranes	81	40	1
Generator Sets	81	50	1
Street Restoration			
Paver	77	50	1
Roller	80	20	1
Cannon Pump Station			
Decommissioning			
Water Trucks	80	10	1
Excavator	81	40	1
Backhoe	80	40	1
Rubber Tired Loader	79	50	1
Other Equipment	85	50	1
Street Restoration			
Paver	77	50	1
Roller	80	20	1
New Western Pump Station			
Water Trucks	80	10	3
Excavator	81	40	1
Backhoe	80	40	1
Welders	74	40	1
Cranes	81	40	1
Excavation and Shoring			
Water Trucks	80	10	3
Excavator	81	40	2
Backhoe	80	40	1
Rubber Tired Loader	79	50	1
Cranes	81	40	1
Compactor (Ground)	83	20	1
Other Equipment	85	50	1
Pipe Installation			
Water Trucks	80	10	3
Other Equipment	85	50	1
Welders	74	40	1
Cranes	81	40	1
Generator Sets	81	50	1

Construction Equipment	Noise Level at 50 ft (dBA)	Usage Factor (%)	Hourly Quantity
Street Restoration			
Paver	77	50	1
Roller	80	20	1
ID-4 CRA Crossing Refurbishment			
Refurbishment			
Backhoe	80	40	1
Rubber Tired Loader	79	50	1
Cranes	81	40	1
Welders	74	40	1
Chino Basin Production Wells, Refurbishment And Treatment System			
Well Drilling			
Drill Rig Truck	79	29	1
Generator Sets	81	50	1
Forklift	75	10	1
Water Trucks	80	10	4
Well Building Construction			
Concrete Mixer Trucks	79	40	1
Rubber Tired Loader	79	50	1
Forklift	75	10	1
Santa Ana River Arundo Removal			
Mowing/Clearing/Grubbing			
Other Equipment	85	50	6
Dozer	82	40	2
Excavator	81	40	2
Dump/Haul Trucks	76	20	7
Rubber Tired Loader	79	50	1
Water Trucks	80	10	1
Pickup Truck	75	40	2
Maintenance			
Pickup Truck	75	40	2

NOTE: Noise Levels at 50 ft and Usage Factor are derived from Federal Highways Administration's Roadway Construction Noise Model User's Guide.

SOURCE: FHWA Roadway Construction Noise Model User's Guide, 2006; ESA, 2018

These noise levels account for the construction equipment that would be properly operating and maintained, consistent with manufacturers' standards. For purposes of this analysis, all construction equipment during each sub-phase was assumed to operate simultaneously at the construction area nearest to potentially affected sensitive receptors (at the building facade) as a conservative scenario. However, equipment used on construction sites, especially those with limited space, usually operate intermittently over the course of a construction day. It is assumed

that sub-phases at each site would overlap to provide a conservative analysis. **Table 4.12-12**, Estimated Construction Noise Levels, summarizes the distance of sensitive receptors measured from the approximate project area to the nearest residential building façade and average hourly noise levels at nearby sensitive receptors.

TABLE 4.12-12
ESTIMATED CONSTRUCTION NOISE LEVELS (L_{EQ})

Project Site	Construction Phase	Distance to Nearest Receptor (Feet)	Hourly Noise Level at Nearest Receptor
Arlington Production Wells and Pipeline	Well Drilling	30	85
	Well Building Construction		83
	Excavation and Shoring		92
	Pipe Installation		89
	Street Restoration		81
	Combined Noise Level		***94***
Cannon Pump Station	Decommissioning	30	89
	Street Restoration		81
	New Western Pump Station		87
	Excavation and Shoring		91
	Pipe Installation		89
	Street Restoration		81
	Combined Noise Level		***96***
ID-4 CRA Crossing Refurbishment	Refurbishment	1,700	51
	Combined Noise Level		*51*
Chino Basin Production Wells, Refurbishment And Treatment System	Well Drilling	30	85
	Well Building Construction		83
	Combined Noise Level		*87*
Santa Ana River Arundo Removal	Mowing/Clearing/Grubbing	50	91
	Maintenance		74
	Maximum Noise Level		***91***

ESA, 2018

The FTA developed reasonable criteria for assessing construction noise impacts related to adverse community reaction. According to the FTA, daytime hourly noise levels exceeding 90 dBA Leq would result in adverse community reactions at residential land uses. For purposes of this analysis, although the County of Riverside, City of Montclair, and City of Riverside exempt construction noise that occurs within allowable hours, the 90 dBA Leq threshold has also been applied to nearby receptors. As shown in Table 4.12-12, hourly noise levels would exceed 90

dBA Leq at the nearest sensitive receptor during the combined construction activities for the Arlington Production Wells and Pipeline, Cannon Pump Station project, and Santa Ana River Arundo Removal. However, these noise levels would be temporary, would only occur during the day time, and would be compliant with local noise ordinances. To ensure that noise impacts would not result in nuisance to local receptors, **Mitigation Measure NOISE-1** would require that contractors minimize noise levels. **Mitigation Measure NOISE-2** would require that contractors establish a construction relations officer to ensure that any nuisance noises are minimized. With incorporation of Mitigation Measure NOISE-1 temporary construction noise levels would reach a maximum of 86 dBA Leq, 88 dBA Leq, and 83 dBA Leq for the Arlington Production Wells and Pipeline, Cannon Pump Station project, and Santa Ana River Arundo Removal, respectively, at the nearest sensitive receptors. These noise levels would not exceed the 90 dBA Leq thresholds. Therefore, impacts would be reduced to less-than-significant levels with incorporation of mitigation. Therefore, with implementation of mitigation, construction impacts would be less than significant.

Operation

Once construction of a proposed facilities has been completed, the surrounding off-site land uses would be exposed to operational noise levels generated by the new aboveground wells, treatment systems, and pump stations. However, all equipment would be enclosed within concrete block buildings and would be designed to meet acoustic performance criteria that would comply with the local ambient noise standards at the facility fence-line. Further, proposed facilities would be located near the roadway system, where noise from vehicular traffic constitutes the dominant noise source. Therefore, operational noise level increases associated with the Project would be less than significant.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

NOISE-1: Contractors shall ensure that all construction equipment, fixed or mobile, are equipped with properly operating and maintained noise mufflers, consistent with manufacturers' standards. For example, absorptive mufflers are generally considered commercially available, state-of-the-art noise reduction for heavy duty equipment.[5] Most of the noise from construction equipment originates from the intake and exhaust portions of the engine cycle. According to Federal Highway Administration, use of adequate mufflers systems can achieve reductions in noise levels of up to 10 dBA.[6].

NOISE-2: The responsible agency shall designate a construction relations officer to serve as a liaison with surrounding residents and property owners; the construction relations officer shall be responsible for responding to any concerns regarding construction noise and vibration. The liaison's telephone number(s) shall be

5 United Muffler Corp: https://www.unitedmuffler.com/; Auto-jet Muffler Corp: http://mandrelbending-tubefabrication.com/OEM/catalogpages/construction_off_road.php. Accessed January 2018.

6 Federal Highway Administration. Special Report – Measurement, Prediction, and Mitigation: Chapter 4 Mitigation. https://www.fhwa.dot.gov/Environment/noise/construction_noise/special_report/hcn04.cfm. Accessed January 2018

prominently displayed at the project site. Signs that include permitted construction days and hours shall also be posted at the project site.

Significance Determination after Mitigation: Less than Significant

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Exposure to Vibration Levels

Impact 4.12-2: The proposed Project would expose persons and structures to less than significant ground-borne vibration or ground-borne noise levels.

Construction of the proposed projects would include activities such as grading, excavation, and drilling, which would have the potential to generate low levels of groundborne vibration. Persons residing and working in an area located in proximity to a construction site could be exposed to groundborne vibration or groundborne noise levels related to construction activities. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Site ground vibrations from construction activities very rarely reach the levels that can damage structures, but they can be perceived in the audible range and be felt in buildings very close to a construction site.

The various PPV and RMS velocity (in VdB) levels for the types of construction equipment that could operate during the construction of the components of the proposed Project are identified in **Table 4.12-13**. Based on the information presented in Table 4.12-13, vibration velocities could reach as high as approximately 0.089 in/sec PPV at 25 feet from the source activity when a bulldozer or drilling equipment is used. This corresponds to a RMS velocity level (in VdB) of 87 VdB at 25 feet from the source activity. A distance of 25 feet was used for a worst case evaluation of vibration levels even though the nearest receptor to any of the proposed facilities is 30 feet.

TABLE 4.12-13
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Construction Equipment	PPV at 25 feet (inches/second)	RMS at 25 feet (VDB)
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

SOURCE: FTA, 2006.

As vibration levels at the nearest receptors (located as near as 30 feet from construction activity) would not exceed the 0.3 in/sec PPV significance threshold (potential building damage for older buildings and structures)[7], construction vibration impacts related to structural damage would be less than significant.

With respect to human perception, the nearest off-site residential uses (at 30 feet) would be exposed to vibration velocities up to 0.068 in/sec PPV. This would not exceed the 0.1 in/sec PPV threshold (resulting in strongly perceptible vibration) and vibration impacts would be less than significant.

The Project consists of the drilling of extraction wells and installation of pipelines. Increases in operational vibration are not anticipated and, therefore, no impact would occur.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Permanent Increase in Ambient Noise Levels

Impact 4.12-3: The proposed Project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

As discussed under Impact 4.12-1, the surrounding off-site land uses would be exposed to operational noise levels generated by the new aboveground pump stations. However, all equipment would be enclosed within concrete block buildings and would be designed to meet acoustic performance criteria that would comply with the local ambient noise standards at the facility fence-line. Further, proposed pump stations would be located near the roadway system, where noise from vehicular traffic constitutes the dominant noise source. Therefore, noise level increases would not be substantial and would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

[7] California Department of Transportation's, Transportation and Construction Vibration Guidance Manual. September, 2013.

Significance Determination after Mitigation: Less than Significant

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Temporary Increase in Ambient Noise Levels

Impact 4.12-4: The proposed Project would not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels without the project.

As discussed above, a project would normally have a significant impact on noise levels from construction if project construction activities would expose residents to greater than 90 dBA Leq. Based on the estimated construction noise levels at the studied sensitive receptors, it was determined that construction noise levels could increase ambient noise levels that exceed 90 dBA Leq. Therefore, there could be a potentially significant impact resulting from temporary increases in ambient noise levels.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

Implementation of Mitigation Measures NOISE-1 and NOISE-2 is required.

Significance Determination after Mitigation: Less than Significant

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Public Airport and Private Airstrip Noise

Impact 4.12-5: The proposed Project would not expose people residing or working within two miles of a public airport, public use airport, or private airstrip to excessive noise levels.

The Riverside Municipal Airport is located approximately 1.5 miles from the Arlington Recharge site and approximately 1 mile from Arundo Removal activities; Cable Airport, located in the City of Upland, is approximately two miles from the Chino Basin Production Wells, Refurbishment and Treatment System site; and the Flabob Airport, located in the City of Riverside, and the Corona Municipal Airport are located approximately 0.6 miles and one mile from Arundo Removal activities, respectively. No private airstrips are located within two miles of any of the proposed Project components.

The proposed facilities would not employ any on-site full-time workers and would, therefore, not expose anyone working within two miles of an airport or airstrip to substantial, long-term airport-related noise. Furthermore, maintenance and inspection of the proposed non-habitable facilities would be minimal during Project operations. Therefore, the proposed Project would not expose persons to excessive airport-related noise levels. Exposure to airport noise would be a less than significant impact.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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4.12.4 References

California Department of Transportation, 2009. Technical Noise Supplement. November 2009.

California Department of Transportation, 2013. Transportation and Construction Vibration Guidance Manual. September 2013.

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State of California, Governor's Office of Planning and Research, 1998. General Plan Guidelines

U.S. Environmental Protection Agency, 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, 1971.

U.S. Environmental Protection Agency, 1974. EPA Identifies Noise Levels Affecting Health and Welfare, April 12, 1974.

4.13 Population and Housing

This section examines the existing population and housing conditions for the proposed Project areas, as well as applicable regulatory framework, potential impacts associated with implementation of the proposed Project and mitigation measures to reduce those impacts to less than significant, as necessary.

4.13.1 Environmental Setting

Regional Setting

The Southern California Association of Governments (SCAG) forecasts three major growth indicators including population, households, and employment. These forecasts are provided in the regional transportation plans that are periodically updated by SCAG. Major growth indicators within the proposed Project area are described in further detail below.

San Bernardino County

The Chino Basin is primarily within San Bernardino County and part of the Inland Empire, an urban region distinct from the coastal urban centers and the more rural desert regions of Southern California. The Inland Empire is one of the fastest growing regions in the United States (San Bernardino 2007). The 242-square-mile IEUA service area is a core portion of the Inland Empire and includes unincorporated areas of San Bernardino County, as well as the cities of Upland, Montclair, Ontario, Fontana, Chino, Chino Hills; and Rancho Cucamonga (see Figure 2-1).

Riverside County

Riverside County is California's fourth largest county by population, inhabited by more than two million people. (Riverside County 2018) The WMWD supplies water to western Riverside County over a service area of 527 square miles. This region also includes the cities of Corona, Norco, and Riverside as well as the water agencies that supply Box Springs, Eagle Valley, Lake Elsinore, Lee Lake and Temecula. Additionally, WMWD serves business and residential customer is Murrieta, Rainbow, Orangecrest, Mission Grove, El Sobrante, Woodcrest, Lake Matthews, Mead Valley, Perris and March Air Reserve Base (WMWD 2018) Ext.

Population

San Bernardino County

According to the SCAG *Profile of San Bernardino County 2017,* the total population of San Bernardino has increased by 429,431 people from 2000 to 2016. During that 16-year period, the growth rate was 25.1 percent, which was higher than the SCAG Region rate of 14.8 percent. San Bernardino County contributed a total of 11.3 percent of the SCAG Region population (see **Table 4.13-1**).

TABLE 4.13-1
CURRENT AND PROJECTED POPULATION IN THE PROPOSED PROJECT AREA

	Population (2015)	Population (2020)*	Population (2025)*	Population (2030)*	Population (2035)*	Population (2040)*
County						
Orange	3,162,622	3,260,012	3,350,668	3,433,510	3,503,764	3,558,071
Riverside	2,331,960	2,500,975	2,686,242	2,857,496	3,015,808	3,159,599
San Bernardino	2,128,499	2,230,602	2,352,322	2,478,888	2,606,040	2,730,966
Water District						
IEUA[b]	1,306,209	1,367,792	1,457,860	1,539,909	1,629,307	1,716,661
OCWD	2,376,929	2,442,790	2,487,780	2,535,627	2,539,154	NA
WMWD[c]	94,107	99,584	114,584	123,519	132,341	140,371

* Estimated population

[a] Retail and wholesale current and projected population for EMWD

[b] Includes population in service area for Water Facilities Authority (WFA)

[c] Retail current and projected population for WMWD

NA = Not Available

SOURCE: EMWD, 2016; IEUA, 2016; OCWD, 2016; SBVMWD et al, 2016; WMWD, 2016; U.S. Census Bureau, 2016a-c; SCAG, 2012; DOF (2018)

SCAG and Department of Finance (DOF) population estimates are enumerated in **Table 4.13-2** for the cities within the IEUA service area and the entire County of San Bernardino beginning with the base year 2015 and SCAG forecasting 2020 and 2035. The 2015 population for San Bernardino County is 2,128,499 (DOF 2018). SCAG updated the County of San Bernardino's population estimate in the 2016-2040 Regional Transportation Plan/Sustainable Communities Plan (RTP/SCS). These estimates were for the years 2012 and 2040. Based on the 2015 and 2040 population data, the persons within the county are forecast to increase by 29.8% percent over the next 25 years and is expected to have an estimated population of 2,730,966 people in the year 2040 (SCAG 2016; DOF 2018).

Riverside County

According to the SCAG *Profile of Riverside County 2017,* the total population of Riverside County has increased by 802,441 people from 2000 to 2016. During that 16-year period, the growth rate was 51.9 percent, which was higher than the SCAG Region rate of 14.8 percent. Riverside County contributed a total of 12.4 percent of the SCAG Region population.

TABLE 4.13-2
POPULATION PROJECTIONS FOR THE IEUA SERVICE AREA

City	2008[a]	2012[b]	2015[c]	2020[a]	2035[a]	2040[b]	Population % Increase from 2015-2040 forecast
Chino	75,600	79,400	84,465	88,800	107,200	120,400	42.5%
Chino Hills	74,600	75,800	77,596	76,600	78,400	94,900	22.3%
Fontana	193,900	200,200	204,312	222,700	259,100	280,900	37.5%
Montclair	36,000	37,200	38,548	39,700	43,900	42,700	10.8%
Ontario	162,900	166,300	168,777	203,800	307,600	258,600	53.2%
Rancho Cucamonga	162,800	170,100	174,064	167,100	167,100	204,300	17.4%
Upland	72,600	74,700	75,787	76,700	80,200	81,700	7.8%
Total San Bernardino County	**2,016,000**	**2,068,000**	**2,104,291**	**2,268,000**	**2,750,000**	**2,731,300**	**29.8%**

[a] SOURCE: SCAG 2012

[a] SOURCE: SCAG 2016

[a] SOURCE: DOF, 2015

SCAG and DOF population estimates are enumerated in **Table 4.13-3** for the cities within the WMWD service area and the entire County of Riverside beginning with the base year 2015 and SCAG forecasting 2020 and 2035. The 2015 population for Riverside County is 2,331,960 (DOF, 2018). SCAG updated the County of Riverside's population estimate in the 2016-2040 RTP/SCS. These estimates were for the years 2012 and 2040. Based on the 2015 and 2040 population data, the persons within the county are forecast to increase by 32.6% percent over the next 25 years and is expected to have an estimated population of 3,159,599 people in the year 2040 (SCAG 2016; DOF 2018).

Housing

San Bernardino County

Along with the projected population increases, there will be a corresponding increase in the estimated number of dwelling units within the IEUA service area. According to the County of San Bernardino General Plan, the spatial distribution of residential construction continues to be skewed toward the Valley Region of the county (County of San Bernardino 2014).

City of Montclair

According to the City of Montclair's General Plan, in 2010, the U.S. Census Bureau reported 9,523 households in the City of Montclair, an 8.2 percent increase from the number of households in 2000. In comparison, total households in San Bernardino County increased 15.7 percent between 2000 and 2010; and total households in California increased by 9.3 percent. Thus number of households in the City of Montclair is growing at a slower rate than the county and state. As of 2013 the Department of Finance estimates that there are 9,564 households within the City of Montclair (City of Montclair 2014).

TABLE 4.13-3
POPULATION PROJECTIONS FOR THE WMWD SERVICE AREA

City	2008[a]	2012[b]	2015[c]	2020[a]	2035[a]	2040[b]	Population % Increase from 2015-2040 forecast
Box Springs Mutual Water Company	3,300	3,300	3,300	3,300	3,300	3,300	0%
City of Corona	167,764	173,100	175,900	179,199	182,600	185,800	9.7%
City of Norco	25,890	27,300	28,900	30,800	31,500	32,700	20.8%
City of Riverside	294,526	310,572	22,352	334,580	347,271	360,444	18.3%
Elsinore Valley Municipal Water District	152,800	172,600	191,100	208,300	224,300	239,300	36.1%
Home Gardens Community Water District	3,044	3,044	3,044	3,044	3,044	3,044	0%
Jurupa Community Services District	120,456	128,446	136,436	144,426	152,416	160,406	24.9%
Rancho California Water District	24,949	26,087	27,243	28,450	29,710	31,026	19.6%
Riverside Highlands Water Company	14,000	18,882	19,984	21,149	22,383	23,689	40.9%
Rubidoux Community Services Districts	31,530	32,160	33,500	34,830	36,180	36,720	14.1%
Santa Ana River Water Company	8,080	8,080	8,080	8,080	8,080	8,080	0%
Temescal Valley Water District	15,085	16,100	17,005	20,000	20,000	20,000	24.6%
Western Retail	94,107	99,584	114,584	123,519	132,341	140,371	33.0%
Total Riverside County *	**2,128,000**	**2,252,777**	**2,331,960**	**2,592,000**	**2,750,000**	**3,159,599**	**32.6%**

NOTES: * 2008, 2020, 2035 population estimates for Riverside County were from SCAG 2017, 2012, 2015, 2040 were from DOF 2018

SOURCE: WMWD, 2016

SCAG 2017

DOF 2018

Riverside County

Along with the projected population increases, there will be a corresponding increase in the estimated number of dwelling units within the WMWD service area. According to the County of Riverside General Plan, the spatial distribution of residential construction continues to be skewed toward the Western portion of the county (County of Riverside 2015).

City of Riverside

According the City of Riverside's Housing Element, as of 2010, the City of Riverside has approximately 91,932 households, a 12 percent increase since 2000. Family households (married couples and/or related members) account for 72 percent of all households (City of Riverside 2017).

Employment

San Bernardino County

In 2016, the California Employment Development Department (EDD) reported that the average annual unemployment rate in the San Bernardino County for 2015 was 59,800, or 6.5 percent (as compared to the statewide unemployment rate of 6.2 percent for 2015) (EDD 2016a and 2016b). The total employment within the cities located in the IEUA service area as well as the entire county reduced for some of the cities and the county between 2008 and 2012 due to the recession. Employment is projected to increase by 55.9 percent over the next 25 years within the county and is estimated to have total employment of 810,000 in the year 2040. As projected by the County of San Bernardino, the majority of the unincorporated county employment growth is expected to occur in the West Valley Region (County of San Bernardino 2014).

City of Montclair

According to the City of Montclair General Plan's Housing Element, the largest employment sector in the City of Montclair in 2000 was the manufacturing industry, accounting for 18.8 percent of the labor force. The other top employment sectors included educational, health and social services industry at 15.3 percent, retail trade at 12.6 percent, and professional, scientific, management, administrative, and waste management industry at 10.3 percent of the labor force. The 2007-2011 ACS reports that education, health and social services is currently the largest employment sector, employing 15.3 percent of Montclair's workforce. Retail trade employs the second highest percentage of the workforce and manufacturing employs the third highest percentage. The labor force in the City of Montclair increased from 13,900 in 2000 to an estimated 16,500 in 2008, and then declined to 16,200 as of 2012. The unemployment rate increased from 4.6 in 2000 to 13.6 in 2010 and has decreased since. According to the California Employment Development Department, the unemployment rate in the city for 2012 was 11.5 percent, lower than the county's unemployment rate of 12.0 percent.

Riverside County

According to the 2010- 2014 ACS, the estimated number of employed residents in all of Riverside County for all industries was 895,237. Of this, 1.7 percent or 15,006 were farm jobs,

while 98.3 percent or 880,231 were non-farm jobs. The largest job sectors in the county were educational services (20 percent), retail trade (13 percent), Information (12 percent) and arts and entertainment (11 percent).

According to the Riverside County General Plan's Housing Element for the 2017-2021 period, over the 10-year period from 2010 and 2020, employment is expected to reach 1.46 million, or gain 206,700 jobs, for an annual growth rate of 2 percent. By comparison, during the same period, California's annual growth rate is estimated to be the same at 2 percent. Riverside and San Bernardino Counties account for approximately 8.5 percent of California's total nonfarm employment. The three industry sectors responsible for almost 62 percent of the new jobs are transportation, trade, and utilities; professional and business services; and leisure and hospitality. Between 2000 and 2010, the unemployment rate for Riverside County averaged 6 percent. Since 2006, the height of the "housing bubble" and accompanying economic downturn, the unemployment rate steadily increased to a high of 13 percent in May 2009, and has declined with economic recovery to 4.9 percent as of April 2017. Riverside County's unemployment rate is just slightly higher than the statewide rate of 4.5 percent (California Labor Market Info). The unincorporated county's job to household ratio has significantly increased since 2010. Overall, the unincorporated county has gone from 0.61 jobs per household to 1.18 jobs per household. In 2014, the countywide average was 1.28 jobs per household.

