US Army Corps of Engineers
Los Angeles District

Draft

Environmental Assessment

Easement for the WRCRWA Recycled Water Line

WRCRWTP to Bluff Street

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Contents

Tables

Figures

Acronyms and Abbreviations

AAM	annual arithmetic mean
ACOE	U.S. Army Corps of Engineers
ADOE	Archaeological Determinations of Eligibility
AFY	acre-feet per annum
AGM	annual geometric mean
AQMP	Air Quality Management Plan
ARB	Air Resources Board
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
Caltrans	California Department of Transportation
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
CNDDB	California Natural Diversity Data Base
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
Corps	U.S. Army Corps of Engineers
CRWQCB, SAR	California Regional Water Quality Control Board, Santa Ana Region

dB(A)	decibels on the A-scale
DEIR	Draft Environmental Impact Report
dEA	draft Environmental Assessment
DFW	California Department of Fish and Wildlife
DTSC	Department of Toxic Substances Control
DWP	City of Corona Department of Water and Power
DWR	Department of Water Resources
EA	Environmental Assessment
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
EPDC	expected peak day concentration
ESA	Endangered Species Act
g	acceleration due to gravity
GHG	greenhouse gases
GIS	Geographic Information System
gpm	gallons per minute
GMZ	groundwater management zone
GWP	global warming potential
HDP	Historic Property Directory
kW	kilowatts
KSD&A	K.S. Dunbar & Associates, Inc.
Ldn	day-night average sound level
Leq	noise equivalent
LUSTIS	Leaking Underground Storage Tank Information System
MBTA	Migratory Bird Treaty Act
mg	million gallons
mgd	million gallons per day

MMRP	Mitigation Monitoring and Reporting Program
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
MT	metric tons
MW	megawatts
MWD	The Metropolitan Water District of Southern California
MWh	megawatt hours
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NDDB	Natural Diversity Data Base
NO	nitrogen oxide
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
NPL	National Priorities List
O_3	ozone
OES	Office of Emergency Services
OHP	Office of Historic Preservation
Pb	lead
Pga	peak ground acceleration
PM	particulate matter
PM_{10}	particulate matter (less than 10 microns in diameter)
$PM_{2.5}$	particulate matter (less than 2.5 microns in diameter)
ppb	parts per billion
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RCFCWCD	Riverside County Flood Control and Water Conservation District
ROG	reactive organic gases also called VOC (volatile organic compounds)
Sa	spectral acceleration

SAAQS	State Ambient Air Quality Standards
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_x	oxides of sulfur
State Water Board	State Water Resources Control Board
SWIS	Solid Waste Information System
TOG	total organic gases
UCR	University of California, Riverside
USF&WS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service
$\mu g/m^3$	micrograms per cubic meter

1 Introduction

The City of Corona's Department of Water and Power (DWP) is requesting implementation of its Proposition 1–funded Reclaimed Water Distribution System Project, which includes the overall installation, operation and maintenance of approximately 73,400 lineal feet of 8-inch to 20-inch diameter recycled water pipelines, and two 2.1 million-gallon recycled water storage tanks. It is anticipated that the Project would be implemented in five phases. *Phase 1, the only portion requiring Federal/Corps approval, would include approximately 2,000 lineal feet of 20-inch diameter recycled water pipeline to be installed on Federal land, and 5,000 feet total between the Western Riverside County Regional Wastewater Authority's facilities at 14634 River Road in the City of Eastvale to its intersection with Bluff Street in the City of Norco* (Figure 1-1). As shown on Figure 1-1, the Proposed Project area includes mixed uses (e.g., residential, commercial and open space). It is accessible via River Road from State Route 91. The Federal portion of this proposal is shown, below, from its exit at the treatment plant's mid-eastern area then extending on Federal land, until reaching Baron Drive and then River Road.

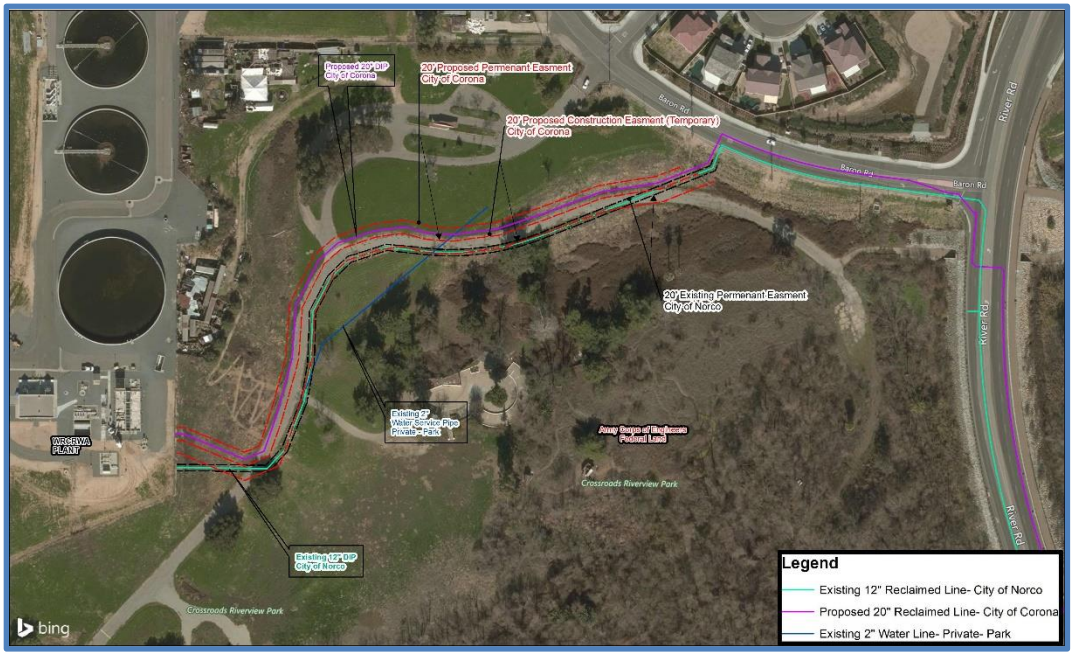

Figure 1-1 Recycled Water Line Preferred Alignment (purple) on Federal Land, Showing Southeast Exit from Treatment Plant