City of Riverside

According to the Southern California Association of Governments (SCAG), the City of Riverside had approximately 141,081 jobs in 2012. In 2012, the Education sector was the largest job sector accounting for 28.1 percent of total jobs in the city. Professional jobs are the next largest sector at 12.9 percent, followed by the Retail sector at 11.7 percent and Public at 8.4 percent. Riverside's job base is anticipated to grow to 198,000 jobs by 2020.

The Riverside-San Bernardino region has experienced significant economic changes. Base realignment, slowdown in the manufacturing and construction sectors, and unemployment characterized the Inland economy during the early 1990s. By the late 1990s, this trend reversed, as the economy rebounded with significant growth in most sectors, particularly housing. In the late 2000's, the economy receded, fueled by the financial credit crisis and downturn in the housing market. The economy has recently seen a slow upswing. Riverside's economy is dominated by the Education sector, which provides 28 percent of all jobs. The Professional sector make up the next highest sector at 13 percent, followed by Retail at 12 percent. The Public sector provides 8 percent of all jobs while, Manufacturing and Leisure sectors each comprise of 7 percent of all jobs (City of Riverside General Plan Housing Element 2017).

4.13.2 Regulatory Framework

State

Southern California Association of Governments

SCAG is a Joint Powers Agency established under California Government Code Section 6502 et seq. SCAG is designated as a Council of Governments, a Regional Transportation Planning Agency, and a Metropolitan Planning Organization for a six-county region that includes the Project area. SCAG prepares a regional growth forecast for the region, which is used as a key guide for developing regional plans and strategies. The growth forecasts include recent trends in the region's growth of population, households and employment. The forecasts are periodically updated to account for modified trends (SCAG 2016).

Regional

County of San Bernardino

The Housing Element of the County of San Bernardino General Plan addresses the existing and projected housing needs of a city or county, including their share of the regional housing need. State law requires each local government agency to update their Housing Element every 5 years, and submit it to the State Department of Housing and Community Development for review. San Bernardino County's Housing Element was updated most recently in early 2014 for the 2013-2021 planning period. This policy guide analyzes the housing needs of the unincorporated areas of the county, and its primary focus is to ensure decent, safe, sanitary, and affordable housing for current and future residents in those areas.

County of Riverside

The Housing Element of the Riverside County General Plan identifies and establishes the County's policies with respect to meeting the needs of existing and future residents in Riverside County. It establishes policies that will guide County decision-making and sets forth an action plan to implement its housing goals over the next eight years.

The Housing Element of the General Plan is only one facet of a county's planning program. The California Government Code requires that General Plans contain an integrated, consistent set of goals and policies. The Housing Element is, therefore, affected by development policies contained in the Land Use Element, which establishes the location, type, intensity, and distribution of land uses throughout the county. The Circulation Element establishes policies for providing essential streets and roadways to all housing that is developed (County of Riverside 2017).

Local

City of Montclair

The Housing Element of the City of Montclair General Plan addresses the existing and projected housing needs of the city. State law requires each local government agency to update their Housing Element every 5 years, and submit it to the State Department of Housing and Community Development for review. The City of Montclair's Housing Element was updated most recently in February, 2014 for the 2013-2021 planning period, consistent with the State-mandated update required for all SCAG jurisdictions. This policy guide analyzes the housing needs of the city's incorporated area, and its primary focus is to ensure decent, safe, sanitary, and affordable housing for current and future residents in those areas via official policies for the construction, rehabilitation, preservation and conservation of housing in the City of Montclair.

City of Riverside

The Housing Element of the City of Riverside General Plan 2025 addresses the existing and projected housing needs of the city. State law requires each local government agency to update their Housing Element every 5 years, and submit it to the State Department of Housing and Community Development for review. The City of Riverside's Housing Element was updated most recently in October, 2017 for the 2014-2021 planning period, consistent with the State-mandated update required for all SCAG jurisdictions. This policy guide analyzes the housing needs of the city's incorporated area, and its primary focus is to provide objectives, policies, and programs to facilitate the development, improvement, and preservation of housing. It is intended to create livable neighborhoods that offer a high quality of life, facilitate a diversity of housing choices for different lifestyles, increase housing opportunities for very low, low and moderate income households, and support the provision of adequate housing and supportive services for those with special needs.

4.13.3 Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR and consistency with Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact on population and housing if it would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure) (see Impact 4.13-1, below);

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere (see Impact 4.13-2, below); and
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere (see Impact 4.13-2, below).

Impacts Discussion

Population Growth

Impact 4.13-1: The proposed Project would not induce substantial population growth within the Project area.

Implementation of the proposed Project would not include construction of new homes or businesses that would result in a direct increase in population or create a substantial numbers of jobs. Construction of the well facilities, pipelines, pump stations, ancillary facilities, and *Arundo donax* and other non-native species removal would require temporary employment. The temporary employment opportunities are expected to be filled by workers within the local economy. Because the majority of the work force is located in the Valley Region and western portions of the counties, there would be an adequate number of workers within the Project area that could be available for construction jobs and could commute to the temporary construction jobs rather than relocate and induce growth in the area.

SARCCUP is designed to optimize regional water supplies to meet forecasted demands during dry years within the SARCCUP area. Implementation of the proposed Project are consistent with development anticipated by SCAG, the local general plans and expected population growth. Local cities have prepared CEQA documentation evaluating potential impacts of growth that could result from implementation of their General Plans. By providing public services to meet varying expectations, the partner agencies lessen impacts to public services that could result from implementation of land use policies. However, the partner agencies have no control over land use designations or growth within their service areas. Upgrading of public services to meet modern standards of efficiency, water supply reliability, and public health would occur irrespective of growth rates in the service areas. Therefore, the implementation of the proposed facilities would result in less than significant impacts related to indirect inducement of population growth.

Operation of the proposed Project would not require any new, permanent employees. Employment opportunities associated with operation/maintenance activities are assumed to be filled by the local workforce, and would not result in increased housing units or demand. Therefore, implementation of the proposed projects would not require that employees move to the local area. The implementation of the proposed facilities would result in less than significant impacts related to inducement of population growth.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Displacement of Housing and People

Impact 4.13-2: The proposed Project would not displace housing or people, and would not necessitate the construction of replacement housing elsewhere.

The proposed Project would not include the demolition of any dwelling units. Therefore, the proposed projects would have no impact with regard to the displacement of existing housing units or people within those units, nor would it necessitate the construction of replacement housing elsewhere. There would be no impact.

Significance Determination before Mitigation: No Impact

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: No Impact

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4.14 Public Services

This section addresses impacts associated with implementation of the proposed Project to public services within the Project area. Public services include fire and police protection, public schools, and public parks and other recreational opportunities.

4.14.1 Environmental Setting

Fire/Emergency Protection Services

State

The California Department of Forestry and Fire Protection (CAL FIRE) is responsible for fire protection within State Responsibility Areas (SRAs), including 31 million acres throughout California. In most cases, SRAs are protected directly by CAL FIRE. However, in some counties, such as San Bernardino County and Riverside County, fire protection within the SRA is provided by the county under contract with CAL FIRE. Depending on the scale and circumstances of the fire, CAL FIRE responds with firefighting resources to assist the county (CAL FIRE 2016).

Regional

San Bernardino County

The San Bernardino County Fire Department (SBCFD) provides fire and emergency response services to more than 60 communities/cities and all unincorporated areas of the County of San Bernardino. SBCFD's Office of Emergency Services serves as the Operational Area Lead Agency, coordinating the provision of emergency services with the 24 cities and towns in the county (SBCFD 2016a). The proposed Chino Basin Production Wells, Refurbishment and Treatment System and access areas to the Santa Ana River Arundo Removal are located within the SBCFD's Valley Division (Division 1) jurisdiction. The Valley Division serves 585 square miles and 210,800 residents, consists of two battalions with 250 fire suppression personnel, and 15 fire stations total (SBCFD 2016b).

Riverside County

The Riverside County Fire Department (RCFD) provides fire protection services to residents of unincorporated areas of Riverside County and 22 partner cities, including Riverside (RCFD 2018a). RCFD provides full service, municipal and wildland fire protection, pre-hospital emergency medical response by paramedics and EMT's, technical rescue services and response to hazardous materials discharges (RCFD 2018b).

Local

City of Montclair

The Chino Basin Production Wells, Refurbishment and Treatment System is located in the City of Montclair. In addition to receiving mutual aid from the SBCFD, the City of Montclair is served by Montclair Fire Department. The Montclair Fire Department serves a 5.5 square mile area with

40,000 residents (City of Montclair 2018a). The Montclair Fire Department operates out of two stations. The station closest to the project area is Station 151, approximately one-mile northeast of the site. (City of Montclair 2018b).

City of Riverside

The Arlington Production Wells and Pipeline and Cannon Pump Station projects would be located within the City of Riverside. The City of Riverside Fire Department serves an 81.5 square mile area with 317,000 residents, and operates out of 14 fire stations (City of Riverside 2017). The stations closest to the project sites would be Station 2, located approximately 1.1 miles northeast of the Arlington Production Wells and Pipeline project area at 9449 Andrew Street, and Riverside City Fire Station 9 – Mission Grove located approximately 0.8 mile northwest of the Cannon Pump Station project site at 6674 Alessandro.

The ID-4 CRA Crossing Refurbishment project site is located within unincorporated land within Riverside County and therefore, would be serviced by the Riverside County Fire Department. The closest station to this project site is Riverside County Fire Department Station 4, located approximately 0.2-mile north of the project site at 16453 El Sobrante Road.

Santa Ana River

The Santa Ana River is located near multiple fire stations. Primary fire stations are located in Riverside County and the City of Eastvale. Fire and emergency response would be served by CAL FIRE, the SBCFD, or the RCFD, depending on the location of the emergency. As illustrated in Figure 3-6, there are multiple ingress and egress locations that would be used to access the Santa Ava River for *Arundo donax* and other non-native species removal.

Police Protection

State

The California Highway Patrol (CHP) is a law enforcement agency created in 1929 to provide uniform traffic law enforcement for the state of California. The CHP has jurisdiction over all Interstates and State Routes. The proposed Project areas would be served by the Inland Division, which has multiple facilities, and is the fourth largest CHP communications center in the state (CHP 2018).

Regional

San Bernardino County

The San Bernardino County Sheriff's Department (SBCSD), in collaboration with various cities and other agencies that have jurisdiction in San Bernardino County, provides law enforcement services to the incorporated and unincorporated communities in San Bernardino County. Many cities have contracted police protection services to the SBCSD. The personnel of the SBCSD provide law enforcement services to San Bernardino County's citizens through 15 patrol stations and 15 specific divisions (SBCSD 2018).

Riverside County

The Riverside County Sheriff's Department (RCSD) serves 17 cities, one tribal community, and various unincorporated areas in the county. RCSD provides much of the law enforcement through ten sheriff's stations spread across Riverside County. The RCSD is the second largest Sheriff's Office in California, managing five correctional facilities. (RCSD 2016).

Local

City of Montclair

The Montclair Police Department, serves approximately 40,000 residents within 5.5 square miles (City of Montclair 2018c). The Montclair Police Station is located approximately one-mile northeast of the Chino Basin Production Wells, Refurbishment and Treatment System.

City of Riverside

The City of Riverside Police Department operates from two stations to provide service to approximately 325,000 residents within 81.5 square miles in Riverside County. The nearest RPD station is within 5 miles of Arlington Production Wells and Pipeline and Cannon Pump Station project areas.

The ID-4 CRA Crossing Refurbishment project area is located within unincorporated land within Riverside County and therefore, would be serviced by the (RCSD). The closest sheriff station is approximately 12 miles southeast of the site.

Santa Ana River

The Santa Ana River is located near multiple police stations located primarily south of the River in Riverside County and the cities of Eastvale and Colton. Police response would be served by SBCSD, the RCSD, or local city departments, depending on the location of the incident.

Public Schools

Regional

County of San Bernardino

With a countywide K-12 student population of approximately 406,528, and more than 480 schools, the San Bernardino County Superintendent of Schools is a regional agency that provides vital and necessary service, leadership and advocacy to the eight K-12 districts in the county (Education Data Partnership 2018a).

According to the California Office of Statewide Health Planning and Development Department, the County of San Bernardino has 26 hospitals.

County of Riverside

The Riverside County Superintendent of Schools oversees Riverside County's 428,489 students attending more than 450 schools (K–12). The county consists of 23 school districts (Education Data Partnership 2018b; Riverside County Office of Education 2018).

According to the California Office of Statewide Health Planning and Development Department, the County of San Riverside has 24 hospitals (OSHPD 2010b).

Local

City of Montclair

The Montclair Christian Academy and Serrano Middle Schools are located approximately 0.2 mile south and 0.4-mile northeast of the Chino Basin Production Wells, Refurbishment and Treatment System, respectively.

City of Riverside

Howarden Hills Academy and Taft Elementary Schools are located approximately 0.5 mile northwest and 0.5-mile northeast of the Cannon Pump Station project respectively. There are eight schools located within 0.25 mile of the proposed Arlington Production Wells and Pipeline project Alternative 1 Pipeline: La Sierra High School, Liberty Elementary School, St. Thomas the Apostle Catholic School (K–8), Sherman Indian High School, Chemawa Middle School, Carnegie Schools Riverside (Pre-K–12), Monroe Elementary School, and California Baptist University. The proposed Arlington Production Wells and Pipeline project Alternative 2 Pipeline would be located on the opposite, southern side of the Riverside Freeway (Highway 91), which are within 0.25 mile of two schools: Arizona Intermediate and Arlington High schools.

Santa Ana River

Highland Elementary School in the City of Norco is located approximately 0.15-mile south of the Santa Ana River. There are no other schools that are within 0.25 mile of the Santa Ana River where *Arundo donax* and other non-native species removal would take place.

Parks and Other Recreational Facilities

Regional

County of San Bernardino

San Bernardino County provides a wide variety of recreational activities including hiking, biking, camping, fishing, swimming, horseback riding, and other entertainment. Recreational opportunities within San Bernardino County are provided by the U.S. Bureau of Land Management (BLM), National Park Service (NPS), California State Parks and Recreation Department (State Parks Department), County of San Bernardino Regional Parks Department, and recreation departments of local cities.

The State Parks Department helps to preserve the state's biological diversity, protect its natural and cultural resources, and create opportunities for outdoor recreation. The State Parks Department manages several public parks within the Santa Ana River watershed. The Chino Hills State Park is located in San Bernardino County and partially within the Chino Basin and encompasses 14,102 acres consisting of oaks, sycamores, and rolling grassy hills that stretch approximately 31 miles from the Santa Ana Mountains to the Whittier Hills (California Department of Parks and Recreation 2018a). The proposed Chino Basin Production Wells,

Refurbishment and Treatment System project area in the Chino Basin Bank is located approximately 8.7 miles north of the State Park boundary.

The San Bernardino County Regional Parks Department manages and maintains nine regional parks throughout San Bernardino County totaling approximately 9,200 acres. Recreational opportunities offered at these regional parks include lakes for fishing, sheltered group picnic facilities, RV and tent camping, swim complexes with water slides, water play parks, and playgrounds (County of San Bernardino Regional Parks Department 2018a). The nearest regional park to the proposed Project is Prado Regional Park located in the City of Chino, which is located less than a mile from a cluster of 6 ingress-egress points associated with the Santa Ana River Arundo Removal project (County of San Bernardino Regional Parks Department 2018b). The park offers opportunities for fishing, camping, hiking, biking, disc golf, and picnicking. The park also features a meeting room, two golf courses, an Olympic shooting range, and opportunities for horseback riding and archery (County of San Bernardino Regional Parks Department 2018c).

County of Riverside

Riverside County includes Joshua Tree National Park, several major state parks such as Anza-Borrego and Chino Hills State Park, approximately 35 Regional Parks, and other local parks within the Riverside County Regional Park and Open Space Districts' jurisdiction. Recreational opportunities available within Riverside County include sports parks, hiking and bike trails, campgrounds, waterparks, and fishing parks and lakes. These opportunities are provided by the Riverside County Regional Park and Open Space District and the recreation departments within local cities (County of Riverside 2015).

In addition to Chino Hills State Park, two other State parks are located within Riverside County: California Citrus State Historic Park and Lake Perris State Recreation Area (California Department of Parks and Recreation 2018b; California Department of Recreation 2018c). California Citrus State Historic Park is in the City of Riverside, north of Lake Matthews within the WMWD service area. This state historic park encompasses approximately 250 acres and acts as a living history museum that showcases the citrus industry heritage of the local area (California Department of Parks and Recreation 2018b). Bike trails, hiking trails, and other day-use activities are available for the public to use. The Arlington Production Wells and Pipeline project proposes two alternative locations for production wells (AD-6 and AD-7) and their associated distribution pipeline within the Riverside-Arlington Basin. Both proposed alternatives are in close proximity to California Citrus State Park. Alternative 1 proposes to construct the production wells and distribution pipeline approximately 1.9 miles northwest of the California Citrus State Historic Park border. Alternative 2 proposes to construct the extraction wells and distribution pipelines approximately 1.3 miles northwest of the California Citrus State Historic Park border.

Local

City of Montclair

City of Montclair Public Works personnel maintains 11 parks within the City of Montclair which cover over 76 acres of owned and leased parkland. Several other parks are leased from the Ontario-Montclair School District or the Chino Basin Water Conservation District for use by the

city. Montclair has no regional parks within its own boundaries. However, the city is in close proximity to three major regional recreational facilities. Frank G. Bonelli Regional County Park, Prado Regional Park, and Cucamonga Guasti Regional Park (City of Montclair 1999). The Chino Basin Production Wells, Refurbishment and Treatment System project is located just west of the Wilderness Basin Park, in the City of Montclair. In addition to the city's community parks, the Chino Basin Conservation district houses a 2-acre demonstration garden dedicated to educating the public about water-efficient landscaping. The Garden is located approximately 0.3 mile southeast of the site (City of Montclair 2018e).

City of Riverside

Riverside maintains 52 public parks and additional open space areas encompassing more than 2,300 acres (City of Riverside 2012). There are 15 recreational facilities in close proximity to the proposed Arlington Production Wells and Pipeline project area. These include: Victoria Cross Park, Harrison Park, Arlington Heights Sports Park, California Citrus State Historic Park, Don Derr Park, Riverwalk Dog Park, Rancho Loma Park, Collet Park, Myra Linn Park, La Sierra Park, Challen Hill Park, Arlington Park, Bryant Park, Don Lorenzi Park, and Hunt Park. The Cannon Pump Station project area has two parks in the vicinity. Taft Park and Sycamore Canyon Park. The proposed ID-4 CRA Crossing Refurbishment project is not located near any local parks. The closest recreational facility to this existing pipeline crossing is the California Citrus State Historical Park, located approximately 5 miles to the north.

Santa Ana River

There are 16 total parks and open space areas in close proximity to the proposed Santa Ana River Arundo Removal project area, which runs just north and parallel to the City of Riverside's northern boundary. Specifically, Fairmount Regional Park, Mounty Rubidoux Park, Tequesquite Park, Rancho Jurupa Park, Martha Mclean-anza Narrows Park, Santa Ana River Wildlife Area, Agricultural Park, Hidden Valley Wildlife Area, River Trails Park, Silverlakes Park, River Walk Park, Makin-Shearer Sports Complex, Stagecoach Park Future, Butterfield Park, Chino Hills State Park, and Fresno Canyon are located within the Santa Ana River corridor and directly adjacent to the project area. Further, the Santa Ana River Trail and Parkway is a bike path that follows the Santa Ana River and is planned to run for a total of 110 miles from Big Bear Lake in the San Bernardino Mountains to the Pacific Coast in Huntington Beach (Santa Ana River Trail 2018). The trail is currently 60 percent complete. The trail is maintained by a combination of city and county park departments as it passes through 14 incorporated cities in San Bernardino, Riverside, and Orange County (Riverside County Regional Park and Open-Space District 2018).

4.14.2 Regulatory Framework

Regional

Unit Strategic Fire Plan San Bernardino and Riverside Unit

Population growth, prolonged drought, poor forest health, and an increase in bark beetle infestation have led public agencies including Cal Fire to collaborate on the Unit Strategic Fire Plan, which is a wildfire planning document that tiers under the 2010 California Strategic Fire

Plan. In collaboration, public agencies formed the Mountain Area Safety Taskforce (MAST) which is a coalition of local, state and federal government agencies, private companies and volunteer organizations, in San Bernardino and Riverside counties partnering together to help prevent catastrophic wildfires, and to address the public safety concerns affiliated with the Wildland Urban Interface (CAL FIRE 2017).

San Bernardino County Emergency Operations Plan

The Emergency Management Program of San Bernardino County is governed and coordinated by the San Bernardino County Fire Department, Office of Emergency Services. The National Response Framework (NRF), National Incident Management System (NIMS), the Standardized Emergency Management System (SEMS) and the State of California Emergency Operations Plan provide planning and policy guidance to counties and local entities. These documents support the foundation for the County's Emergency Operations Plan (EOP), an all-hazard plan describing how the county will prepare for and respond to incidents. It is based on and compatible with the laws, regulations, plans, and policies listed above. The EOP describes how various agencies and organizations in the county will coordinate resources and activities with other federal, state, county, local, and private-sector partners (County of San Bernardino 2013b).

Local

Riverside County Emergency Operations Plan

The Riverside County Operational Area (OA) EOP addressed the planned response to extraordinary emergency situations associated with national disasters, technological incidents, and national security emergencies in or affecting Riverside County. The framework of the Riverside County EOP is very similar to the San Bernardino County EOP (County of Riverside 2006).

4.14.3 Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the significance of impacts related to public services and recreational facilities are based on Appendix G of the *CEQA Guidelines*. The proposed Project would result in a significant impact to public services and recreation if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
  - Fire protection (see Impact 4.14-1, below);
  - Police protection (see Impact 4.14-1, below);
  - Schools (see Impact 4.14-2, below);

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial deterioration of the facility would occur or be accelerated (see Impact 4.14-4, below);
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical impact on the environment (see Impact 4.14-4, below).

Impacts Discussion

Fire protection, police, schools, parks, and other public facility requirements are based on the number of residents and workers in a service area. Service demand is primarily tied to population, not building size or construction footprint. For example, because emergency calls typically make up the majority of responses provided by the police and fire departments, as the number of residents and workers increases, so does the number of emergency calls. Further, population growth could directly affect student generation rates for local schools and adequate park acreage to serve city/county parkland ratio goals. If there is an increased need for services, a determination of whether the increased need requires the construction of a facility to provide the services is made. If the construction of a facility is required, a determination of whether the construction of the new or altered facility could cause a significant effect is evaluated.

Fire and Police Protection

Impact 4.14-1: The proposed Project would have no impact to police or fire protection facilities.

The proposed Project would not increase the need for fire and police protection. The proposed Project activities consist of well refurbishment and installation of a groundwater treatment system in the City of Montclair; the construction of extraction wells, pipelines, and pump stations in the City of Riverside; pipeline refurbishment in unincorporated Riverside County; and invasive weed removal in the Santa Ana River. Construction and operation of the proposed Project would not impact existing police and fire protection facilities. These facilities would operate as normal during construction and operations of the proposed Project. The activities are small-scale, localized, and temporary. The proposed Project is to facilitate SARCCUP, a program designed to increase reliability of surface water to maintain existing agricultural lands and not public consumption. Only a few employees would be needed to construct the proposed projects and operation of facilities would be automated. No increase in population is anticipated as a result of implementing the proposed projects and no increase in use of police or fire protection is anticipated. Therefore, there would be no new physical impacts to the environment as a result of impacts to police and fire protection services.

Significance Determination before Mitigation: No Impact

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: No Impact

Schools

Impact 4.14-2: The proposed Project would have no impact to public school facilities.

As detailed above, various school districts serve the Project area. The proposed Project components include the Chino Basin Production Wells, Refurbishment and Treatment System, the Arlington Productions Wells and Pipeline, the Cannon Pump Station, the ID-4 CRA Crossing Refurbishment, and Santa Ana River Arundo Removal. The implementation of the proposed Project would temporarily increase construction personnel and would not increase long-term employment opportunities. As a result, the Project would not increase school-age children, and therefore, would not increase the need for additional public school resources. Therefore, no new physical impacts to the environment as a result of impacts to public schools would occur as a result of the proposed Project.

Significance Determination before Mitigation: No Impact

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: No Impact

Parks and Recreational Facilities

Impact 4.14-3: The proposed Project would have a less than significant impact to the use of existing neighborhood and regional parks or other recreational facilities.

The proposed Project includes water treatment, recharge/storage, and supply facilities and does not propose any new housing units or a substantial increase in new employment opportunities. Therefore, the Project would not result in the need to increase recreational facilities.

Further, the Chino Basin Production Wells, Refurbishment and Treatment System, Arlington Production Well and Pipeline, Cannon Pump Station, and ID-4 CRA Crossing Refurbishments projects would not include the construction of facilities within or adjacent to parks or other recreational facilities. Therefore, access to existing parks and recreational facilities would not be inhibited or discontinued, and no impacts would occur.

Santa Ana River Arundo Removal

This project area is located within and adjacent to 14 recreational facilities and parks. The Santa Ana River is accessible to the public and portions of the Santa Ana River is lined by the Santa

Ana River Trail that is used by recreational visitors. *Arundo donax* removal may result in the temporary closure of some locations normally accessible to the public. Temporary closure would occur during times of cutting and removing invasive plants as well as during times of herbicide application. However, these activities would be occurring seasonally, and in different locations, leaving much of the recreational areas available to the public. Once removal is completed in an area, public access would be available. The proposed Arundo donax removal is intended to restore the biodiversity and water quality of the Santa Ana River, and increase the recreational value. Therefore, impacts to recreational uses along the Santa Ana River would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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4.15 Transportation and Traffic

This section addresses the transportation and traffic impacts associated with implementation of the proposed Project. This section includes a description of existing regional and local roadways in the Project areas, pertinent regulations to transportation and traffic, and provides an evaluation of potential Project effects on transportation and traffic.

4.15.1 Environmental Setting

Regional Setting

San Bernardino County

Several key interstate and State highways traverse the County and provide primary access to the remainder of the region (SANBAG 2015). In the Project area, Interstate 10 (I-10), State Route 83 (SR-83) and SR-142 are located entirely within San Bernardino County. SR-83 runs north to south through the cities of Ontario and Chino and eventually merges with SR-71. SR-142 enters the City of Chino Hills from Orange County and merges with the 71 shortly after.

I-15, I-215, SR-71 and SR-60 both connect San Bernardino County project areas with Riverside County project areas. I-15 is a north-south freeway with six lanes running through the center of the project area in the cities of Rancho Cucamonga, Ontario, Eastvale, Norco and Corona. I-215 is an eight-lane northeast-southwest freeway passing through the cities of San Bernardino, Colton, Grand Terrace, Riverside, and Corona. SR-60 runs primarily west-east through the cities of Chino, Ontario, Jurupa Valley and Riverside, and SR-71 is a northwest-southeast highway passing through Chino Hills and unincorporated Riverside County.

Riverside County

Riverside County's transportation system is composed of numerous State highways (both freeways and arterial highways), as well as numerous county and city routes (Riverside County 2015). The majority of regional roadways in the project area in Riverside County also pass through San Bernardino County and were thus mentioned above. SR-91 is the only regional roadway in the project area that passes through Riverside County but does not enter Riverside County; SR-91 enters the project area from Orange County and passes through the cities of Corona and Riverside in the project area.

Local Setting

San Bernardino County

Project facilities are being proposed near multiple local roadways in San Bernardino County. Some ingress/egress points for the Santa Ana River Arundo Removal project would be located in the cities of San Bernardino, Colton, and Chino. The proposed Chino Basin Production Wells, Refurbishment and Treatment System project would be located in the City of Montclair southeast of the intersection of Camulos Avenue and Palo Verde Street.

Riverside County

The majority of project facilities would be located in Riverside County and thus would be located on or near multiple Riverside roadways. Some ingress/egress points for the Santa Ana River Arundo Removal project would be located in the cities of Jurupa Valley, Riverside, Norco, Eastvale, and Corona. The Arlington Production Wells and Pipeline would be located entirely within the City of Riverside. The Alternative 1 pipeline would be installed along Magnolia Avenue from La Sierra Avenue to Adam Street. Alternative 1 wells would be installed at Magnolia Street's intersections with Jackson Street and Adam Street. The Alternative 2 pipeline would be installed principally along Indiana Avenue from Fillmore Street to Jackson Street. Alternative 2 wells would be installed at the intersection of Motor Circle and Auto Center Drive and just north of the intersection of Paddington Drive and Jackson Street. The Cannon Pump Station project would be located near Alessandro Boulevard and Overlook Parkway within the City of Riverside. The ID-4 CRA Crossing Refurbishment is in unincorporated Riverside County and would not occur near any local roadways.

Bicycle and Pedestrian Facilities

San Bernardino County

By 2011, San Bernardino County had approximately 468 miles of bicycle infrastructure (SANBAG 2015). There are no identifiable bike routes or paths in Montclair where the proposed Chino Basin Production Wells, Refurbishment and Treatment System would be located, but bicycling is still encouraged as a form of transportation throughout the city (City of Montclair 1999). Some of the ingress-egress points would be adjacent to bikeways along Tippecanoe Avenue and a proposed bikeway along Waterman Avenue in the City of San Bernardino. Two ingress/egress points in the City of Colton would be located along an existing Class I bikeway and a planned Class II bikeway (City of Colton 2013). In the City of Chino, an ingress/egress point would be located along a proposed Class I bicycle facility (City of Chino 2010).

All San Bernardino County-designated trail facilities are multi-use trails that allow pedestrian, bicycle, and equestrian use (San Bernardino County 2007). The proposed *Arundo donax* removal and ingress/egress points along the Santa Ana River in San Bernardino County would be located adjacent to the Santa Ana River Trail, which is part of a planned regional trail extending across multiple jurisdictions from the San Bernardino Mountains in San Bernardino County to the Pacific Ocean in Orange County (Riverside County 2015). Additionally, some ingress-egress points would be located adjacent to a regional trail along a tributary to the Santa Ana River in the City of San Bernardino (City of San Bernardino 2005).

Riverside County

Riverside County includes several regional trails and bike paths. Regional trails are designed to serve users needing soft trail surfaces, including equestrians, pedestrians, joggers, and mountain bikers (Riverside County 2015). The proposed *Arundo donax* removal and ingress/egress points along the Santa Ana River in Riverside County would be located adjacent to the Santa Ana River Trail, which is part of a planned regional trail extending across multiple jurisdictions from the

San Bernardino Mountains in San Bernardino County to the Pacific Ocean in Orange County (Riverside County 2015).

Public Transportation

San Bernardino County

Six agencies provide bus service within the county (SANBAG 2015), with Omnitrans being the predominant bus service in the Project area (Omnitrans 2018). Metrolink's San Bernardino Line and Riverside Line both pass through the San Bernardino portion of the Project area (Metrolink 2018). Bus routes 88 and 85 would pass near the Chino Basin Production Wells, Refurbishment and Treatment System site. The Metrolink San Bernardino Line is located approximately 0.8-mile north of the Chino Basin Production Wells, Refurbishment and Treatment System site. The ingress/egress points located in the cities of San Bernardino, Colton and Chino would be located near Routes 1, 2, 5, 8, 10, 11, 14, 15, 19, 208, 215, and 290. There are no actual public transportation routes within the Santa Ana River corridor where restoration and *Arundo donax* removal would occur.

Riverside County

The Riverside Transit Authority provides bus services to the western portion of Riverside County and portions of the Project area. The Metrolink Riverside Line also passes through parts of Riverside County in the Project area. The Metrolink Riverside line is located approximately 0.5-mile south of Alternative 1 of the Arlington Productions Wells and Pipeline project and adjacent to portions of Alternative 2 of the Arlington project. The Cannon Pump Station project would be located near RCTA Routes 20 and 22. The Orange County Transit Authority (OCTA) Routes 794 and 794A connects to the City of Corona in Riverside to the cities of Anaheim, Orange, Santa Ana and Costa Mesa in Orange County (RTA 2018). Ingress/egress points in the cities of Jurupa Valley, Riverside, Norco, Eastvale, and Corona would be located near the RCTA bus routes for those cities, which include Routes 1, 3, 10, 12, 13, 14, 15, 16, 20, 21, 22, 26, 27, 29, 49, 50, 51, 52, 54, 200, 204, 205/206, 208, 210, 212, and the Gold Line. There are no actual public transportation routes within the Santa Ana River corridor where restoration and *Arundo donax* removal would occur.

4.15.2 Regulatory Framework

State

California Department of Transportation (Caltrans)

(Caltrans) is responsible for the design, construction, maintenance, and operation of the California State Highway System, as well as that portion of the Interstate Highway System within the state's boundaries. Caltrans is a leader in promoting the use of alternative modes of transportation. The current framework of Caltrans was set down by Assembly Bill 69 in 1972 (Caltrans 2016c). The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability (Caltrans 2016).

The proposed Project area includes numerous interconnected interstates and California state routes managed by Caltrans. The following Caltrans regulations apply to potential transportation and traffic impacts associated with the proposed Project.

California Vehicle Code (CVC), division 15, chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

California Street and Highway Code Sections 660-711. Caltrans encroachment regulations would apply to construction of the proposed pipelines within and immediately adjacent to roadways, as well as the transportation of construction crews and construction equipment throughout the Project area. Caltrans requires that permits be obtained for transportation of oversized loads, certain materials, and construction-related traffic disturbance.

Regional

Southern California Association of Governments Regional County Transportation Plan

The SCAG Regional Transportation Plan (RTP) is a multi-modal, long-range planning document prepared in coordination with federal, state, and other regional, subregional, and local agencies in southern California. The RTP includes programs and policies for congestion management, transit, bicycles and pedestrians, roadways, freight, and finances. The RTP is prepared every three years and reflects the current future horizon based on a 20-year projection of needs. The current RTP covers the years from 2012 to 2035. The RTP's primary use is as a regional long-range plan for federally funded transportation projects. It also serves as a comprehensive, coordinated transportation plan for all governmental jurisdictions within the region. Each agency responsible for transportation, such as local cities, counties, and Caltrans, has different transportation implementation responsibilities under the RTP. The RTP relies on the plans and policies governing circulation and transportation in each county to identify the region's future multi-modal transportation system (Riverside County 2012).

San Bernardino County Congestion Management Program

The San Bernardino Congestion Management Program (SBCMP) identifies goals of the program, defines legal requirements, provides other background information and describes each individual element, component and requirement of the program. It also reflects all legislative changes to the program since its inception in 1992. The SBCMP defines a network of state highways and arterials, level of service standards and related procedures and provides technical justification for the approach (SANBAG 2016).

Local

Riverside County Congestion Management Program

The most recent Riverside Congestion Management Program (RCMP) was adopted in December 2011. The CMP was established in the State under Proposition 111 to more directly link land use, transportation, and air quality and to prompt reasonable growth management programs that would

more effectively use transportation funds, alleviate traffic congestion and related impacts, and improve air quality (RCTC 2011).

4.15.3 Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR and consistent with Appendix G of the *CEQA Guidelines*, the proposed Project would have a significant impact on transportation and traffic if it would:

- Conflict with an applicable plan, ordinance or policy establishing measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit (see Impact 4.15-1, below);
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards and travel demand measures, or other standards established by the county congestion management agency for designated road or highways (see Impact 4.15-2, below);
- Result in change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risk (see Impact 4.15-3, below);
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (see Impact 4.15-4, below);
- Result in inadequate emergency access (see Impact 4.15-5, below); or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance of safety of such facilities (see Impact 4.15-6, below).

Impacts Discussion

Impact 4.15-1: Implementation of the proposed Project could have a significant impact on an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

Construction of the proposed Projects would involve construction worker and construction vehicles traveling to and from the construction sites using existing rights-of-way in the Project area. Construction of the Arlington Production Wells and Pipeline would occur directly within rights-of-way requiring temporary lane closures. In addition, the Cannon Pump Station may require lane closures as well during pipeline connection construction. Therefore, the proposed Project may potentially affect circulation during construction periods. Implementation of Mitigation Measure TT-1 would ensure that impacts to traffic and circulation would be minimized. With implementation of mitigation, impacts would be less than significant.

Once operational, the proposed facilities would not require full-time employees and impacts to circulation associated with any maintenance vehicles are expected to be minimal. Therefore, the proposed Project would not have a permanent impact on circulation in the Project area.

The proposed Santa Ana River Arundo Removal Project would occur at locations along the Santa Ana River between Prado Basin and the Interstate 10 freeway crossing in Riverside, many of which are along existing rights-of-way. The use of existing rights-of-way by vehicles associated with the transport of construction materials and removal of cleared *Arundo donax* and other non-native species material could affect existing circulation in the Project area. Furthermore, accessing removal areas would require vehicles crossing parts of the Santa Ana River Trail, which is both a pedestrian and bicycle path. Implementation of Mitigation Measure TT-1 would minimize impacts to bike facilities. With mitigation, impacts would be less than significant.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

TT-1: Prior to construction of pipelines within streets, such as for the Arlington Production Wells and Pipeline and Cannon Pump Station projects, a construction traffic control plan shall be prepared and implemented. Elements of the plan should include, but are not necessarily limited to, the following:

- Develop circulation and detour plans if necessary to minimize impacts to local street circulation and existing public transit, bikeways, and pedestrian facilities, including the Santa Ana River Trail. Use haul routes minimizing truck traffic on local roadways to the extent possible.
- To the extent feasible, and as needed to avoid adverse impacts on traffic flow, schedule truck trips outside of peak morning and evening commute hours.
- Install traffic control devices as specified in Caltrans' Manual of Traffic Controls for Construction and Maintenance Work Zones where needed to maintain safe driving conditions. Use flaggers and/or signage to safely direct traffic through construction work zones.
- For roadways requiring lane closures that would result in a single open lane, maintain alternate one-way traffic flow and utilize flagger-controls.
- Provide advance notification to the owners or operators of facilities adjacent to proposed construction activities on rights-of-way regarding planned timing, location and duration of construction. This also includes notification of affected public transit companies and the applicable city where streets are being impacted. Notify police and fire stations within a 5-mile radius about construction details along rights-of-way.

Significance Determination after Mitigation: Less than Significant

Congestion Management Program

Impact 4.15-2: Implementation of the proposed Project could conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards and travel demand measures, or other standards established by the county congestion management agency for designated road or highways.

Proposed Project construction would involve construction worker and construction vehicles traveling to and from the construction sites using existing rights-of-way in the Project area. In some cases, construction would occur directly within rights-of-way. Furthermore, construction could require land closures or bike paths and trails. Therefore, the proposed Project may potentially result in increased traffic and affect congestion management programs during construction periods.

Once operational, the proposed facilities would not require full-time employees and impacts to circulation associated with any maintenance vehicles are expected to be minimal. Therefore, the proposed projects would not have a permanent impact related to traffic and congestion management programs in the Project area. Since the projects would not generate additional trips that could cause additional delays, the proposed project would be consistent with local Congestion Management Plans. Impacts would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

Implementation of Mitigation Measure TT-1 is required.

Significance Determination after Mitigation: Less than Significant

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Air Traffic Patterns

Impact 4.15-3: Implementation of the proposed Project would not result in change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risk.

The project would not impact air traffic patterns. No impacts would occur.

Significance Determination before Mitigation: No Impact

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: No Impact

Hazards

Impact 4.15-4: Implementation of the proposed Project would not have a significant hazard impacts due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Groundwater wells, ancillary facilities and *Arundo donax* and other non-native species removal would not be located within an existing roadway. Construction of pipelines in roadways would not impact any design features and would not represent an incompatible use. Following installation of pipelines in roadways, the roadway would be returned to preexisting conditions. Therefore, impacts related to roadway hazards resulting from roadway design features or incompatible uses would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Emergency Access

Impact 4.15-5: Implementation of the proposed Project could result in inadequate emergency access.

Some construction of the proposed projects would occur within local roadways. Although construction vehicles would be required to yield to emergency vehicles, the presence of large construction vehicles, lane closures, and/or laydown areas in existing roadways could slow emergency vehicle flow and impede emergency access to various areas. No permanent impacts to roadways or driveways would result following installation of groundwater wells. Implementation of Mitigation Measure TT-1 would provide for emergency access at all times through the construction areas. With mitigation, impacts would be less than significant.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

Implementation of Mitigation Measure TT-1 is required.

Significance Determination after Mitigation: Less than Significant

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Public Transit, Bicycle and Pedestrian Facilities

Impact 4.15-6: Implementation of the proposed Project could conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Construction of the proposed Project could affect existing public transit, bicycle, and pedestrian facilities through direct construction or the presence of construction vehicles on roadways supporting these alternative transportation facilities.

Operation of the proposed Project facilities would not directly or indirectly eliminate existing or planned alternative transportation corridors or facilities (bicycle paths, lanes, bus turnouts, etc.) or include changes in policies or programs that support alternative transportation. The proposed Project facilities would not be located in areas where future alternative transportation facilities are planned. Implementation of Mitigation Measure TT-1 would ensure that appropriate safety measures and signage would be implemented prior to the temporary closure of bikeways, bus stops and pedestrian facilities. With mitigation, impacts would be less than significant.

The implementation of Mitigation Measure TT-1 would reduce the Project's potential impacts to public transit, bicycle, and pedestrian facilities to less than significant. Mitigation Measure TT-1 would require all construction activities to be conducted in accordance with an approved construction traffic control plan, which would reduce construction-related impacts to alternative transportation facilities to the maximum extent feasible. Mitigation Measure TT-1 requires development of any necessary detour plans to minimize impacts to existing public transit, bikeways, and pedestrian facilities and notification of public transit companies and applicable jurisdictions regarding construction activities. Thus, through the environmental review and development permit process, subsequent project-specific analysis would be needed to determine specific required elements of the traffic control plans.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

Implementation of Mitigation Measure TT-1 is required.

Significance Determination after Mitigation: Less than Significant

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4.15.4 References

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4.16 Tribal Cultural Resources

This section provides an assessment of potential impacts related to cultural resources that could result from implementation of the proposed Project. The analysis in this section is based, in part, on consultation with the Native American Heritage Commission and Native American Tribes.

4.16.1 Existing Setting

As noted in Section 4.5, the proposed Project area encompasses the ethnographic territories of the Gabrielino-Tongva, Luiseno, and Cahuilla. Detailed descriptions for each of the five ethnographic groups can be found in Section 4.5.

4.16.2 Regulatory Framework

State

Assembly Bill 52 and Related Public Resources Code Sections

Assembly Bill (AB) 52 was approved by California State Governor Edmund Gerry "Jerry" Brown, Jr., on September 25, 2014. The act amended California Public Resources Code (PRC) Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the *CEQA Guidelines*, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency's formal notification and the lead agency must begin consultation within 30 days of receiving the tribe's request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project's impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or if the lead agency has complied with Section 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, the lead agency may certify an Environmental Impact Report (EIR) or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including but not limited to the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

4.16.3 Consultation

Pursuant to the requirements of AB 52, requiring government-to-government consultation, IEUA as the lead agency sent consultation notification letters via certified mail to Native American groups affiliated with the proposed Project on November 14, 2016 (**Table 4.16-1**). Based on the watershed-wide scope of the SARCCUP projects, letters were sent to all of the Native American groups that had contacted any of the four agencies. The letters included a description of the proposed Project, the project location, and a notification of the type of consultation being initiated. To date, the City has received responses from eight groups including the Agua Caliente Band of Cahuilla Indians, the Gabrielino Band of Mission Indians, the Juañeno Band of Mission Indians, the Morongo Band of Mission Indians, the Pechanga Band of Luiseño Indians, the Rincon Band of Luiseño Indians, the San Manuel Band of Mission Indians, and the Soboba Band of Luiseño Indians. In a letter dated December 7, 2016, Victoria Harvey, Archaeological Monitoring Coordinator for the Tribal Historic Preservation Office of the Agua Caliente Band of Cahuilla Indians, formally stated that the proposed Project overlaps the Tribe's Traditional Use Area and requested AB 52 consultation. In a letter dated December 14, 2016, IEUA responded to Ms. Harvey by formally inviting the Agua Caliente Band to engage in AB 52 consultation regarding the proposed Project.

TABLE 4.16-1
SUMMARY OF AB 52 CONSULTATION

Contact	Tribe/Organization	Date AB 52 Notice Sent	Response Received	Date AB 52 Initiation Sent	Consultation Results
Patricia Garcia, Director of Tribal Historic Preservation Office	Agua Caliente Band of Cahuilla Indians	11/14/2016	Requests consultation	12/14/2016	Consultation ongoing
Andrew Salas, Chairman	Gabrielino Band of Mission Indians - Kizh Nation	11/14/2016	Requests consultation	12/21/2016	Consultation ongoing
Joyce Stanfield Perry, Tribal Manager	Juañeno Band of Mission Indians - Acjachemen Nation	11/14/2016	Requests consultation	12/14/2016	Consultation ongoing
Raymond Huaute, Cultural Resource Specialist	Morongo Band of Mission Indians	11/14/2016	Requests consultation	12/21/2016	Consultation ongoing
Anna Hoover, Cultural Analyst	Pechanga Cultural Resources Department	11/14/2016	Requests consultation	12/21/2016	Consultation ongoing
Jim McPherson, Cultural Resources Department	Rincon Band of Luiseno Indians	11/14/2016	Defer to Pechanga and/or Soboba	-	
Lee Clauss, Director - CRM Department	San Manuel Band of Mission Indians	11/14/2016	Requests consultation	-	
Joseph Ontiveros, Cultural Resources Director	Soboba Band of Luiseno Indians	11/14/2016	Requests consultation	12/21/2016	Consultation ongoing

In a letter dated December 5, 2016, Andrew Salas, Chairman of the Gabrielino Band of Mission Indians, stated that portions of the proposed Project are located within the ancestral territory of the Gabrielino and that he has concerns regarding the proposed Project area's sensitivity for the presence of cultural resources. Mr. Salas requested to enter into consultation with IEUA regarding the proposed Project, and asked that all project-related ground disturbance be monitored by a Native American monitor. In a letter dated December 21, 2016, IEUA responded to Mr. Salas by formally inviting the Gabrielino Band of Mission Indians to engage in AB 52 consultation regarding the proposed Project. In a letter dated January 18, 2017, Mr. Salas responded to IEUA's invitation for AB 52 consultation by emphasizing the sensitivity of the proposed Project area and reiterated the desire for consultation and to have Native American monitors present for project-related ground-disturbing activities once the proposed Project is implemented.

In an email dated November 16, 2016, Joyce Stanfield Perry, Tribal Manager and Cultural Resources Director for the Juañeno Band of Mission Indians, Acjachemen Nation, requested consultation with IEUA regarding the proposed Project. In a letter dated December 14, 2016, IEUA responded to Ms. Perry's request by formally inviting the Juañeno Band of Mission Indians to engage in AB 52 consultation regarding the proposed Project.

In an email dated November 23, 2016, Raymond Huaute, Cultural Resources Specialist for the Morongo Band of Mission Indians, indicated that the Morongo were interested in consultation regarding the proposed Project and stated that they would have comments for the Draft EIR. In a letter dated December 21, 2016, IEUA responded to Mr. Huaute formally inviting the Morongo Band of Mission Indians to engage in AB 52 consultation regarding the proposed Project. As part

of a meeting with IEUA held on February 23, 2017, the Morongo stated that they will review the Draft EIR prepared for the proposed Project after it is published for public review and that they would like to consult on the project-level EIRs that will be prepared for individual components of the proposed Project.

In a letter dated November 23, 2016, Anna Hoover, Cultural Analyst for the Pechanga Band of Luiseño Indians, stated that the proposed Project overlaps Pechanga ancestral territory and formally requested AB 52 consultation. Ms. Hoover also requested that the Pechanga be added to the proposed Project's distribution list for public notices, and circulation of documents including environmental review documents, archaeological reports, development plans, and proposed grading plans. In a letter dated December 21, 2016, IEUA formally invited the Pechanga Band of Luiseno Indians to engage in AB 52 consultation regarding the proposed Project.

In a letter dated October 31, 2016, Vincent Whipple, Manager of the Rincon Band of Luiseno Indians Cultural Resources Department, stated that the proposed Project is located within Luiseno territory, but outside of Rincon's historic boundaries. Mr. Whipple stated that Rincon has no information to share in regards to cultural resources and deferred to the Pechanga and Soboba.

In a letter dated December 8, 2016, Joseph Ontiveros, Cultural Resources Director for the Soboba Band of Luiseño Indians, formally requested AB 52 consultation. In a letter dated December 21, 2016, IEUA responded to Mr. Ontiveros' request by formally inviting the Soboba to engage in AB 52 consultation regarding the proposed Project.

In an email dated January 18, 2017, Lee Clauss, Cultural Resources Management Director for the San Manuel Band of Mission Indians, stated that large portions of the proposed Project, especially those associated with Arundo removal, overlap Serrano ancestral territory, and that the project is of concern to the San Manuel. Ms. Clauss requested that the San Manuel be given consulting party status and asked to be notified when the Draft EIR is ready for circulation.

4.16.4 Impacts and Mitigation Measures

Significance Criteria

According to Appendix G of the *CEQA Guidelines*, the proposed Project could have a potentially significant impact with respect to aesthetics if it would:

Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(l) (see Impact 4.16-1, below);
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section

5024.1? In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe (see Impact 4.16-1, below).

Impacts Discussion

Impact 4.16-1: The project could cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(l), or determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1.

Consultation with Native American groups has been initiated pursuant to AB-52 requirements. No specific tribal cultural resources have been identified within the project sites. During the initial consultations, the Native American groups requested continued discussions as SARCCUP project locations are identified in more detail. The project locations are described in this Draft EIR. **Mitigation Measure TRIBAL-1** commits IEUA or other implementing agencies to continuing tribal consultations pursuant to AB-52. Continuation of consultations for each project evaluated in this Draft EIR ensures that AB-52 will be completed and adverse impacts to potential tribal cultural resource can be avoided.

Significance Determination before Mitigation: Potentially Significant

Mitigation Measures

TRIBAL-1: **Continued Tribal Resources Consultation**. Prior to the start of ground-disturbing activities associated with the Chino Basin Production Wells, Refurbishment and Treatment System project, the Arlington Production Wells and Pipeline project, the Cannon Pump Station project, and the Santa Ana River Arundo Removal project, IEUA shall notify and consult with Native American groups that have requested notification and further consultation under AB-52 regarding the project locations and construction methods.

Significance Determination after Mitigation: Less than Significant

4.17 Utilities and Service Systems

This section addresses the utilities and service system impacts associated with implementation of the proposed Project and provides an evaluation of potential effects pertaining to wastewater treatment, water supply, water treatment and solid waste.

4.17.1 Environmental Setting

Regional Setting

San Bernardino County

Water and Wastewater Facilities

Inland Empire Utilities Agency

The Chino Basin Production Wells, Refurbishment and Treatment System project would be located within the IEUA service area (see Figures 3-1 and 3-2).

The IEUA provides wholesale imported SWP water from the Metropolitan Water District (MWD) to seven retail agencies: the cities of Chino, Chino Hills, Ontario, Upland; Cucamonga Valley District in the City of Rancho Cucamonga; Fontana Water Company in the City of Fontana; and the Monte Vista Water District in the City of Montclair (IEUA 2016).

IEUA provides sewage utility services to seven contracting agencies under the Chino Basin Regional Sewage Service Contract: the Cucamonga Valley Water District in the City of Rancho Cucamonga as well as the cities of Chino, Chino Hills, Fontana, Montclair, Ontario, and Upland. The IEUA service area is 242-square miles consisting of hundreds of miles of pipelines and four RWRP facilities all containing primary, secondary, and tertiary treatment and recycled water pumping facilities that are interconnected in a regional network owned and operated by IEUA.

The IEUA provides brine disposal through managing the Inland Empire Brine Line (SAWPA 2012). This pipeline system accepts brine from local water and waste water treatment facilities and routes the brine through a pipeline system to the wastewater treatment plant operated by the Orange County Sanitation District at Huntington Beach for treatment and then discharge into the Pacific Ocean outfall.

Solid Waste Management

The County of San Bernardino Solid Waste Management Division (SWMD) operates and manages the County solid waste disposal system, which consists of five regional landfills and nine transfer stations. SWMD administers the County's solid waste handling franchise program and the refuse collection permit program that authorizes and regulates trash collection by private haulers in unincorporated areas (San Bernardino County 2016b).

There are two County-operated landfills within the vicinity of the proposed Chino Basin Production Wells, Refurbishment and Treatment System project in San Bernardino County. The closest active permitted landfill is the Mid-Valley Landfill located at 2390 North Alder Avenue in

Rialto, which is expected to operate until 2033. As of September 2009, the landfill had a remaining capacity of 67,520,000 cubic yards (CalRecycle 2018a). The San Timoteo Sanitary Landfill is the second closest landfill located on San Timoteo Canyon Road in Redlands, which had a remaining capacity of 11,402,000 cubic yards as of April 2017. The landfill is expected to operate until 2043 (CalRecycle 2018b).

Riverside County

Water and Wastewater Facilities

Western Municipal Water District

The Arlington wells and pipeline project, Cannon Pump Station project, and the Santa Ana River Arundo Removal project would be located within the WMWD service area (see Figures 3-1, 3-3, 3-4, and 3-6).

The WMWD has a service area of 527 square miles located in Western Riverside County (WMWD 2016). WMWD's water supplies consist primarily of purchased imported water from MWD. MWD obtains its primary water supplies from the SWP and Colorado River Aqueduct. Approximately 76 percent of the water WMWD sells is treated, with the rest being either raw or recycled water. With increasing urbanization, agricultural water use had declined in the WMWD area with Single-Family accounts making up 51 percent of water usage, which can be reflected in the land use in WMWD's service area which is predominately vacant undeveloped land, with residential use the second most common. WMWD has five centralized wastewater treatment facilities to which, wastewater from the service area is conveyed. Individual septic tanks are also a popular means of wastewater management amongst the inhabitants of the WMWD service area. Both the City of Riverside and WMWD provide wastewater collection and treatment services within the WMWD retail area. WMWD also operates the Western Riverside County Regional Wastewater Treatment Plant, a tertiary facility of providing recycled water for reuse or for discharge through an outfall to the Santa Ana River. The treatment plant is owned by the Western Riverside County Wastewater Authority.

Eastern Municipal Water District

The ID-4 CRA crossing project would be located within the Eastern Municipal Water District (EMWD) service area (see Figures 3-1 and 3-5).

The EMWD provides potable, recycled, and wastewater services to over 700,000 people in an approximate 555 square mile area of western Riverside County. EMWD acts as both a wholesale and retail water agency (EMWD 2016). Most of this water is purchased through MWD via the SWP and Colorado River Aqueduct (CRA). EMWD is responsible for all wastewater collection and treatment within its service area and operates four regional water reclamation facilities in the San Jacinto Valley, Moreno Valley, Temecula Valley, and Perris Valley with a combined capacity of 81,000 AFY. Recycled water is extensively used in the EMWD service area to aide in meeting the area's non-potable water demands.

Solid Waste Management

The two closest County-operated landfills to the proposed project facilities in Riverside County include El Sobrante Landfill and Badlands Sanitary Landfill. El Sobrante Landfill, located at 10910 Dawson Canyon Road in Corona, had a remaining capacity of 145,530,000 cubic yards as of April 2009 and is expected to operate until 2045 (CalRecycle 2018c). The Blythe Sanitary Landfill is located at 1000 Midland Road in Blythe. The landfill had a remaining capacity of 3,834,470 cubic yards as of 2016, and is expected to operate until 2047 (CalRecycle 2018d). Blythe Landfill currently accepts chemical toilet and septic tank waste from commercial hauling companies. No other county landfill accepts sewage waste (RCDWR 2018).

Local Setting

Chino Basin

Water and Wastewater Facilities

Monte Vista Water District

The proposed Chino Basin Production Wells, Refurbishment and Treatment System would be located in the City of Montclair (see Figures 3-1 and 3-2).

The City of Montclair receives water services from the Monte Vista Water District (MVWD). MVWD's service area is approximately 9.56 miles and includes the City of Montclair and portions of the City of Chino and unincorporated areas of San Bernardino County (MVWD, 2016). MVWD's distribution system encompasses four separate pressure zones and approximately 198 miles of water distribution mains, six reservoirs with a capacity of 12 million gallons, and seven active pump booster stations used to boost water throughout the system. Water use has historically been predominately agricultural, but with continued development the land use of the area has shifted to more residential as has the water usage. Water demand in the area is projected to grow and is displayed in **Table 4.17-1.**

IEUA manages the Regional Sewage Service System within the MVWD. IEUA currently produces approximately 56,000 AFY of recycled water, of which, approximately 23,000 is discharge to the Santa Ana River (MVWD 2016). This recycled water is tertiary-treated water suitable for irrigation, industrial water supply, ground water recharge, environmental enhancement, and unrestricted recreation use such as boating and fishing.

TABLE 4.17-1
PROJECTED SUPPLY AND DEMAND IN THE MONTE VISTA SERVICE AREA IN ACRE FEET PER YEAR (AFY)

	2020	2025	2030	2035	2040
Projected Demand[1]	35,200	35,396	35,370	36,081	36,364
Projected Supply Normal Year[2]	51,790	51,749	51,778	51,828	51,828

[1] Includes potable and recycled water demand for all uses.
[2] Includes potable and recycled water supply.

SOURCE: MVWD, 2016.

Riverside-Arlington Basin

Water and Wastewater Facilities

City of Riverside

The proposed Arlington Productions Wells and Pipeline and Cannon Pump Station projects would be located in the City of Riverside (see Figures 3-1, 3-3, and 3-4).

The City of Riverside provides its own water services, wastewater services, potable, non-potable, and recyclable through the City of Riverside Public Utilities Department (RPUD) (RPUD 2015). RPUD's service area is approximately 75 square-miles of which approximately 70 square-miles reside within the City of Riverside whose boundaries are 80 square-miles. The remaining 10 square-miles of the City of Riverside not serviced by RPUD are serviced by WMWD (9 square-miles), EMWD (1 square-mile), and the Riverside Highland Water Company (0.25 square-miles). WMWD serves the unincorporated Riverside County area just south of the City of Riverside, where the ID-4 CRA Crossing Refurbishment project is located. To meet water projected water demand, as shown below in **Table 4.17-2,** the RPUD has several planned supplies and imported water sources to augment the projected existing supplies for the service area. These include the Seven Oaks Dam Conservation, Riverside North Aquifer Storage and Recovery, Pelliser Ranch Aquifer Storage and Recovery, Recycled water from the RWQCP, and imported water from MWD via WMWD. The total available supply including these supply augmentations is illustrated in Table 4.17-2.

RPUD works jointly with the Public Works Department to manage wastewater and recycled water in the RPUD service area. The Regional Water Quality Control Plant (RWQCP) is a tertiary-treatment plant that has a wastewater inflow of 46 MGD and is operated by the Public Works Department. The RWQCP provides wastewater services beyond the service area of RPUD, including the unincorporated areas of Riverside served by the Jurupa, Rubidoux, and Edgemont Community Services Districts.

TABLE 4.17-2
PROJECTED SUPPLY AND DEMAND IN THE CITY OF RIVERSIDE PUBLIC UTILITIES SERVICE AREA IN ACRE-FEET PER YEAR (AFY)

	2020	2025	2030	2035	2040
Projected Demand[1]	95,221	96,534	99,015	101,589	104,257
Projected Supply[2])	116,903	121,903	124,703	124,703	124,703

[1] Includes potable and recycled water demand for all uses.
[2] Includes groundwater, recycled water, and purchased/imported water supplies.

SOURCE: RPUD, 20156.

Santa Ana River

The proposed Santa Ana River Arundo Removal project would occur within the Santa Ana River channels and tributaries, as well as within Prado Basin (see Figures 3-1 and 3-6). The work would

not occur near existing water or sewer utilities and would not require water, sewer, or solid waste facilities. Water in the Santa Ana River consists of perennial flows from multiple tributaries (OCPW 2009).

4.17.2 Regulatory Framework

Federal

Resource Conservation and Recovery Act (42 USC 6901 et seq.)/ Toxic Substances Control Act (15 USC 2605)/Hazardous and Solid Waste Act

The combination of the Resource Conservation and Recovery Act (RCRA) of 1976 and the Toxic Substances Control Act of 1976 authorized the USEPA to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste and non-hazardous waste, and underground storage tanks. Solid waste consists of solids, liquids and gases, including garbage, also known as municipal solid waste (e.g., milk cartons and coffee grounds); refuse (e.g., metal scrap, wall board, and empty containers); sludges from waste treatment plants, water supply treatment plants, or pollution control facilities (e.g., scrubber slags); industrial wastes (e.g., manufacturing process wastewaters and non-wastewater sludges and solids); and other discarded materials, including solid, semisolid, liquid, or contained gaseous materials resulting from industrial, commercial, mining, agricultural, and community activities (e.g., boiler slag). Currently, all 50 states and territories have been granted authority to implement RCRA. State RCRA programs must be at least as stringent as the federal requirements, but states can adopt more stringent requirements as well. California has implemented additional requirements, as discussed further below.

The RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. Contractors would be required to comply with state regulations including the Hazardous Materials Release Response Plans and Inventory Act, Unified Hazardous Waste and Hazardous Materials Management Regulatory Program, License to Transport Hazardous Materials, and Hazardous Materials Storage and Handling, which would make the proposed action consistent with the Toxic Substances Control Act.

State

California Integrated Waste Management Act of 1989 and Assembly Bill 341

The California Integrated Waste Management Board (CIWMB) oversees, manages, and tracks waste generated in California. The authority and responsibilities of the CIWMB were promulgated in Assembly Bill (AB) 939 and SB 1322, which were signed into law as the California Integrated Waste Management Act of 1989 (Public Resources Code [PRC], Division 30). The California Integrated Waste Management Act, as modified by subsequent legislation, mandated all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of wastes by 2000 (PRC Section 41780). In January 2010, the CIWMB changed its name to the California Department of Resources, Recycling, and Recovery (CalRecycle).

AB 341, which amends the Integrated Waste Management Act of 1989 and was adopted by the California legislature in October 2011, directs CalRecycle to adopt a state policy that actively seeks to achieve a goal of diverting 75 percent of solid waste from landfills by 2020. The new legislation focuses largely on commercial waste generators, as this sector was identified as the most in need of improved waste management. AB 341 does not alter the 50 percent diversion mandate; rather, it is a "legislative declaration of policy" to guide CalRecycle's administration of the California Integrated Waste Management Act.

A jurisdiction's diversion rate is the percentage of total generated waste it diverts from disposal through source reduction, reuse, and recycling programs. The state determines compliance with the 50 percent diversion mandate through a complex formula. Use of the formula requires cities and counties to conduct empirical studies to establish a base-year waste generation rate against which future diversion is measured. The diversion rate in subsequent years is determined through deduction instead of direct measurement. Rather than counting the amount of material recycled and composted, the city or county tracks the amount of material disposed of at landfills and then subtracts that amount from the base-year amount; the difference is assumed to be diverted (PRC Section 41780.2).

CALGreen Construction Waste Management Requirements

Effective in 2014, the California Green Building Standards Code required a minimum of 50 percent of construction and demolition waste diversion. New requirements effective January 2017 will require at least 65 percent of construction and demolition waste to be diverted (CalRecycle 2016e).

Regional

San Bernardino County Construction Waste Management Plans

San Bernardino County requires all new construction projects to prepare a Construction and Demolition Solid Waste Management Plan (waste management plan). Waste management plans must contain two parts. Part I includes an estimate of the amount of material in tons to be disposed and diverted during construction. Part II requires a summary of what tonnage was actually diverted and disposed, including disposal/diversion receipts. Completed plans must be submitted to the County Department of Public Works Solid Waste Management Division for review and approval (San Bernardino County 2015a).

Riverside County Construction and Demolition Waste Diversion Program

Projects that require a building permit may have the potential to generate construction and demolition waste and may be required to complete a Waste Recycling Plan and a Waste Reporting Form. A Waste Recycling Plan identifies the estimated quantity and location of recycling for construction and demolition waste resulting from the project prior to permit issuance. A Waste Reporting Form is required following project completion and prior to final inspection that demonstrates the actual quantity of construction and demolition waste recycled.

Both documents should be submitted to the Riverside County Department of Waste Resources (Riverside County 2016).

San Bernardino County Municipal Code

Section 33.0852 of the San Bernardino County Municipal Code requires all persons collecting portable toilet waste or other sanitary waste to obtain a permit from the San Bernardino County Department of Environmental Health Services. Section 33.0860 requires that all sanitary wastes are disposed of at a location approved by the San Bernardino County DEHS and meets one of the following requirements: the current waste discharge requirements for the treatment and/or disposal of liquid wastes from the appropriate California Regional Water Quality Control Board or a solid waste disposal site permit sanctioning the disposal of septic or other liquid wastes from the California Integrated Waste Management Board.

Riverside County Ordinance No. 712 (Liquid Waste Ordinance)

Per Riverside County Ordinance No. 712, all persons operating a liquid waste vehicle and providing portable toilet services must have a current permit issued by the County Health Officer. All wastes collected must be transported to a disposal site approved by the Health Officer for that type of waste (Riverside County 2007).

Local

Chino Basin Recharge Master Plan Update

In September 2000, the Superior Court of California approved the Peace Agreement and authorized the implementation of the Chino Basin Optimum Basin Management Program. The Peace Agreement required the preparation of a recharge master plan update every five years starting in 2000. The Chino Basin Watermaster (Watermaster) collaborated with the Chino Basin Water Conservation District and IEUA and solicited stakeholder input to prepare this update. The Recharge Master Plan Update includes various components, including planning criteria, safe yield, integrated review of water supply plans, and stormwater recharge and supplemental recharge enhancement opportunities. The plan made various conclusions based on these components, some of which are listed below:

- The Watermaster needs to acquire supplemental water to meet its replenishment obligations and the dilution requirements for the recharge of recycled water; these source will include unused production rights, imported Metropolitan water, and if necessary other non-Metropolitan imported water.
- Due to the environmental and legal challenges involved in importing water, the Watermaster should consider preemptive replenishment or water banking in the Chino Basin.
- The Watermaster should consider use of aquifer storage and recovery wells for replenishment purposes.
- The Watermaster should use in-lieu recharge to achieve an improved balance of recharge and discharge (Wildermuth 2010).

4.17.3 Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the significance of impacts related to hydrology and water quality are based on Appendix G of the CEQA Guidelines, as modified by *California Building Industry Association v. Bay Area Air Quality Management District* and currently being updated by the state. The proposed Project would have a significant impact on utilities and service systems if it would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water, drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects (see Impact 4.17-1, below);
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years (see Impact 4.17-2, below);
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments (see Impact 4.17-3, below);
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals (see Impact 4.17-4, below); or
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste (see Impact 4.17-4, below).

Methodology

Utilities and service system information for the Project area was derived from various sources and compiled in this section to develop a comprehensive understanding of the potential for adverse Utilities and service system impacts associated with construction and operation of the proposed Project.

Impacts Discussion

Impact 4.17-1: The proposed Project would not require relocation or construction of new or expanded water, wastewater treatment, or storm water, drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Construction

Construction associated with the proposed facilities would generate minor wastewater from worker portable toilet use. Per San Bernardino County Municipal Code requirements, wastewater generated from portable toilets within San Bernardino County would be collected by a permitted entity and disposed of at an appropriate location that would not exceed applicable wastewater treatment requirements. Construction is not expected to generate other forms of wastewater

requiring treatment. The volume of wastewater would be negligible compared to the local wastewater treatment capacities, resulting in a less than significant impact.

Construction activities would generate negligible to no storm water runoff. Storm water, if any, that would be managed as discussed in Section 4.9, Hydrology and Water Quality, which concluded a less than significant impact.

Construction activities would require no use of natural gas, and negligible use of electrical power and telecommunications, all of which would not require the construction of new or additional facilities. Therefore, the associated impact would be less than significant.

Operation

The operation of the Chino Basin Production Wells, Refurbishment and Treatment System would result in the generation of brine that would require treatment and disposal. The brine would be routed to the sanitary sewer or to the existing Inland Empire Brine Line, subject to input water quality limitations.

Once constructed, the facilities would include storm water and drainage structures to manage storm water runoff. The structures would be required to comply with local MS4 requirements that would require storm water drainage structures not exceed existing capacities or install measures to reduce volumes if they do. With compliance with existing MS4 regulations, the impact would be less than significant.

The operation of the wells and treatment facilities would require no use of natural gas, and negligible use of electrical power and telecommunications, all of which would not require the construction of new or additional facilities. Therefore, the associated impact would be less than significant.

Significance Determination before Mitigation: Less than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

Water Supplies

Impact 4.17-2: The proposed Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years.

Construction

Construction of the proposed Project facilities would require some water for various activities, such as dust control and concrete mixing. This water would be drawn from the public water supply. The exact construction water demand is not known at this time, but it is not anticipated to be so substantial that it would require new or expanded water supply resources or entitlements. The water districts in the Project area anticipate having sufficient supplies to meet anticipated demand, as discussed in the Environmental Setting. Impacts related to water supply would be less than significant during construction.

Operation

The proposed facilities would operate to produce, treat, and convey existing water throughout the Project area, as part of the regional SARCCUP program. The proposed Project facilities would be designed to increase the reliability of groundwater supplies by supporting a cooperative, inter-agency water management program, resulting in a beneficial impact to water supply during operation.

Significance Determination before Mitigation: Less Than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less Than Significant

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Wastewater Treatment Capacity

Impact 4.17-3: The proposed Project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.

The impacts to wastewater treatment providers was analyzed above in Impact 4.17-1, which concluded a less than significant impact.

Significance Determination before Mitigation: Less Than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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Solid Waste

Impact 4.17-4: The proposed Project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. In addition, the Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Construction

Construction of the proposed Project facilities would generate solid waste requiring disposal at a landfill or recycling. As discussed in the Environmental Setting, all landfills within the Project vicinity have existing remaining capacities and would continue to operate for at least another decade. Further, all construction activities for the proposed Project would be required to divert construction waste from landfills per State CALGreen construction waste diversion requirements. San Bernardino County requires preparation of a waste management plan and Riverside County requires preparation of a Waste Recycling Plan and Waste Reporting form to demonstrate compliance with these State diversion requirements. Therefore, impacts related to sufficient landfill capacity during construction would be less than significant.

Operation

During operation, maintenance activities associated with groundwater wells, conveyance pipelines, ancillary facilities, and restored habitat would generate minimal solid waste. Existing landfills in the Project vicinity are anticipated to be able to accommodate waste associated with Project operation. Therefore, impacts related to sufficient landfill capacity during operation would be less than significant.

Significance Determination before Mitigation: Less Than Significant

Mitigation Measures

No mitigation measures are required.

Significance Determination after Mitigation: Less than Significant

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4.17.4 References

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CalRecycle. 2018c. Facility/Site Summary Details: El Sobrante Landfill (33-AA-0217).

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Santa Ana Watershed Project Authority (SAWPA), 2012. Brine Line Connections.

Western Municipal Water District (WMWD), 2016. 2015 Urban Water Management Plan. June.

Wildermuth Environmental, 2010, 2010 Recharge Master Plan Update, June.

CHAPTER 5
Other CEQA Considerations

This chapter presents the evaluation of other types of environmental impacts required by the California Environmental Quality Act (CEQA) that are not covered within the other chapters of this Environmental Impact Report (EIR). The other CEQA considerations include environmental effects that were found not to be significant, significant and unavoidable adverse impacts, significant irreversible environmental changes that would be caused by the Project, growth-inducing impacts, and energy consumption.

5.1 Significant and Unavoidable Adverse Environmental Impacts

As required by Section 15126.2 (b) of the *CEQA Guidelines*, an EIR must identify any significant environmental effects which cannot be avoided if the proposed Project is implemented. After conducting environmental analyses for each of the environmental issues identified in Appendix G of the *CEQA Guidelines*, it was determined that the proposed Project would not result in any significant and unavoidable adverse environmental impacts.

5.2 Significant Irreversible Environmental Changes

CEQA Guidelines 21100(b) (2) and 15126.2(b) require that any significant effect on the environment that would be irreversible if the pro is implemented must be identified. A project would generally result in a significant irreversible impact if:

- Primary and secondary impacts (such as roadway improvements that provide access to previously inaccessible areas, etc.) would commit future generations to similar uses.
- The project would involve a large commitment of nonrenewable resources.
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.

Construction and operation of the proposed projects would require the use and consumption of nonrenewable resources, such as steel and other metals. Renewable resources, such as lumber and other wood byproducts, would also be used. Unlike renewable resources, nonrenewable resources cannot be regenerated over time. Construction of facilities would require the commitment of a relatively small amount of building materials. The small quantity of building materials used during implementation of SARCCUP would not result in a significant impact because these types of resources are anticipated to be in adequate supply into the foreseeable future. Therefore,

impacts due to irretrievable and irreversible commitments of resources are considered less than significant.

5.3 Growth-Inducing Impacts

The proposed Project is part of the larger SARCCUP collaborative plan designed to improve the Santa Ana River watershed's water supply resiliency and reliability in the local groundwater basins. The growth anticipated in the region has been identified in local General Plans prepared by local land use agencies and municipalities. SARCCUP partnering agencies have no control over land use decisions or future population growth. Implementation of SARCCUP would not have direct growth inducement effects, as it does not propose development of new housing that would attract additional population. Nor would program construction extend roads or other infrastructure that could indirectly induce growth. The proposed Project's growth-inducing potential was analyzed in Section 4.13, *Population and Housing*.

5.3.1 Population Projections

Population and water demand projections are compiled for the SARCCUP service area and compared with existing water demands.

The total population of San Bernardino County has increased by 429,431 people from 2000 to 2016. During that 16-year period, the growth rate was 25.1 percent, which was higher than the SCAG Region rate of 14.8 percent. San Bernardino County contributed a total of 11.3 percent of the SCAG Region population (Southern California Association of Governments [SCAG] 2017).

The total population of Riverside County has increased by 802,441 people from 2000 to 2016. During that 16-year period, the growth rate was 51.9 percent, which was higher than the SCAG Region rate of 14.8 percent. Riverside County contributed a total of 12.4 percent of the SCAG Region population (SCAG 2017).

See also Section 4.13, *Population and Housing*, for a detailed description of population projections for the SARCCUP region.

5.3.2 Water Supply and Demand

The water supply and demand for the Inland Empire Utilities Agency (IEUA), Western Municipal Water District (WMWD), Eastern Municipal Water District (EMWD), and San Bernardino Valley Municipal Water District (SBVMWD) in **Table 5-1** represent the total projected water demand and supply within each of the respective water districts' boundaries. Total regional demand includes imported water, which is provided by the respective district, recycled water, groundwater, and local surface water within the SARCCUP Water Management Region (**Figure 5-1**).

TABLE 5-1
TOTAL SUPPLY AND DEMAND (SINGLE DRY YEAR) FOR SARCCUP REGION

District	2020	2025	2030	2035	2040
IEUA	270,524	278,541	283,814	289,127	294,359
EMWD	224,800	248,600	268,100	287,200	305,000
WMWD	222,209	235,653	249,044	270,185	193,135
SBVMWD	254,785	265,677	276,613	288,321	296,915
Total Demand	**972,318**	**1,028,471**	**1,077,571**	**1,134,833**	**1,089,409**
IEUA	213,213	230,148	248,784	262,660	288,415
EMWD*	224,800	248,600	268,100	287,200	305,000
WMWD	141,601	147,753	159,930	162,065	174,703
SBVMWD	372,444	335,034	342,227	349,455	356,283
Total Supply	**952,058**	**961,535**	**1,019,041**	**1,061,380**	**1,124,401**

SOURCE:
Eastern Municipal Water District (EMWD). 2015. EMWD Urban Water Management Plan
Inland Empire Utilities Agency (IEUA). 2015. IEUA Urban Water Management Plan
San Bernardino Valley Municipal Water District (SBVMWD). 2016. SBVMWD Urban Water Management Plan
Western Municipal Water District (WMWD). 2015. WMWD Urban Water Management Plan

5.4 Energy Conservation

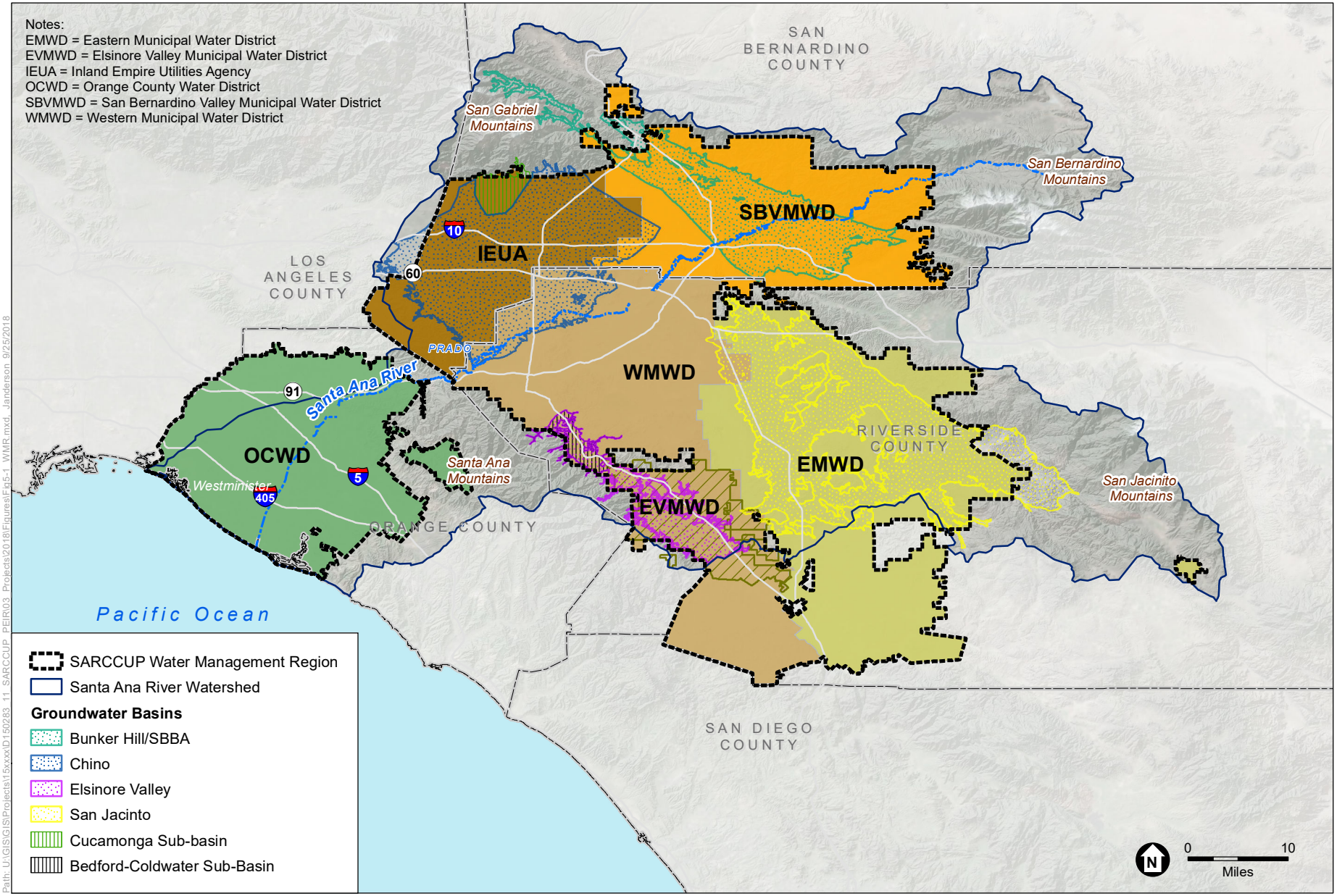
CEQA Section 21100(b) requires that an EIR discuss potential energy impacts of proposed projects, and emphasizes avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. This section provides a discussion of SARCCUP agencies' energy conservation initiatives.

The three means of conserving energy as described in Appendix F of the *CEQA Guidelines*:

1. Decreasing overall per capita energy consumption.
2. Decreasing reliance on natural gas and oil.
3. Increasing reliance on renewable energy sources.

5.4.1 SARCCUP Agency Energy-Efficiency Programs

The IEUA has made significant strides in reducing its dependence on the electrical power grid by investing in renewable energy programs. IEUA's diverse renewable portfolio consists of 3.5 MW solar, 1.0 MW of wind, 3.0 MW of engines, and 4.0 MW of battery storage. When fully operational, onsite generation will provide enough electricity to satisfy agency-wide demand during peak hours; current output is approximately 50% of the summer peak demand. IEUA seeks to achieve peak power independence by 2020 by improving operational efficiencies and implementing new renewable projects and energy management agreements.



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SOURCE: ESRI

SARCCUP

Figure 5-1
SARCCUP Water Management Region

ESA

The WMWD governs and manages the Western Riverside County Regional Wastewater Authority. The Authority has more than 5,000 solar panels at the wastewater treatment plant that provides up to one megawatt of energy during peak energy use hours. The system provides one megawatt of energy, which is enough to power more than 200 homes per year. At its peak, the solar panels will provide 25 percent of the power needed to operate the wastewater treatment plant.

The EMWD installed solar power generation systems at its Perris, Moreno Valley, Temecula, San Jacinto, and Sun City facilities. The systems produce 1 megawatt (1,000 kilowatts) of power to be used at each of the respective facilities and surrounding supporting infrastructure. Each facility will have an average of 30 percent of its energy usage provided through the solar facilities. The solar investment is anticipated to save ratepayers more than $1 million annually over the life of the system.

Fuel cells installed at EMWD's Moreno Valley and Perris Valley regional water reclamation facilities operate on renewable fuel, provide 25 to 40 percent of each facility's energy requirements and produce virtually zero emissions, cutting greenhouse gases by more than 10,600 tons annually—the equivalent of taking approximately 1,000 cars off the road for one year. The fuel cells also save approximately $1 million per year in energy costs.

The EMWD's nine 60-kw microturbines provide additional power generation. The exhaust from these microturbines heats water necessary to power a 150-ton air conditioning unit. Microturbines save more than $300,000 a year.

5.4.2 Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR and consistency with Appendix F of the *CEQA Guidelines*, and agency and professional standards, the proposed Project would have a significant effect on energy if it would:

- Effect local and regional energy supplies such that additional electrical capacity is required.

Impacts Discussion

Impact 5.4-1: Operation of the proposed Project would not require substantial additional power that could affect local and regional energy supplies.

Energy would be consumed during both construction and operation of SARCCUP. Energy would also be consumed during the manufacturing and transportation of building materials, preparation of the site, and construction and site restoration activities. Although SARCCUP would result in the irretrievable and irreversible commitment of energy resources in the form of diesel fuel, gasoline and electricity during construction and operation. the projects would not result in the wasteful, inefficient or unnecessary consumption of energy during construction or operation however. These types of resources are anticipated to be in adequate supply into the foreseeable future.

Although SARCCUP projects would involve the use of increased electricity and fuel during operation, the amounts would be accommodated by existing service providers and would result in a minimal increase in demand as groundwater pumping and conveyance require energy intermittently. Existing electrical service providers are governed by the California Public Utilities Commission, which implements and administers the State's Renewables Portfolio Standard rules.

Given the individual and collective efforts of SARCCUP agency energy conversation programs, and the minimal increase in fuel use during operation of SARCCUP, energy consumption during operation would not substantially contribute to an increase in energy and therefore would not substantially affect local and regional energy supplies or result in wasteful use of energy.

Significance Determination: Less than Significant

5.5 References

Eastern Municipal Water District (EMWD). 2015. EMWD Urban Water Management Plan.

Inland Empire Utilities Agency (IEUA). 2015. IEUA Urban Water Management Plan.

Orange County Municipal Water District (OCWD). 2015. OCWD Urban Water Management Plan.

San Bernardino Valley Municipal Water District (SBVMWD). 2016. SBVMWD Urban Water Management Plan.

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CHAPTER 6
Cumulative Impacts

6.1 Introduction

The California Environmental Quality Act (CEQA) requires that a Draft Environmental Impact Report (EIR) assess the cumulative impacts of a project with respect to past, current, and probable future projects within the region. The *CEQA Guidelines* (Section 15355) define cumulative effects as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in environment which results from the incremental impact of the Proposed Program and the Proposed Project when added to other closely related and reasonably foreseeable future projects. Pertinent guidance for cumulative impact analysis is given in Section 15130 of the *CEQA Guidelines*:

- An EIR shall discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable" (i.e., the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of current projects, and the effects of probable future projects, including those outside the control of the lead agency, if necessary).
- An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.
- A project's contribution is less than cumulatively considerable, and thus not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.
- The discussion of impact severity and likelihood of occurrence need not be as detailed as for effects attributable to the project alone.

Elements considered necessary to provide an adequate discussion of cumulative impacts of a project include either a list of past, present, and probable future projects producing related or cumulative impacts OR a summary of projections contained in adopted local, regional or statewide planning documents. For this analysis, other past, present, and reasonably foreseeable future construction projects, SARCCUP related infrastructure projects, in the Santa Ana River Watershed are considered in addition to growth projections contained in adopted General Plans for the counties of Riverside and San Bernardino.

This Draft EIR covers implementation of the proposed projects, which include refurbishment of a groundwater well and installation of a groundwater treatment system in the City of Montclair; the construction of extraction wells, pipelines, pump stations, and ancillary facilities in the City of

Riverside; pipeline refurbishment in unincorporated Riverside County; and invasive weed removal in the Santa Ana River. Since the individual projects analyzed in this EIR are located in disparate locations, this cumulative analysis relies on the consistency with General Plans to evaluate cumulative effects rather than a list of proximate projects. However, since this EIR also describes the entire SARCCUP program, the cumulative analysis has been broadened to evaluate the combined construction and operation all of the proposed SARCCUP projects that have been proposed by partner agencies to enable the full functioning of the SARCCUP program, including those projects that have separate CEQA processes and determinations. **Table 6-1** lists the projects included in the broader cumulative impacts analysis.

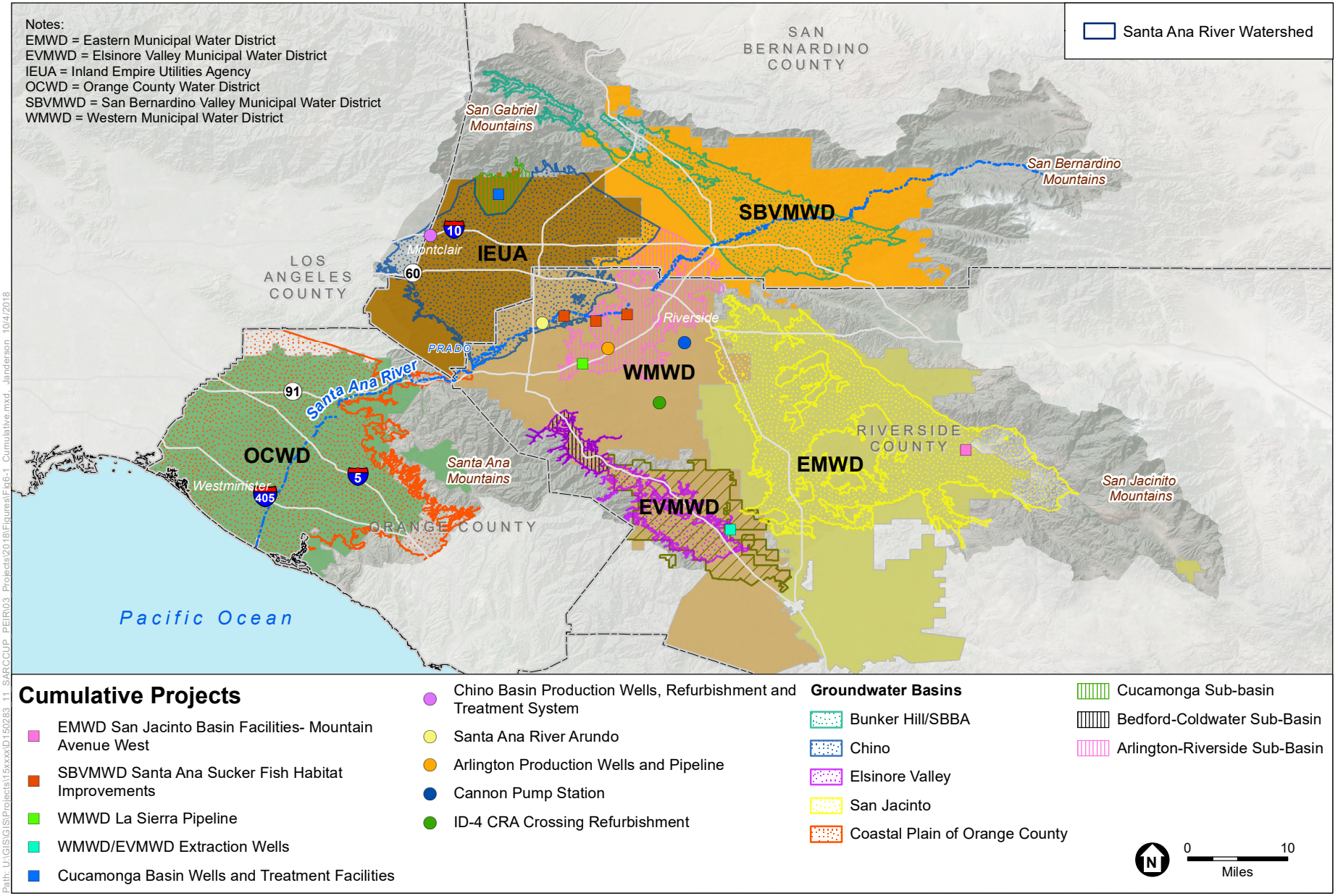
6.2 Other SARCCUP Projects

SARCCUP is a watershed-scale collaborative program designed to improve the Santa Ana River watershed's water supply resiliency and reliability by implementing numerous watershed-wide projects (refer to Chapter 2, Table 2-1) that would increase available dry-year yield (DYY) from local groundwater basins. Responsibility for implementing SARCCUP has been divided among the partnering agencies and, consequently, partnering agencies are preparing separate environmental impact assessments for construction of related facilities. SARCCUP projects primarily involve constructing new pipelines, extraction wells, and pumping stations that, when combined with existing facilities, would enhance the conjunctive use capabilities in the watershed. This EIR evaluated the environmental impacts associated with implementing five SARCCUP-related projects (refer to Chapter 3, *Project Description*). The primary projects to be constructed by partner agencies to support SARCCUP that are not evaluated in detail in this EIR are described below and illustrated in **Figure 6-1**.

6.2.1 SARCCUP Conjunctive Use Program Design of the San Jacinto Basin Facilities

Eastern Municipal Water District (EMWD) is developing an estimated 39-acre recharge basin, Mountain Avenue West. EMWD will complete the design of the recharge ponds to range in depth from about 10 to 15 feet, berms so they range from approximately 3 to 6 feet above existing ground, and perimeter fencing to include approximately two to three access gates. EMWD will design the pipelines to include approximately one to three 20 to 30 inch laterals from the existing 33-inch-diameter raw water pipeline to the recharge ponds, and are at a length of about 700 feet. EMWD will plan for flow and pressure control facilities with a meter section which can be used to regulate the flow of water into the ponds. EMWD will design the described facilities by completing preliminary design work (will include the following supporting work: geotechnical investigation, topographic survey, and BOD). Using the BOD and supporting documents, EMWD will produce 100 percent (Final) design, plans, and specifications.

EMWD will design the amenities for a walking/jogging path with conservation-focused informational signage along the perimeter of the recharge site. EMWD will design the landscaping to include drought tolerant plants and drip irrigation. EMWD will produce a final design/landscaping plan.



SOURCE: ESRI

SARCCUP

Figure 6-1
SARCCUP Cumulative Projects

ESA

TABLE 6-1
SARCCUP INITIATIVES

SARCCUP Element	Description	Lead Agency Implementing Component	Analyzed at Project level in this Draft EIR?*
SARCCUP Water Bank	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	All	Yes
Chino Basin Production Wells and Treatment	Use of new and existing wells, well treatment and interconnections within IEUA's service area.	IEUA	Yes
Riverside-Arlington Basin Wells and Pipeline	Use of a new Cannon pump station, existing wells, refurbishment of ID-4 Crossing, and interconnections within WMWD's service area.	WMWD	Yes
Arundo donax (Habitat)	Remove water-intensive invasive weed along the Santa Ana River to increase surface flows.	OCWD	Yes
Orange County (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	OCWD	Yes
Chino Basin (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	IEUA	Yes
Riverside-Arlington Basin (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	WMWD	Yes
Elsinore Basin (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	WMWD	No
San Bernardino Basin (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	SBVMWD	No
San Jacinto Basin (Water Bank)	Management of existing groundwater basins as required to meet SARCCUP's conjunctive use operations.	EMWD	No
Cucamonga Basin	Use of new and existing wells, well treatment reservoir replacement, and interconnections within IEUA's service area.	CVWD	No
San Jacinto Basin Facilities	Use of new and existing wells, recharge basins, well treatment and interconnections within EMWD's service area.	EMWD	No
Santa Ana Sucker (Habitat)	Modify four tributaries along the Santa Ana River to create aquatic habitat.	SBVMWD	No
Water Conservation	Implement conservation-based rates and Smartscape to attain water savings from retail agencies and residential/commercial customers.	SAWPA	No
La Sierra Pipeline and Sterling Pump Station	Use of a new pump station, pipelines and interconnections within WMWD's service area	WMWD	No
Elsinore Basin Wells	Use of new and existing wells, well treatment and interconnections within EVMWD's service area.	WMWD	No

* Projects not receiving project-level analysis in this EIR will undergo or have already undergone project-specific separate CEQA analysis.

EMWD will design three new extraction wells and associated distribution pipelines so the pipelines connect the wells to the existing potable water distribution system (with one pipeline per well). EMWD will design the length of the pipelines, location of the wells and the distance to the distribution system by completing preliminary design work (will include the following supporting work: geotechnical investigation, topographic survey, and BOD). Using the BOD and supporting documents, EMWD will produce 100 percent (Final) design, plans, and specifications.

6.2.3 SARCCUP Conjunctive Use Program Design in the Elsinore Basin

The Western Municipal Water District (WMWD), in partnership with EVMWD, will design two extraction wells with production capacities of 1,500 acre-feet per year (AFY). WMWD will design the wells to operate at an estimated average flow rate between 1,000 and 1,200 GPM. The depth of the wells will ultimately depend on the final locations selected. The wells will be designed to be at least 1,500 feet away from current nearby wells to avoid well interference issues. The design for the wells will consist of a building(s) (approximately 1,730 SF to 2,400 SF), to house the wells, disinfection equipment and the well head facilities The well building design will include separate rooms for the well/discharge manifold, the chlorination equipment and appurtenances. The rolling building(s) will be a pre-engineered structure similar to those manufactured by Roll-Apart Buildings. WMWD, in partnership with EVMWD, will design a water distribution pipeline to connect the wells to the nearby water distribution system. The pipelines length will be dependent on final location of the wells and the distance to the distribution system. WMWD, in partnership with EVMWD, will produce 100 percent (Final) design, plans, and specifications.

6.2.4 SARCCUP Conjunctive Use Program Design of the Chino Basin Connection

WMWD will design the La Sierra Pipeline, Sterling Pump Station, and associated reservoir facilities to enable the conveyance of up to 10 CFS of potable water produced by the Chino Basin desalters and conveyed via the existing Arlington Pipeline to the site of the pump station and reservoir on Sterling Avenue in the City of Riverside. The La Sierra Pipeline, which will begin at location of the pump station and reservoir, will be designed to convey the water to WMWD's service area which is at a higher grade. The pipeline will be designed to have a diameter of 30 inches and length of 4.5 miles. The pump station will be designed to include a configuration of six pumps totaling 20 CFS, with space for two additional electric motors which would allow for expanding the station's pumping capacity to 30 CFS in future. The pumps will be designed to be powered by two 700 HP natural gas engines and four 700 electric motors. WMWD will design the associated concrete reservoir to include a capacity of approximately 1.1 million gallons. WMWD will produce 100 percent (Final) design, plans, and specifications.

As part of this component, IEUA-member agency Cucamonga Valley Water District (CVWD) will construct new groundwater production wells at Wellfield 3A and provide wellhead treatment systems to treat groundwater from the Chino Basin for nitrate removal, increasing yield through the treatment of otherwise impaired water. In addition, existing storage reservoirs and extraction

wells would be replaced with new facilities. Other similar projects may be implemented within the Jurupa Community Services District within the Riverside County portions of the Chino Basin. These projects would be covered under separate CEQA efforts.

6.2.5 Santa Ana Sucker Fish Habitat Improvements Design

The San Bernardino Valley Municipal Water District (SBVMWD) is implementing a program to restore aquatic habitat in the watershed to benefit the endangered Santa Ana sucker. Four distinct sites are being evaluated each of which are tributaries to the Santa Ana River mainstem in Riverside County: Anza Drain, Old Farm Road, Lower Hole Creek, and Hidden Valley Wetlands. SBVMWD is preparing habitat improvement plans that will include site preparation including non-native tree removal and hazardous soil removal, and earth work that will include channel excavation, gravel placement, liner, erosion control, and instream woody material management. A key element of the program will be the preparation of a water diversion plan that will identify perennial water sources to support the habitat. The program will include constructing site improvements, seeding, irrigation system installation, signage and fencing. SBVMWD will produce final habitat improvement plans. The program provides a major portion of the habitat improvement element of the SARCCUP objectives.

6.3 Impacts and Mitigation Measures

6.3.1 Aesthetics

Impact CUM 6-1: Concurrent construction and operation of the SARCCUP projects combined with other planned regional projects in the geographic scope could result in cumulative long-term impacts to aesthetics.

The geographic scope for potential cumulative impacts to aesthetics includes foreground views immediately surrounding proposed Project sites as well as the multiple long-distance viewsheds within the western San Bernardino and Riverside Counties. The proposed SARCCUP projects would be constructed in disparate locations within the mostly urbanized western portions of the two counties. As described in Section 4.1, *Aesthetics*, the projects would include small above-ground utility structures as well as underground pipelines that would have no long-term visual impacts. Some of the other SARCCUP projects would include construction of recharge basins that would be visibly locally as well as from long-range views.

Construction of all aboveground facilities including the recharge basins, monitoring facilities, extraction facilities, treatment facilities, and pump stations would result in a temporary visual impact to the character of the local surrounding areas. Once in operation, the proposed facilities would be non-descript utility structures or underground. The proposed recharge basins would add new structures in vacant lands; however, the structures would not be taller than existing structures in neighboring parcels and the addition of amenities and landscaping would reduce the visual impact.

The majority of projects listed in Table 6-1 are located in areas that are already substantially developed, or the sites have previously been altered for agricultural practices. The County General Plans present goals and policies regarding local aesthetics that are designed to minimize light and glare impacts. When combined with planned growth throughout the County the proposed SARCCUP projects would not add substantial new lighting that could conflict with local goals and policies. Mitigation measures designed to minimize effects of each SARCCUP project, including Mitigation Measure AES-1 and AES-2 would soften the cumulative impacts. Furthermore, the habitat improvement portions of SARCCUP would enhance natural habitats in the region that could benefit local views of the stream channels. With implementation of mitigation measures, impacts would not contribute significantly to an adverse impact on local scenic views and vistas, visual character, or light and glare. Considering the anticipated impacts of the region's population growth, and the relatively small above ground impacts associated with other SARCCUP projects including the recharge basins, the SARCCUP projects' incremental contribution to visual resources impacts would not be cumulatively considerable.

Significance Determination: Less than Significant

6.3.2 Agriculture and Forestry Resources

Impact CUM 6-2: Concurrent construction and operation of the SARCCUP projects and other development projects in the geographic scope could result in cumulative short-term effects to agriculture and forestry resources.

The geographic scope for potential cumulative impacts related to agriculture and forestry resources includes all agricultural lands and forestry resources adjacent to the proposed Projects. The project facility construction sites are located within the City of Montclair, City of Riverside, and unincorporated Riverside County. As described in Section 4.2, *Agriculture and Forestry Resources*, the proposed Project facilities would not involve changes to the environment that would convert farmland to non-agricultural use. Additionally, there are no forests that would be converted. Except for the Santa Ana River site, the parcels are very small, adjacent to or within public utility corridors or in developed areas. The Arundo Removal project within the Santa Ana River could involve temporary disturbance to designated lands, including Williams Act Contract lands; however, disturbance would be limited to removal of invasive plants and would add value to these lands. The proposed Project facilities would not be constructed on agricultural land that is designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland or on lands under Williamson Act Contracts.

The majority of projects listed in Table 6-1 are located in areas that are already substantially developed, or the sites have previously been altered for agricultural practices, and therefore would not contribute significantly to direct impacts to agricultural resources or conflict with local goals and policies. County General Plans present goals and policies regarding conservation of agricultural lands. SARCCUP projects would not add impacts to agricultural lands that could conflict with local goals and policies. Additionally, the intent of SARCCUP is to increase water

yield during times of drought that would cumulatively benefit all water users including agriculture. Given the lack of agricultural resources affected by the proposed Project, and the benefits to of water supply reliability, the combined effects to agriculture would not be considered cumulatively significant.

Significance Determination: Less than Significant

6.3.3 Air Quality

Impact CUM 6-3: Concurrent construction and operation of the SARCCUP projects and other development projects in the geographic scope would not result in cumulative impacts to air quality.

Please refer to Section 4.3, *Air Quality*, Impact 4.3-3, the analysis of cumulative air quality impacts, repeated below.

The South Coast Air Quality Management District (SCAQMD) neither recommends quantified analyses of cumulative construction or operational emissions nor provides methodologies or thresholds of significance to be used to assess cumulative construction or operational impacts. Individual cumulative projects that exceed the SCAQMD recommended daily thresholds for an individual project would cause a cumulatively considerable impact.

The project area is located within the South Coast Air Basin (SCAB), which is considered the cumulative study area for air quality. The SCAB is currently classified as a state nonattainment area for ozone, PM10, and PM2.5, and is a federal nonattainment area for ozone and PM2.5. Based on SCAQMD's cumulative air quality impact methodology, SCAQMD recommends that if an individual project results in air emissions of criteria pollutants (ROG, CO, NOx, SOx, PM10, and PM2.5) that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the program region is in nonattainment under an applicable federal or state ambient air quality standard.

As shown in Section 4.3, Table 4.3-6, regional construction emissions of NOx would exceed the SCAQMD's daily thresholds prior to implementation of mitigation. Therefore, the proposed Project's contribution to cumulative NOx for regional construction emissions would be cumulatively considerable.

With regard to toxic air contaminants, the proposed Project would not result in substantial pollutant concentrations during construction activities that would exceed project-level TAC thresholds. Project construction activities would be short-term and would include the use of off-road equipment that would comply with increasingly stringent emissions requirements. Therefore, the proposed Project would not expose sensitive receptors to substantial pollutant concentrations and impacts would not be cumulatively considerable.

For some SARCCUP projects in the future, temporary construction emissions could be significant and unavoidable. However, the five projects evaluated in this EIR would not result in direct significant air quality impacts, nor would these five projects contribute significantly to the combined air emissions generated by the other SARCCUP projects. Similarly, although other development projects in the region may result in significant air emissions within an air basin that is already in non-attainment, the five projects analyzed in this EIR would not contribute significantly to the cumulatively adverse condition.

The emissions from construction of the proposed Project are not predicted to exceed any applicable SCAQMD regional or local impact threshold with implementation of Mitigation Measure AIR-1 and therefore, are not expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Therefore, the proposed Project would not result in a cumulatively considerable net increase for non-attainment pollutants or ozone precursors and would result in a less than significant impact for construction emissions.

Significance Determination: Less than Significant

6.3.4 Biological Resources

Impact CUM 6-4: Concurrent construction and operation of the SARCCUP projects combined with other planned regional projects in the geographic scope could result in cumulative long-term impacts to biological resources.

The geographic scope for potential cumulative impacts to biological resources includes the open-space areas within the cities of Montclair and Riverside, and portions of unincorporated Riverside County, and surrounding environs that support native habitats and plant and wildlife species. Development in the proposed Project area has substantially altered native habitats and adversely affected native plant and wildlife. Historic agricultural use and the expansion of urban areas in the region have resulted in the loss of open space and the degradation of natural areas that historically supported populations of unique or rare species and habitats. However, as described in Section 4.4, *Biological Resources*, a number of special-status plants and wildlife species have potential to occur in the proposed Project areas. In addition, native plant communities, riparian and wetland habitats that would support special-status species and other wildlife are present in the proposed Project areas. The Santa Ana River, also a jurisdictional resource, supports critical habitat for the federally listed Santa Ana Sucker and least Bell's vireo.

Development in Riverside and San Bernardino counties could potentially result in the loss of natural habitat and could directly and indirectly impact plant and wildlife species. The proposed Project would benefit local biological resources through the habitat restoration components of the overall program. The Arundo Removal project would increase the amount of habitat available for special-status species and wildlife linkages in the Santa Ana River Watershed which would be a cumulative benefit to the region. The Santa Ana sucker improvement component of SARCCUP lead by SBVMWD would benefit the endangered fish.

The proposed Project's contribution to impacts to biological resources would be minimal. Mitigation Measures BIO-1 through BIO 11 would reduce the proposed Project's contribution to biological resource impacts through focused surveys, implementation of avoidance measures, preconstruction surveys, worker awareness training and BMPs. The majority of projects listed in Table 6-1 are located in areas that are already substantially developed, or the sites have previously been altered due to grading or agricultural practices, and would not contribute significantly to direct impacts to biological resources.

Impacts from cumulative groundwater extraction could lower groundwater levels in areas with groundwater-dependent ecosystems, such as the Prado Basin and lower reaches of the Santa Ana River. Groundwater upwelling and areas of shallow groundwater support riparian vegetation throughout the region. Lowering of groundwater levels could adversely affect these resources. However, the primary objective of the proposed Project is to store up to 180,000 acre-feet within the existing groundwater basins, adding water to the existing storage that will raise groundwater levels during wet years. Groundwater extraction during dry years could lower groundwater levels to current levels or lower. Each partner agency would be responsible for ensuring that increased extraction capacities would not affect groundwater-dependent ecosystems. Within adjudicated basins, groundwater levels will be managed through the court-ordered watermasters to operate groundwater extraction within the parameters of the adjudications. Furthermore, the Sustainable Groundwater Management Act (SGMA) will require that groundwater basins subject to SGMA be managed to avoid undesirable effects including adverse impacts to groundwater dependent ecosystems.

In recognition of the regional scope of SARCCUP, the program includes two habitat improvement projects in an effort to contribute to the advancement of other beneficial uses identified in the Basin Plan. The *Arundo donax* removal program would serve to improve habitat values and functions within the Santa Ana River channel while simultaneously increasing water supply availability by up to an estimated 12,500 AFY. In addition, the Santa Ana sucker habitat improvement projects would restore habitat values and functions in specific local waterways consistent with the proposed Upper Santa Ana Habitat Conservation Plan currently under preparation. SARCCUP allows for funding of these programs that benefit the cumulative condition of biological resources in the region. As a result of these habitat improvement projects, when considered in addition to the anticipated impacts of other SARCCUP projects and county General Plan growth projections in the cumulative scenario, the SARCCUP projects' incremental contribution to biological resources impacts would not be cumulatively considerable.

Mitigation Measures

Implementation of Mitigation Measures BIO-1 through BIO-11 is required.

Significance Determination: Less than Significant with Mitigation

6.3.5 Cultural Resources

Impact CUM 6-5: Concurrent construction and operation of the SARCCUP projects, combined with other planned regional projects in the geographic scope could result in cumulative long-term impacts to cultural resources.

The geographic scope for potential cumulative impacts to cultural resources comprises the cities of Montclair and Riverside, as well as unincorporated portions of Riverside County. As described in Section 4.5, *Cultural Resources*, cultural resources were identified near the proposed Projects. In addition, there exists the potential for previously unknown archeological and paleontological resources to underlie the Proposed Program components. Mitigation Measures CUL-1 through CUL-9 have been developed to ensure less than significant impacts to cultural resources.

Each of the local jurisdictions within the SARCCUP area have identified policies and objectives within their General Plans that provide objectives for protecting significant resources. The General Plans acknowledge that continued development in the region will result in impacts to cultural and tribal resources through ground disturbing activities. As described in each of the local General Plans' policies require careful planning, monitoring, and curation of sensitive materials. The SARCCUP projects would be consistent with these policies and would not add considerably to the impact.

Similarly, excavation has the potential to impact paleontological resources and/or unique geologic features. Mitigation imposed for the SARCCUP projects would be consistent with local General Plan goals and policies and impacts would not be cumulatively considerable.

Mitigation Measures

Implementation of Mitigation Measures CUL-1 through CUL-9 is required.

Significance Determination: Less than Significant with Mitigation

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6.3.6 Geology, Soils, and Seismicity

Impact CUM 6-6: Concurrent construction and operation of SARCCUP projects, combined with other planned regional projects in the geographic scope could result in cumulative short-term and long-term impacts to geology, soils, and seismicity.

The geographic scope for potential geology-related impacts includes the proposed Project facility sites. Geology in the Santa Ana River Watershed is composed of ancient igneous, metamorphic and sedimentary rock. Most of the strata in the flat valleys and basins of the watershed are underlain by thousands of feet of sediment deposited by shallow seas that covered parts of Southern California in ancient times. A majority of the Proposed Program area is generally flat and composed of varying degrees of sandy to silty loam soils. None of the project facilities would be located within an Alquist-Priolo Fault Zone and thus not located adjacent to an active fault that

would be susceptible to fault rupture. However, the entire project area lies within a region that is seismically active. Multiple potentially active and active faults are located near the project areas; the closest fault to the project area is the Chino Fault, located south west of the Arundo removal site in the Santa Ana River. Additionally, portions of the SARCCUP project area may contain shallow groundwater with high liquefaction potential. As described in Section 3.6, Geology, Soils, and Seismicity, construction of the proposed Project facilities could result in short-term soil erosion and topsoil loss. Permanent subsidence could occur naturally based on geological movement of the Chino fault, and could become exacerbated by the extraction of groundwater that is proposed by SARCCUP. Seismic ground shaking and liquefaction could affect the integrity of above ground structures and underground pipelines.

SARCCUP projects listed in Table 6-1 involve construction of similar facilities as the proposed project. Standard practices required in the preparation of site-specific geotechnical investigations and incorporation of structural recommendations into facility designs, would reduce potential impacts from geologic hazards, and would ensure consistency with local General Plan goals and policies regarding geologic hazards management. SARCCUP would not increase the risk of unstable geology or seismic hazards for other neighboring land uses considering the required geotechnical investigations. Additionally, BMPs would help reduce impacts related to erosion by requiring inactive stockpiles project sites to be secure. Given site-specific geologic investigations prior to construction, SARCCUP projects would not increase hazards of landslides, lateral spreading, or soil instability that results in subsidence or collapse. When added to the cumulative scenario, the effects of the SARCCUP projects would not contribute incrementally to the cumulative impacts related to geologic hazards and soils.

Significance Determination: Less than Significant

6.3.7 Greenhouse Gas Emissions and Energy

Impact CUM 6-7: Concurrent construction and operation of the SARCCUP projects, combined with other planned regional projects in the Climate Change scope could result in cumulative long-term impacts to GHG emissions and energy.

The geographic scope for greenhouse gas emissions is global. The geographic scope for energy includes the service areas for the energy providers within the proposed Project area. Please refer to Section 4.7, *Greenhouse Gas Emissions and Energy*, for a cumulative analysis of GHG impacts, which are by definition cumulative.

Although SARCCUP projects would involve the use of increased electricity and fuel during construction and operation, the amounts would be accommodated by existing service providers and would result in a minimal increase in gas and diesel demand compared to the State's annual fuel usage program. When combined, all of the projects identified within Table 6-1 could cumulatively contribute to energy use in the service areas. Additionally, growth projections for

Riverside and San Bernardino counties indicate the region's population could double within two decades.

SARCCUP would not add a considerable amount of GHG emissions to the region. Groundwater pumping and conveyance require energy, intermittently. Given the projected growth in the project areas and the minimal increase in fuel use during construction and operation of SARCCUP projects, energy consumption resulting from construction and operation of SARCCUP would not substantially contribute to an increase in energy use or GHG emissions in the region.

Significance Determination: Less than Significant

6.3.8 Hazards and Hazardous Materials

Impact CUM 6-8: Concurrent construction of the SARCCUP projects, combined with other planned regional projects in the geographic scope could result in cumulative short-term impacts to hazards and hazardous materials.

The geographic scope for potential hazard and hazardous material-related impacts includes the proposed Project facility locations, the immediate area surrounding these locations and project locations within 0.25 mile of a school. Three airports and ten schools are located within 0.25 mile of proposed Project locations. As described in Section 4.8, *Hazards and Hazardous Materials,* construction of the proposed facilities would occur within or adjacent to roadways, which could affect ingress and egress such that an emergency response plans would be impacted. The records search indicates there are hazardous waste sites near the projects. During project construction, it is possible that contaminated soil and groundwater could be encountered during excavation, thereby posing a health threat to construction workers, the public, and the environment.

Construction of SARCCUP projects listed in Table 6-1, combined with other construction projects in the geographic scope, would temporarily require the transport, use, and disposal of hazardous materials including gasoline, diesel fuel, hydraulic fluids, paint, and other similarly related materials. The minimal risk of hazards and hazardous materials imposed by the project would not add substantially to the cumulative condition. All SARCCUP projects would be required to comply with applicable federal, state, and local regulations regarding the handling, storage, transportation, and disposal of hazardous materials. Compliance with regulations concerning hazardous materials minimizes the cumulative impact. Therefore, when considered in addition to the anticipated impacts of other projects in the cumulative scenario, SARCCUP's incremental contribution to hazards and hazardous materials related impacts would not be cumulatively considerable.

Mitigation Measures

Implementation of Mitigation Measure HAZ-1 is required.

Significance Determination: Less than Significant with Mitigation

6.3.9 Hydrology and Water Quality

Impact CUM 6-9: Concurrent construction and operation of the SARCCUP projects, and related projects in the geographic scope could result in cumulative short-term and long-term impacts to hydrology and water quality.

The geographic scope for potential hydrology and water quality impacts includes the combined service areas of the partner agencies. Implementation of SARCCUP would increase DYY storage within each of the groundwater basins and would facilitate water extraction and conveyance capacities to meet the local water demands as determined through regional coordination and projected in the Decision Support Model. Local surface water resources would not be impacted by the implementation of SARCCUP. The project would improve water supply reliability. Surface water quality would not be affected since the program would not impact surface water resources.

Construction of the SARCCUP projects could result in increased erosion potential from exposed soil areas, which can contribute to sediment-laden runoff into local drainage courses. Erosion can be destructive to the immediate area and sedimentation can clog downstream waterways or otherwise adversely affect water quality. However, all construction associated with the SARCCUP projects would meet federal, state, and local permit requirements, especially the MS4 permit and NPDES Construction General Permit requirements. As a result, the incremental contribution to water quality impacts from construction of the SARCCUP projects would not be considerable.

When considered with the other cumulative SARCCUP projects and planned growth in the region, potentially significant cumulative impacts to water quality could occur from changes in groundwater levels. The goal of increasing local groundwater supplies by a combined 180,000 acre-feet would result in higher groundwater levels during wet years and potentially lower levels during dry years when the DYY storage is accessed. Increased groundwater recharge could elevate groundwater levels that could adversely affect shallow underground infrastructure such as building and bridge foundations and underground storage tanks. In addition, rising groundwater levels may entrain legacy contaminants in shallow soils such as volatile organics, petroleum hydrocarbons, or nitrates. Furthermore, rising groundwater levels and additional groundwater extraction capacity could affect local contamination plumes such that existing remediation efforts could be adversely affected. Substantial legacy contamination constrains areas of the Bunker Hill Subbasin, Chino Basin, and Orange County Basin. Groundwater remediation efforts have been implemented in each basin, administered through the overlying management agencies in coordination with the Santa Ana Regional Water Quality Control Board.

In addition, lowering groundwater levels could affect local pumpers by increasing pumping lift costs and energy use. Shallow wells such as private wells could be affected if groundwater levels dropped below the pumping depths.

These potentially significant cumulative impacts to groundwater quality and availability would be avoided through effective groundwater monitoring and management. SARCCUP would be implemented within the context of existing groundwater management constraints and opportunities. Most of the groundwater basins to be used in SARCCUP are adjudicated and overseen by Watermasters. In addition, each of the partner agencies are also the groundwater management agencies for the respective basins and have prepared Groundwater Management Plans that establish operating guidelines and impact avoidance measures to ensure optimization of the storage capacities and water quality protection. Minimization of the groundwater impacts outlined above is the responsibility of each of the partner agencies under existing conditions. Cumulative groundwater impacts associated with SARCCUP similarly would be managed through each partner agency. The following sections describe these groundwater management responsibilities.

Integrated Regional Water Management

SARCCUP is a component of Integrated Regional Water Management planning administered by the California Department of Water Resources on a state-wide scale. According to DWR, "Integrated Regional Water Management (IRWM) is a collaborative effort to identify and implement water management solutions on a regional scale that increase regional self-reliance, reduce conflict, and manage water to concurrently achieve social, environmental, and economic objectives. This approach delivers higher value for investments by considering all interests, providing multiple benefits, and working across jurisdictional boundaries. Examples of multiple benefits include improved water quality, better flood management, restored and enhanced ecosystems, and more reliable surface and groundwater supplies."[1]

Santa Ana Watershed Project Authority

Established in 1974, the Santa Ana Watershed Project Authority (SAWPA) is the designated Regional Water Management Group (RWMG) for the Santa Ana River Watershed, and the one DWR-recognized IRWM region within the watershed. SAWPA is a Joint Powers Authority focusing on a broad range of water resource issues including water supply reliability, water quality improvement, recycled water, wastewater treatment, groundwater management, brine disposal, and integrated regional planning. Its stated mission is to develop and maintain regional plans, programs, and projects that will protect the Santa Ana River basin water resources to maximize beneficial uses within the watershed in an economically and environmentally responsible manner.

SAWPA is composed of its five member agencies: EMWD, Inland Empire Utilities Agency (IEUA), Orange County Water District (OCWD), SBVMWD, and WMWD. The jurisdiction of SAWPA and its member agencies spans approximately 2,800 square miles of the Santa Ana Watershed encompassing much of Orange County, a sliver of Los Angeles County, and the major population centers of western Riverside and southwestern San Bernardino Counties. Each of these agencies plans and executes long-term projects and management programs of their own; however, it primarily is the agencies working through SAWPA that provide the vehicle for

[1] https://water.ca.gov/Programs/Integrated-Regional-Water-Management. Accessed 7/22/18.

effective and concerted planning efforts on a regional basis Using the objectives as overarching guiding principles, SAWPA has developed a number of high-level strategies, which include:

- Increased storage
- Reduced demand
- Groundwater desalination
- Water recycling
- Consideration of stormwater as a water supply
- Valuing water differently
- Maximizing preservation and use of native plants
- Developing risk-based water quality improvements
- Incorporating integrated water planning in General Plans
- Managing public property for more than one use
- Creating watershed governance
- Implementing watershed-wide education programs

SAWPA implements these management strategies as the RWMG. To assist in effectively implementing these goals and objectives, SAWPA has prepared the One Watershed One Water plan to implement IRWM goals and objectives in the Inland Empire.

Sustainable Groundwater Management Act

In 2014, the California Sustainable Groundwater Management Act (SGMA) was passed. The goal of SGMA is sustainable groundwater management, which is defined as the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results. **Table 6-2** below lists the criteria that would result in undesirable results within a groundwater basin.

TABLE 6-2
SUSTAINABLE GROUNDWATER MANAGEMENT ACT UNDESIRABLE RESULTS

SGMA Undesirable Results Criteria	
1)	Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.
2)	Significant and unreasonable reduction of groundwater storage.
3)	Significant and unreasonable seawater intrusion.
4)	Significant and unreasonable degraded water quality, including the migration of contamination plumes that impair water supplies.
5)	Significant and unreasonable land subsidence that substantially interferes with surface land uses.
6)	Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

SGMA provides authority for agencies to develop and implement groundwater sustainability plans (GSP) or alternative plans that demonstrate the basin is being managed sustainably. On January 1, 2017, the Orange County Water District, City of La Habra, and Irvine Ranch Water District submitted the Basin 8-1 Alternative to the California Department of Water Resources.

Since the San Jacinto Basin Groundwater Basin and the Upper Santa Ana Valley Basin are adjudicated, they exempt from SGMA. Valley District has petitioned to redefine the boundaries of the subbasins in the Upper Santa Ana Valley Basin to better reflect the management of the resource and is in the process of coordinating the establishment of a GSA in partnership with IEUA and WMWD to best implement the goals and objectives of SGMA.

The Elsinore Basin has been designated as a Priority Basin under SGMA by DWR. As a result, EVMWD has initiated the process of establishing a GSA and preparing a GSP. Prior to the establishment of a GSA, EVMWD petitioned to redefine the basin boundaries to better reflect the current management and use of the groundwater resources in the region.

Chino Basin

The Chino Basin Watermaster was established in 1978 by a Superior Court Judgement which adjudicated the groundwater rights in the Chino Basin. The Judgement mandated that the Chino Basin Watermaster develop the Optimum Basin Management Plan (OBMP) which established management goals to address issues, needs and interests of water producers in the Chino Basin. Management of the Chino Basin is now guided by the "Peace II Agreement" which requires the Chino Basin Watermaster to update the OBMP every five years in order to effectively protect and enhance the safe yield of the Chino Basin through replenishment and recharge.

The Chino Basin Watermaster has assigned pumping rights within the Chino Basin to agricultural, industrial and municipal users (IEUA 2016). The safe yield for the Chino Basin as designated by the Watermaster is 140,000 acre-feet per year (Chino Basin Watermaster 2015). The safe yield assignment limits groundwater pumping for all of the overlying pumping rights.

The Chino Basin Watermaster initiated a groundwater-level monitoring program as part of the implementation of the OBMP. Currently, the groundwater-level monitoring program consists of 1,000 wells. Water levels are measured by municipal water agencies, the California Department of Toxic Substances Control (DTSC), San Bernardino County, and various private consulting firms at approximately 800 of those wells. The remaining 200 wells are measured by the Chino Basin Watermaster once per month. These 200 wells are primarily located near existing agricultural areas (Chino Basin Watermaster 2013b).

Cucamonga Basin

The Cucamonga Basin is a subbasin at the northern edge of the Chino Groundwater Basin. It is separated from Chino Basin to the south by the Redhill Fault. The San Gabriel Mountains for the norther boundary. The subbasin was adjudicated in 1958 and currently provides a portion of the potable water demands for the overlying cities. The subbasin is recharged through local streams and spreading operations.

Arlington – Riverside Basin

The Riverside-Arlington Subbasin underlies part of the Santa Ana River Valley in northwest Riverside County and southwest San Bernardino County. This subbasin is bound by impermeable rocks of Box Springs Mountains on the southeast, Arlington Mountain on the south, La Sierra Heights and Mount Rubidoux on the northwest, and the Jurupa Mountains on the north. The northeast boundary is formed by the Rialto-Colton fault. The Santa Ana River flows over the northern portion of the subbasin.

Groundwater extractions within the Arlington-Riverside Subbasin are managed by the Western-San Bernardino Watermaster established in 1969 as a result of the final Judgement Provisions of the physical solution set forth in the Judgment in Case No. 78426, *Western Municipal Water District of Riverside County et al., vs. East San Bernardino County Water District et al.*, entered April 17, 1969, in the Superior Court of the State of California in and for the County of Riverside. The Judgement established the entitlements and obligations of the WMWD and Valley District in managing the San Bernardino, Colton, and Riverside groundwater basins. The Watermaster prepares annual reports that outline annual extractions within each of the subbasins and manages a groundwater monitoring network that ensures groundwater levels are managed to avoid adverse effects.

Upper Santa Ana Valley Groundwater Basin

The Upper Santa Ana Valley Groundwater Basin underlies portions of the City of San Bernardino northeast of the Chino Basin. The Bunker Hill Subbasin is designated by the California Department of Water Resources as a high-priority basin (DWR 2014a). Three water-bearing zones (the upper, middle, and lower) and three confining members (the upper, middle, and lower) have been defined in the subbasin and are within the uppermost 1,000 feet of unconsolidated deposits below the San Bernardino Valley. Groundwater extraction from the basin is managed by the Western-San Bernardino Watermaster.

Elsinore Basin

The Elsinore Valley Municipal Water District (EVMWD) provides water service to a 96-square-mile area in western Riverside County. The EVMWD currently delivers a combination of local groundwater, local surface water and imported water purchased from the Metropolitan Water District of Southern California to meet the water demands of its customers. The EVMWD has prepare a groundwater management plan to ensure impacts to groundwater levels and water quality do not become significant. The primary objective of the groundwater management plan is to enhance the yield and improve the water supply reliability of the Elsinore Basin. The goals for the groundwater management plan are:

- To develop a thorough understanding of the basin's hydrogeologic characteristics.
- To enhance the yield and reliability of the groundwater supply. The basin is a major source of water supply for the EVMWD. However, the EVMWD is also dependent on imported water for a portion of its water supply. As growth occurs, dependence on imported water will increase. During droughts, the EVMWD could be subject to cutbacks in imported water deliveries. Therefore, enhanced basin reliability through conjunctive use will be vital.

- To protect and enhance the water quality of the basin.
- To provide an equitable basis for financing basin management activities. Although the District is the principal groundwater producer in the Elsinore Basin, other groundwater producers would benefit from the development of a management plan.

San Jacinto Groundwater Basin

The San Jacinto Groundwater Basin consists primarily of alluvial and fluvial sedimentary deposits containing coarse-grained sand and gravel deposits as well as finer-grained silt and clay layers. The alluvial aquifer valleys are bounded by lower permeability, primarily crystalline and sedimentary rocks of the San Jacinto Mountains on the east, the San Timoteo Badlands on the northeast, the Box Mountains on the north, the Santa Rosa Hills and Bell Mountains on the south, and unnamed hills west of Mead Valley and Perris. The basin is essentially closed, without significant groundwater inflow or outflow to or from other groundwater basins. Several bedrock hills and ranges are present within the basin, separating the alluvial aquifer into different "compartments" or subareas. There are eight Groundwater Management Zones covering these subareas within the larger San Jacinto Groundwater Basin. The proposed program and proposed Project area is located within the Upper Pressure Area Management Zone, in the eastern portion of the basin.

Groundwater production is limited to the Sub Basin, which has been adjudicated and is managed by the Watermaster. A Stipulated Judgment (*Eastern Municipal Water District v. City of Hemet, City of San Jacinto, Lake Hemet Municipal Water District, et al*. filed: Riverside County Superior Court Case No. RIC 1207274 dated: April 18, 2013) formed the Watermaster and describes the limitations on groundwater production by the EMWD and others. The Watermaster is implementing a Water Management Plan (WMP), in accordance with the Stipulated Judgment, to address overdraft within the adjudicated area. The EMWD is a party to the Watermaster and is a signatory to the WMP. The Watermaster also performs annual monitoring and reporting on the Sub Basin to track water levels, extractions, and water quality.

Orange County Groundwater Basin

The Orange County Groundwater Basin is managed by the OCWD. The OCWD was organized in 1933 with the passage of SB 1201. The mission of the new District was management and protection of the Orange County groundwater basin supply. Management of the basin was to include protection of groundwater rights and water rights on the Santa Ana River, conservation of groundwater supplies (both quantity and quality), groundwater replenishment, and conservation of flood water and storm water for beneficial use in the basin.

OCWD adopted its first Groundwater Management Plan in 1989 and latest update in 2015. This plan sets forth basin management goals and objectives and describes how the basin is managed. This includes description of basin hydrogeology, water supply monitoring programs, management and operation of recharge facilities, water quality protection and management, and natural resource and collaborative watershed programs. Basin management goals are: (1) to protect and

enhance groundwater quality, (2) to protect and increase the sustainable yield of the basin in a cost-effective manner, and (3) to increase the efficiency of District operations.

The Santa Ana River Watermaster oversees surface water resources within the upper and lower Santa Ana River as required by the Stipulated Judgment (Judgment) in the case of *Orange County Water District v. City of Chino, et al.*, Case No. 117628-County of Orange. The Watermaster annually compiles the basic hydrologic and water quality data necessary to determine compliance with the provisions of the Judgment. The data include records of stream discharge (flow) and quality for the Santa Ana River at Prado Dam and at Riverside Narrows as well as discharges for most tributaries; flow and quality of nontributary water entering the River; rainfall records at locations in or adjacent to the Watershed; and other data that may be used to support the determinations of the Watermaster. Water deliveries to OCWD from the upper watershed would be subject to the Watermaster's oversight.

Summary

In summary, implementation of SARCCUP would contribute to cumulative groundwater quality and availability impacts associated with the increased storage and extraction capacities needed to effectively implement the program. To avoid or minimize these regional effects each partner agency would implement groundwater management actions that would reduce potential impacts in conformance with overarching regulations, adjudications, and management plan commitments. The Upper Santa Ana River Watershed has engaged in integrated regional water management since 1974 with the establishment of SAWPA. Many of the groundwater and surface water resources were adjudicated in the late 1960s to establish regional, fair practices that effectively manage the shared regional resources to minimize the undesirable effects that have now become the focus of overarching SGMA regulations. As a result, given the historic practices and ongoing integrated management framework in place in the watershed, implementation of SARCCUP would not contribute significantly to cumulative groundwater impacts.

Significance Determination: Less than Significant

6.3.10 Land Use and Planning

Impact CUM 6-10: Concurrent construction and operation of the SARCCUP projects, combined with other planned regional projects in the geographic scope could result in cumulative short-term and long-term impacts to land use and planning.

The geographic scope for potential cumulative impacts to land use and planning includes the cities of Montclair and Riverside and the surrounding portions of unincorporated Riverside County. Land use designations within the proposed Project areas include various types and densities of residential uses, commercial uses, mixed-use, rural community and residential uses, industrial uses, public institutional uses, agriculture uses, and open space. Zoning designations within the geographic scope include, but are not limited to, rural residential areas, agricultural

designations, general commercial designations, residential designations, Specific Plan designations, and open space recreation. As discussed in Section 3.10, Land Use and Planning, the majority of the proposed Project facilities would be installed underground. However, the aboveground facilities may conflict with the urban character of the surrounding communities.

Construction of SARCCUP projects listed in Table 6-1, combined with other construction projects in the geographic scope, would be consistent with the existing General Plan land use designations and applicable Zoning Ordinance designations established by each applicable jurisdiction. Each jurisdiction reviews all developments to ensure consistency with the policies of its General Plan and Zoning Ordinances. The purpose of SARCCUP is to improve water reliability, and as a result, would not cause land use conflicts but would instead support land use and planning within the region. However, to avoid conflict with neighboring land uses, SARCCUP aboveground facilities would be integrated into the existing urban character of the surrounding community through building design and with landscaping features. SARCCUP project facilities have no potential to create a barrier or physically divide an established community. Further, California Government Code Section 53091(d)(e) specifies that water supply facilities such as those associated with the proposed Project are exempt from zoning restrictions. Building ordinances of local cities or counties do not apply to the location or construction of facilities for the projection, generation, storage, treatment, or transmission of water or wastewater. Therefore, when considered in addition to the county growth projections, SARCCUP's contribution to land use and planning would not be cumulatively considerable.

Significance Determination: Less than Significant

6.3.11 Noise

Impact CUM 6-11: Concurrent construction of SARCCUP projects, combined with other planned regional projects in the geographic scope could result in cumulative short-term and long-term impacts related to noise.

The geographic scope for potential cumulative impacts related to noise includes sensitive receptors in the vicinity of proposed Project sites. The proposed Project sites are located within the Cities of Montclair and Riverside, and portions of unincorporated Riverside County. As described in Section 4.11, *Noise*, the construction of monitoring and extraction wells would require drilling for 1 to 2 weeks each, potentially in close proximity to residential areas. Noise from construction activities would be generated by vehicles and equipment involved during various stages of construction: grading/drilling, excavation, building construction, and street restoration. Except for the Arundo Removal project, construction of the proposed facilities would occur in highly urbanized environment that includes major roadways. Additionally, operation of new facilities would generate permanent new noises at the pump station and extraction wells.

Projects in the cumulative scenario listed in Table 6-1 could generate noise that would temporarily increase existing ambient noise conditions. Construction noise would be localized,

affecting areas in the immediate vicinity of construction sites. For some SARCCUP projects in the future, these temporary construction impacts could be significant and unavoidable for the local area of affect. However, the five projects evaluated in this EIR would not result in direct significant noise impacts, nor would these five projects contribute significantly to the combined noise impacts of the other SARCCUP projects. Similarly, although other development projects in the region may result in significant localized noise impacts, the five projects analyzed in this EIR would not contribute significantly to these effects.

To ensure that noise impacts would not result in cumulatively significant nuisances or violations of local General Plans and noise ordinances, Mitigation Measure NOISE-1 would require that contractors minimize noise levels. Mitigation Measure NOISE-2 would require that contractors establish a construction relations officer to ensure that any nuisance noises are minimized. With incorporation of Mitigation Measure NOISE-1 temporary construction noise levels would not exceed the 90 dBA Leq thresholds. Once in operation, all equipment would be enclosed within concrete block buildings and would be designed to meet acoustic performance criteria that would comply with the local ambient noise standards at the facility fence-line. With implementation of mitigation, construction noise impacts would be reduced to less than significant. Therefore, construction and operational noise level increases associated with the five projects analyzed in this EIR would not contribute significantly to cumulative noise impacts.

Mitigation Measures

Implementation of Mitigation Measures NOISE-1 and NOISE-2 is required.

Significance Determination: Less than Significant with Mitigation

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6.3.12 Public Services

Impact CUM 6-12: Concurrent construction and operation of the SARCCUP projects, combined with other planned regional projects in the geographic scope could result in a short-term cumulative effects to public services.

The geographic scope for public services is the cities of Montclair and Riverside, portions of unincorporated Riverside County, and associated fire and police protection, schools, hospitals, parks and recreational facilities that constitute public services in the area. As described in Section 4.14, *Public Services*, implementation of the proposed Project would not involve construction or operation of new residential or commercial uses that would increase the need for fire or police protection services or increase the usage of schools, libraries, hospitals, parks or recreational facilities.

SARCCUP facilities would not increase the need for additional public facilities and would not significantly impact recreational uses. SARCCUP would not contribute to cumulative impacts related to public services.

Significance Determination: Less than Significant

6.3.13 Traffic and Transportation

Impact CUM 6-13: Concurrent construction of the SARCCUP projects, combined with other planned regional projects in the geographic scope could result in cumulative short-term impacts to traffic and transportation.

The geographic scope for potential cumulative impacts to traffic and transportation is the regional and local roadways within the cities of Montclair and Riverside, and portions of unincorporated Riverside County. This includes public rights-of-way and bike paths. As discussed in Section 4.15, *Traffic and Transportation*, construction activities would temporarily generate additional truck and vehicle trips on the regional and local roadways, which could result in slightly increased delay times on roadways. Construction of the proposed Projects would also involve temporary lane closures which could delay emergency vehicle response times or otherwise disrupt delivery of emergency services that use the regional and local roadways. Mitigation Measure TT-1 requires the preparation and implementation of a Traffic Control Plan, which would reduce all effects to the regional and local circulation system, including existing transit routes, bicycle lanes, and emergency response access, during lane closures to a less than significant level.

SARCCUP projects listed in Table 6-1 would contribute to truck and vehicle trips on the regional and local circulation systems. Local General Plans identify impacts to traffic and transportation from local development. Once operational, the SARCCUP facilities would not contribute to traffic and congestion. Therefore, SARCCUP's contribution to cumulative impacts to traffic and transportation would not be cumulatively considerable.

Mitigation Measures

Implementation of Mitigation Measure TT-1 is required.

Significance Determination: Less than Significant with Mitigation

6.3.14 Utilities and Service Systems

Impact CUM 6-14: Concurrent construction and operation of SARCCUP projects, combined with other planned regional projects in the geographic scope, could result in cumulative short-term and long-term impacts to utilities and service systems.

The geographic scope for public services is the cities of Montclair and Riverside, portions of unincorporated Riverside County, and associated fire and police protection, schools, hospitals, parks and recreational facilities that constitute public services in the area. As discussed in Section 4.17, *Utilities and Service Systems*, the proposed Project would not require treatment of

wastewater, and would thus not result in significant impacts related to an exceedance of wastewater treatment requirements or wastewater treatment facility capacity. The proposed Project would increase water supply reliability and would not generate new water demand.

Local General Plans have identified projected growth in Riverside and San Bernardino counties that will increase the need for public utilities and services. SARCCUP projects would act to offset impacts to the region's water supplies which would increase regional water reliability. SARCCUP's incremental contribution to utilities impacts would not be cumulatively considerable.

Significance Determination: Less than Significant

CHAPTER 7
Alternatives

7.1 Overview of Alternatives Analysis

In accordance with *CEQA Guidelines* (Section 15126.6), an EIR must describe and compare a range of reasonable alternatives to a project, or alternative locations for a project, that could feasibly attain most of the basic project objectives but avoid or substantially lessen any significant environmental impacts associated with the project. An EIR must consider a reasonable range of feasible alternatives to facilitate informed decision making and public participation. An EIR need not consider every conceivable alternative to a project and is not required to consider alternatives which are infeasible. The lead agency shall select a range of project alternatives and disclose its reasoning for selecting those alternatives. The selection of such alternatives is governed only by the rule of reason, as described further below.

7.1.1 Selection of a Range of Reasonable Alternatives

Because an EIR must identify ways to mitigate or avoid significant environmental effects of a project, the analysis of alternatives shall focus on alternatives that are capable of avoiding or substantially lessening one or more significant environmental effects (*CEQA Guidelines* Section 15126.6[b]). The EIR must explain the rationale for selecting the alternatives to be evaluated and identify alternatives that were considered but rejected (*CEQA Guidelines* Section 15126.6[c]). The lead agency is required to explain the reasons for rejecting alternatives. The factors that may be used to eliminate alternatives from detailed consideration in an EIR include, but are not limited to, the following: (1) failure to meet most of the basic project objectives, (2) inability to avoid significant environmental impacts, and (3) infeasibility. When considering the feasibility of an alternative, the following factors may be considered: site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the ability to reasonably acquire, control, or otherwise have access to the alternative site (*CEQA Guidelines* Section 15126.6[f][1]).

7.1.2 Evaluation of Alternatives

An EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project (*CEQA Guidelines* Section 15126.6[d]). The environmental impacts associated with the alternatives are evaluated relative to the impacts associated with the proposed project. A matrix can be used to summarize and compare the major characteristics and significant environmental effects of each alternative. If an alternative would cause additional significant effects, in addition to those caused by the proposed

project, they are required to be discussed but in less detail than the significant effects of the proposed project.

Section 15126.6(e)(1) of the *CEQA Guidelines* requires that a no project alternative be addressed in this analysis. The purpose of evaluating a no-project alternative is to allow decision-makers to compare the potential consequences of the project with the consequences that would occur without implementation of the project. An EIR must also identify the environmentally superior alternative. A no-project alternative may be environmentally-superior to the project based on the minimization or avoidance of physical environmental impacts. However, a no-project alternative must also achieve the project objectives in order to be selected as the environmentally-superior alternative. Section 15126.6(e)(2) of the *CEQA Guidelines* requires that if the environmentally superior alternative is the no-project alternative, an EIR shall identify an environmentally superior alternative among the other alternatives.

7.2 Proposed Project Summary

7.2.1 SARCCUP Objectives

As stated earlier in Chapter 2, the partner agencies currently rely on water imported from the Sacramento-San Joaquin Bay Delta (Delta) and the Colorado River Aqueduct (CRA) to meet demands within their service areas. Currently, the agencies rely on imported water at the following percentages: IEUA – 25 percent; EMWD – up to 75 percent; SBVMWD – 25 percent; WMWD – 25 percent; OCWD – 15 to 30 percent. The curtailment of imported supplies from the Delta due to natural or manmade interruptions has the potential to impact water supply reliability in the Santa Ana River watershed. The following are SARCCUP objectives to address reliability:

> SARCCUP would increase Dry Year Yield (DYY) from local groundwater basins in the watershed to offset future reductions in water supply, whether due to climate change or natural or manmade supply cutbacks.
>
> SARCCUP activities support the goals of the One Water One Watershed 2.0 Plan (2014), which is the Santa Ana River Watershed's Integrated Regional Watershed Management Plan (IRWMP).

For a resilient water supply and use in the watershed, a balance is also needed to improve native species' population and habitat in the Santa Ana River. Invasive plants such as *Arundo donax* use significantly more water than native plant species and have aggressively altered the habitat for endemic fish species, such as the Santa Ana Sucker, by choking out conditions for spawning, foraging and refugia. Through SARCCUP's habitat improvements element, the Santa Ana sucker's habitat will more than double and the remaining *Arundo donax* in the Santa Ana River will be removed, reflected in the following Project objectives:

> SARCCUP would reduce water demand through removal of Arundo donax, a water intensive non-native, plant within the Santa Ana River Watershed
>
> SARCCUP would enhance the watershed environment through restoration of existing riparian habitat and creating new habitat for a federally listed native freshwater fish species, the Santa Ana sucker (Catostomus santaanae). This will also support and facilitate obtaining

permits from the state and federal wildlife agencies for water supply projects along the Santa Ana River.

7.2.2 Potentially Significant Impacts of the Proposed Project

Chapters 4, 5, and 6 provide analyses of potentially significant impacts that could result from implementation of the proposed Project. As summarized below in **Table 7-1,** the potentially significant and unavoidable impacts associated with the SARCCUP are to air quality as a result of construction equipment emissions, changes to historical resources as a result of ground disturbance during construction, and noise impacts associated with construction.

TABLE 7-1
SUMMARY OF PROGRAM IMPACT ANALYSIS

Issue Area	Significance Determination
Aesthetics	LTS
Agriculture and Forest Resources	LTS
Air Quality	LSM
Biological Resources	LSM
Cultural Resources	LSM
Geology, Soils, and Seismicity	LTS
Greenhouse Gas Emissions	LTS
Hazards and Hazardous Materials	LSM
Hydrology and Water Quality	LSM
Land Use and Planning	LTS
Mineral Resources	LTS
Noise	LSM
Population and Housing	LTS
Public Services	LTS
Traffic and Transportation	LSM
Tribal Cultural Resources	LSM
Utilities and Service Systems	LTS
Growth Inducement (Indirect)	LTS

LTS = Less than Significant
LSM = Less than Significant with Mitigation

SOURCE: ESA 2018.

7.3 Development of SARCCUP Alternatives

The SARCCUP partner agencies determined which projects or combination of projects would be most effective in meeting the goals of the program to result in mutual water supply reliability benefits. The process began with the definition of specific SARCCUP goals and the establishment of current facilities operations. A target of 180,000 AF of storage was identified as a target initially within the Chino, SBBA, San Jacinto, and Riverside basins. After receiving comments on the Notice of Preparation, the SARCCUP partner agencies transferred some of the storage capacity from the Chino Basin to the Orange County Basin. The project description provided in

Chapter 2 presents the proposed SARCCUP with storage capacity in the Orange County Basin and a reduced storage capacity in the Chino Basin compared to the project described in the NOP.

7.4 Project Alternatives

Three SARCCUP Project alternatives were selected for detailed analysis. The goal for evaluating these alternatives is to identify alternatives that would avoid or lessen the significant environmental effects of the program, while attaining most of the program objectives. As concluded in Chapter 4, the proposed projects would not result in any significant impacts. Nonetheless, this alternatives analysis has been prepared to evaluate other alternatives to compare with the proposed project.

The following sections provide a general description of each identified alternative, its ability to meet the Project objectives, and a discussion of its comparative environmental impacts. As provided in Section 15126.6(d) of the *CEQA Guidelines*, the significant effects of these alternatives are identified in less detail than the analysis of the program in Chapter 4 of this Draft EIR. **Table 7-2** provides a comparison of the alternatives with the Project. **Table 7-3** compares the alternatives with the Project objectives.

7.4.1 Alternative 1: No Project Alternative

An analysis of the No Project Alternative is required under CEQA Guidelines Section 15126.6(e). According to Section 15126.6(e)(2) of the *CEQA Guidelines*, the "no project" analysis shall discuss:

> *what is reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.*

The No Project Alternative represents a "no build" scenario in which the proposed project would not be constructed or operated. It assumes that all proposed Project facilities would not be implemented. Under the No Project Alternative, the SARCCUP partner agencies would continue operations of supplying water to customers using existing supply sources and infrastructure. There would be no increase in the use of groundwater banking and use to solve regional DYY water supply demands.

TABLE 7-2
SUMMARY OF IMPACTS OF ALTERNATIVES COMPARED TO THE PROJECT

Environmental Topic	Project	Alternative 1: No Project	Alternative 2: Increased Chino Groundwater Storage	Alternative 3: Decreased Groundwater Storage
Aesthetics	Less than Significant	Less	Similar	Similar
Agriculture and Forestry Resources	Less than Significant	Less	Similar	Similar
Air Quality	Less than Significant with Mitigation	Less	Similar	Similar
Biological Resources	Less than Significant with Mitigation	Greater	Similar	Similar
Cultural Resources	Less than Significant with Mitigation	Less	Similar	Similar
Geology, Soils and Seismicity	Less than Significant	Less	Similar	Similar
GHG Emissions	Less than Significant	Less	Similar	Similar
Hydrology and Water Quality	Less than Significant with Mitigation	Less	Similar	Similar
Hazards and Hazardous Materials	Less than Significant with Mitigation	Less	Similar	Similar
Land Use and Planning	Less than Significant	Less	Similar	Similar
Mineral Resources	Less than Significant	Less	Similar	Similar
Noise	Less than Significant with Mitigation	Less	Similar	Similar
Population and Housing	Less than Significant	Less	Similar	Similar
Public Services	Less than Significant with Mitigation	Less	Similar	Similar
Recreation	Less than Significant with Mitigation	Less	Similar	Similar
Transportation and Traffic	Less than Significant with Mitigation	Less	Similar	Similar
Tribal Cultural Resources	Less than Significant with Mitigation	Less	Similar	Similar
Utilities and Service Systems	Less than Significant	Less	Similar	Similar
Secondary Effects of Growth	Less than Significant with Mitigation	Less	Similar	Similar

TABLE 7-3
ABILITY OF ALTERNATIVES TO MEET PROJECT OBJECTIVES

Project Objectives	Project	Alternative 1: No Project	Alternative 2: Increased Chino Groundwater Storage	Alternative 3: Decreased Groundwater Storage
SARCCUP would increase DYY from local groundwater basins in the watershed to offset future reductions in water supply, whether due to climate change or natural or manmade supply cutbacks.	Yes	No	Yes	No
SARCCUP activities support the goals of the One Water One Watershed 2.0 Plan (2014), which is the Santa Ana River Watershed's Integrated Regional Watershed Management Plan (IRWMP).	Yes	No	Yes	No
SARCCUP would reduce water demand through removal of *Arundo donax*, a water intensive non-native, plant within the Santa Ana River Watershed	Yes	No	Yes	Yes
SARCCUP would enhance the watershed environment through restoration of existing riparian habitat and creating new habitat for a federally listed native freshwater fish species, the Santa Ana sucker (*Castostomus santaanae*). This will also support and facilitate obtaining permits from the state and federal wildlife agencies for water supply projects along the Santa Ana River.	Yes	No	Yes	Yes

7.4.2 Alternative 2: Additional Chino Basin Groundwater Storage

Alternative 2 would transfer OCWD's 36,000 AF storage capacity to Chino Basin to maintain the total storage capacity goal of the Project at 180,000 AF without utilizing the Orange County Groundwater Basin. Alternative 2 would require additional construction and operation of groundwater recharge infrastructure to accommodate the additional storage, pumping and movement of 36,000 AF, bringing the total groundwater storage of the Chino Basin to 86,000 AF. The increased storage capacity would result in an increase in storage and extraction from the Chino Basin in excess of current storage and extraction limitations imposed by the Chino Basin Watermaster.

7.4.3 Alternative 3: Reduced Chino Basin Groundwater Storage

Alternative 3 considers a reduction of 36,000 AF of storage capacity from the SARCCUP program resulting in a reduced capacity of 144,000 AF. Under this alternative, SARCCUP would not utilize storage capacity in the Orange County Basin. Alternative 2 would require similar construction and operation of groundwater recharge infrastructure. However, the total groundwater storage capacity would be reduced to 144,000.

7.5 Impact Analysis

7.5.1 Alternative 1: No Project Alternative

The No Project Alternative would avoid construction activity compared to the Project. Impacts associated with siting of new permanent project components would be avoided with the No Project Alternative. However, without the dry year water supply benefits of SARCCUP, each of the partner agencies would plan other means of improving dry year water supplies that could result in significantly larger water storage infrastructure projects. The relative difference in environmental impacts associated with the No Project Alternative when compared to the Project is provided below.

Aesthetics

The Project would result in a less than significant impact to aesthetics with mitigation. Under Alternative 1, the Project area would remain the same as under existing conditions, retaining the current visual character. No views would be altered. Additionally, no new sources of light and glare would be created. Therefore, this alternative would have no impacts on aesthetics, and would have fewer impacts compared to the Project.

Agriculture and Forestry Resources

The Project would result in less than significant impacts to agriculture and forestry resources. Alternative 1 would result in no impacts to agriculture and forestry similar to the proposed project.

Air Quality and Greenhouse Gas Emissions

Under Alternative 1, there would be no construction-related emissions (from construction activities, vehicles and equipment). The Project's short-term construction emissions would not occur under this alternative. As a result, Alternative 1 would result in fewer impacts compared to the Project.

Biological Resources

The Project would result in less than significant impacts to biological resources with mitigation. Under Alternative 1, the Project area would not undergo construction or operation of facilities on open land that may contain habitat. However, continued growth and spread of *Arundo donax* would continue to adversely affect native biological resources within the Santa Ana River. As a result, the proposed Project would result in biological benefits not experienced by Alternative 1. As a result, Alternative 1 would result in greater impacts compared to the Project. .

Cultural Resources

The Project has the potential to encounter archaeological resources during ground disturbing activities. With implementation of mitigation measures, the Project would have less-than-significant impacts in regard to cultural resources. Under Alternative 1, no ground-disturbing

activities would occur to any known or unknown historical, archaeological, or paleontological resources. As a result, Alternative 1 would result in fewer impacts compared to the Project.

Geology and Soils

The Project would result in a less than significant impact related to exposure to geologic resources with mitigation incorporated. Under Alternative 1, there would be no development and the potential effects associated with geology and soils, such as soil erosion during construction, would not occur. As a result, Alternative 1 would result in fewer impacts compared to the Project.

Hazards and Hazardous Materials

The Project would result in less than significant impacts with mitigation related to hazards and hazardous materials. Under Alternative 1, no construction would occur; therefore, no new facilities would use, store, or be placed on hazardous material sites or expose structures or persons to hazardous materials. As a result, Alternative 1 would result in fewer impacts compared to the Project.

Hydrology and Water Quality

The Project would result in less than significant impacts with mitigation related to hydrology and water quality. Under Alternative 1, there would be no development and thus no changes to the natural drainage patterns of any site, or to the potential to contribute to runoff into existing stormwater drainage systems or surface waters. However, there would be no opportunity to increase groundwater supplies or improve the riparian habitat. As a result, Alternative 1 would result in greater impacts compared to the Project.

Land Use and Planning

The Project would result in a less than significant impact to land use and planning. The Project would not physically divide a community, or conflict with any applicable land use plan, policy, or regulations. Under Alternative 1, no development would occur and land would remain in the current state. As such, Alternative 1 would not change existing land use or have an effect on land use plans and policies related to the program area. As a result, Alternative 1 would result in similar impacts compared to the Project.

Mineral Resources

The Project would result in a less than significant impact on the loss of availability of important mineral resources within the Project area. Under Alternative 1, there would be no development and the potential effects associated with mineral resources would not occur. Therefore, this alternative would have similar impacts compared to the Project.

Noise

The Project would result in a less than significant impacts with mitigation from temporary construction noise and operation. Under Alternative 1, there would be no development and no change to existing ambient noise levels. No noise and vibration impacts would occur under

Alternative 1. Therefore, this alternative would result in fewer impacts from noise and vibration compared to the Project

Population and Housing

The Project would result in a less than significant impacts related to population and housing in the region. Alternative 1 would not result in the need for new housing or induce growth. Therefore, Alternative 1 would have similar impacts compared to the Project.

Public Services

The Project would result in a less than significant impact on public services. Under Alternative 1, there would be no development, thus no increased demand on existing fire protection, police protection, public schools, or recreational facilities. This alternative would result in similar impacts compared to the Project.

Traffic and Transportation

The Project would result in a less than significant impact with mitigation on traffic and transportation. Under Alternative 1, there would be no construction activities and, thus, no additional traffic would be generated in the Project area and no impacts related to traffic and circulation would occur. Therefore, this alternative would result in fewer impacts compared to the Project.

Tribal Cultural Resources

The Project has the potential to encounter tribal cultural resources during ground disturbing activities. With implementation of mitigation measures, the Project would have less-than-significant impacts in regard to tribal cultural resources. Under Alternative 1, no ground-disturbing activities would occur to any known or unknown tribal cultural resources. As a result, Alternative 1 would result in fewer impacts compared to the Project.

Utilities and Service Systems

The Project would result in less than significant impacts on utilities and service systems. Under Alternative 1, no development would occur and no construction of utility infrastructure systems would be implemented. Therefore, this alternative would result in fewer impacts on utilities and service systems than the Project.

Secondary Effects of Growth

The Project would not induce population growth. Secondary effects of growth would occur as identified and addressed in local planning jurisdiction General Plans. Under Alternative 1, the SARCCUP partner agencies would accommodate increased water demands locally without the benefits of shared groundwater storage. Nonetheless, the planned growth for the region would occur similar to under Project conditions. As a result, Alternative 1 would result in similar secondary effects of growth.

7.5.2 Alternative 2: Additional Chino Basin Groundwater Storage

Under Alternative 2 Chino Basin would increase storage capacity by 36,000 AF and OCWD would not provide any storage capacity. The total storage capacity goal of the Project at 180,000 AF would remain the same as the proposed Project. Alternative 2 would require additional construction and operation of groundwater recharge infrastructure to accommodate the additional storage and pumping of 36,000 AF in the Chino Basin, bringing the total groundwater storage of the Chino Basin under SARCCUP to 86,000 AF.

Aesthetics

The Project would result in a less than significant impact to aesthetics with mitigation. Under Alternative 2, additional facilities would be needed to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project, and the views of the developed site would retain the similar visual character as the Project. Additionally, there would be no increase in sources of light and glare compared to the Project. Therefore, this alternative would have similar impacts compared to Project.

Agriculture and Forestry Resources

The Project would result in less than significant impacts on agriculture and forestry resources. Therefore, Alternative 2 would have similar impacts on agriculture and forestry resources.

Air Quality and Greenhouse Gas Emissions

Under Alternative 2, there would be a slight increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project, and the air quality emissions would be expected to be not significantly greater than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Biological Resources

The Project would result in less than significant impacts to biological resources with mitigation. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project, and the open land that may contain habitat, would not put candidate, sensitive, or special-status species at risk or impede any biological resource regulation, ordinance, or conservation plans above those compared to the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Cultural Resources

The Project has the potential to encounter archaeological resources during ground disturbing activities. Additionally, the Project would have less-than-significant impacts with mitigation in regards to historical resources. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size

of facilities would not be significantly different or larger in scale and size than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Geology and Soils

The Project would result in a less than significant impact related to exposure to geologic resources with mitigation incorporated. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Hazards and Hazardous Materials

The Project would result in less than significant impacts with mitigation related to hazards and hazardous materials. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Hydrology and Water Quality

The Project would result in less than significant impacts with mitigation related to hydrology and water quality. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project. Increased groundwater storage within Chino Basin would need to be approved by the Chino Basin Watermaster. The Watermaster would determine whether additional storage and extraction would be consistent with best management practices of the Chino Basin. However, with the Watermaster's approval impacts under Alternative 2 would be slightly greater than the Project since the groundwater basin would be managed more dynamically to accommodate additional storage and annual pumping.

Land Use and Planning

The Project would result in a less than significant impact to land use and planning. The Project would not physically divide a community, or conflict with any applicable land use plan, policy, or regulations. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Mineral Resources

The Project would result in a less than significant impact on the loss of availability of important mineral resources within the Project area. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Noise

The Project would result in a less than significant impacts with mitigation from temporary construction noise and operation. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Population and Housing

The Project would result in a less than significant impacts related to population and housing in the region. Alternative 2 would not result in the need for new housing or induce growth. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Public Services

The Project would result in a less than significant impact on public services. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Traffic and Transportation

The Project would result in a less than significant impact with mitigation on traffic and transportation. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Tribal Cultural Resources

The Project has the potential to encounter tribal cultural resources during ground disturbing activities. Additionally, the Project would have less-than-significant impacts with mitigation in regards to tribal cultural resources. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Utilities and Service Systems

The Project would result in less than significant impacts on utilities and service systems. Under Alternative 2, there would be an increase in construction of facilities used to increase storage of groundwater in the Chino Basin. However, the sites and size of facilities would not be significantly different or larger in scale and size than the Project. Therefore, impacts under Alternative 2 would be similar to the Project.

Secondary Effects of Growth

The Project would not induce population growth. Secondary effects of growth would occur as identified and addressed in local planning jurisdiction General Plans. Under Alternative 2, the the goal of 180,000 AF of storage would be similar to the proposed Project. The planned growth for the region would occur similar to under Project conditions. As a result, Alternative 2 would result in similar secondary effects of growth.

7.5.3 Alternative 3: Reduced Chino Basin Groundwater Storage

Under Alternative 3, the total storage capacity provided by SARCCUP would be reduced to 144,000 AF. The 36,000 AF of storage in Orange County Basin would not be made available. Alternative 3 would require similar construction and operation of groundwater recharge infrastructure. However, the total groundwater storage capacity would be reduced to 144,000. Since the total dry year storage amount would be less than the SARCCUP goals, each partner agency would plan other means of obtaining dry year water supply that may include additional water supply infrastructure.

Aesthetics

The Project would result in a less than significant impact to aesthetics with mitigation. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Agriculture and Forestry Resources

The Project would result in less than significant impacts to agriculture and forestry resources. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Air Quality and Greenhouse Gas Emissions

The less-than-significant impacts with mitigation from Project short-term construction emissions would occur under this alternative, however the total amount of emissions would be less. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Biological Resources

The Project would result in less than significant impacts to biological resources with mitigation. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities

would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Cultural Resources

The Project has the potential to encounter archaeological resources during ground disturbing activities. Additionally, the Project would have less-than-significant impacts with mitigation in regards to historical resources. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Geology and Soils

The Project would result in a less than significant impact related to exposure to geologic resources with mitigation incorporated. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Hazards and Hazardous Materials

The Project would result in less than significant impacts with mitigation related to hazards and hazardous materials. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Hydrology and Water Quality

The Project would result in less than significant impacts with mitigation related to hydrology and water quality. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Although the Orange County Basin would not be used for additional storage, the other groundwater basins would be operated similar to the proposed Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Land Use and Planning

The Project would result in a less than significant impact to land use and planning. The Project would not physically divide a community, or conflict with any applicable land use plan, policy, or regulations. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Mineral Resources

The Project would result in a less than significant impact on the loss of availability of important mineral resources within the Project area. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Noise

The Project would result in a less than significant impacts with mitigation from temporary construction noise and operation. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Population and Housing

The Project would result in a less than significant impacts related to population and housing in the region. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Public Services

The Project would result in a less than significant impact on public services. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Traffic and Transportation

The Project would result in a less than significant impact with mitigation on traffic and transportation. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Tribal Cultural Resources

The Project has the potential to encounter tribal cultural resources during ground disturbing activities. Additionally, the Project would have less-than-significant impacts with mitigation in regards to tribal cultural resources. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Utilities and Service Systems

The Project would result in less than significant impacts on utilities and service systems. Under Alternative 3, there would be a decrease in construction of facilities resulting from the decrease in volume of groundwater stored and used. However, the sites and size of facilities would not be significantly different in scale and size than the Project. Therefore, impacts under Alternative 3 would be similar to the Project.

Secondary Effects of Growth

The Project would not induce population growth. Secondary effects of growth would occur as identified and addressed in local planning jurisdiction General Plans. Under Alternative 3, the goal of 144,000 AF of storage would be less than the proposed Project. As a result, the benefits of sharing regional storage capacities would be lessened. However, the planned growth for the region would occur similar to under Project conditions. As a result, Alternative 3 would result in similar secondary effects of growth.

7.6 Environmentally Superior Alternative

CEQA requires that an EIR identify an environmentally superior alternative of a project other than the No Project Alternative (CEQA Guidelines Section 15126.6[e][2]). Table 7-2 shows an impact determination comparison for potentially significant impacts of the proposed program to all the proposed alternatives. The No Program Alternative (Alternative 1) would reduce or eliminate Project construction impacts, but would not provide the benefits of the proposed project to biological resources within the Santa Ana River.

Alternative 2 would not eliminate any of the potential impacts of the Project. By increasing the proposed recharge capacity of the Chino Basin, effects on groundwater levels would be slightly greater than under the proposed Project. the Chino Basin Watermaster would need to determine whether the increased storage and extraction capacity within the Chino Basin would adversely affect local pumpers.

Alternative 3 would differ from the Project by not including the volume of groundwater to be stored from OCWD (36,000 AF) and a slight decrease in the construction of associated facilities with the storage and movement of that volume. Under Alternative 3, the regional benefits of shared groundwater storage capacity would be lessened, resulting in a less reliable dry year water supply. Alternative 3 would, therefore, not meet all the goals of the Project, requiring SARCCUP partner agencies to develop other water reliability programs that may result in more environmental impacts. As a result, Alternative 3 is not the environmentally superior project. The proposed Project is the environmentally superior alternative since it provides for the careful planning and timed implementation of necessary water supply reliability, while improving native habitat conditions within the Santa Ana River, and minimizing environmental impacts associated with dry year water supply management compared with other water supply alternatives.

CHAPTER 8
Report Preparation

8.1 Project Partner Agencies

Inland Empire Utilities Agency

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Orange County Water District

- Greg Woodside, Project Director
- Adam Hutchinson, Project Manager

Western Municipal Water District

- Ryan Shaw, Project Director
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