As seen above, the proposed alignment would exit the WRCRWA Wastewater Treatment Plant site and would cross Federal lands administered by the U.S. Army Corps of Engineers (Corps) between the Treatment Plant site and Baron Drive, a distance of approximately 2,000 lineal feet. The pipeline would then follow public street rights-of-way (Baron Drive and River Road) to the intersection of River Road and Bluff Street. At the Santa Ana River crossing, the pipeline would be installed within an existing, dedicated space within the River Road Bridge structure.

The crossing of federal land west of River Road Bridge requires that DWP acquire an easement from the Corps. The granting of the easement would be considered a Federal action. Additional phases of the proposed construction activity involve no Federal land and will not be considered here.

The National Environmental Policy Act (NEPA) requires that Federal agencies consider potential environmental consequences of implementation of proposed actions. (The same requirement is triggered when a Proposed Project requires a Federal permit and/or is aided by Federal funding.) NEPA's intent is to ensure that project proponents protect environmental quality through informed Federal decisions. The Council of Environmental Quality (CEQ) was established under NEPA for the purpose of implementing and overseeing Federal policies as they relate to this process. In 1978, the CEQ issued *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR §1500-1508, 1978). These regulations indicate that an Environmental Assessment (EA) be prepared to:

- Briefly provide sufficient analysis and evidence for determining whether to prepare an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI);
- Aid in an agency's compliance with NEPA when an EIS is necessary; and
- Facilitate preparation of an EIS when one is necessary.

Further, to comply with other relevant environmental requirements (e.g., Endangered Species Act (ESA), National Historic Preservation Act (NHPA), Clean Air Act (CAA), Clean Water Act (CWA), etc.,) in addition to NEPA, and to assess potential environmental impacts, the impact assessment and decision-making processes for the proposed action involves thorough examination of all environmental issues pertinent to the Proposed Project. Specific to U.S. Army programs, compliance with NEPA is effectively ensured by implementing policies and procedures outlined in Army Regulations (AR) 200-1, *Environmental Protection and Enhancement Regulations,* 200-2-2, *Procedures for Implementing NEPA,* and in 33 Code of Federal Regulations, Part 230, et seq.

The Corps is the Lead Agency for this draft EA (dEA) because the Proposed Project area involves facilities and land controlled by the Corps. The dEA evaluates the potential environmental impacts that could result from implementation of the Proposed Project, which is described in Section 1.2. Reasonable alternatives to the Proposed Project have been considered during the planning process (see Chapter 2) and potential environmental consequences of these alternatives have been included in the evaluation (see Section 2.2).

1.1 Project Authority, Purpose, and Scope

Authority

The United States Corps of Engineers (USACE) pursuant to 10 U.S.C. 2667 (Lease) and/or 10 U.S.C. 2668 (Easement for Right-of-Way) is authorized to permit non-Federal entities the right to use Federal lands if the proposed use is determined to be compatible with the Federal project, laws, regulations and serve the interests of the public and/or the Federal government.

Purpose and Need

The City of Corona holds a Recreation outgrant with the USACE, in its western areas on Federal land associated with Prado Dam which is operated for flood risk management by the Corps. These outgranted areas, which are owned by the Federal government, include a number of City parks as well as the Corona Municipal Airport, all of which use

recycled water in their landscape irrigation. In other words, both Federal (Corps-owned) and non-Federal (Corona-owned) lands will benefit from access to additional recycled water for the local parklands. To conserve potable water, and to provide recycled water necessary to facilitate City park irrigation needs, the construction of additional recycled water facilities is necessary. Corona is requesting a new easement for this waterline to cross Federal open space on land currently leased for Recreation (Crossroads Riverview Park) by Riverside County, to connect at Corona's existing recycled waterline connection in Norco, Riverside County, CA. The proposed waterline path would closely parallel Norco's existing buried waterline which also runs from the treatment plant to Baron Drive.

The background for the City's need in requesting a Corps easement, is that consistent with WRCRWA's Resolution No. 97-38, each member agency (such as the City of Corona) shall have the right to take delivery of and use recycled water from WRCRWA's facilities, an amount of recycled water treated and produced by WRCRWA's facilities as determined by WRCRWA annually, not to exceed the amount of reclaimable wastewater delivered by the member agency to WRCRWA's facilities for treatment less any amount consumed during the course of the operations of WRCRWA's facilities.

The Corps' land management purpose is to review such proposals as the current one, for the easement to install, operate and maintain such a pipeline as described, for consistent and appropriate Corps land use. The Federal need is to determine whether the request is in the interest of the public and the Corps (/Federal government), and to process the request to occupy/use Federal lands in a way that prioritizes compatibility with the existing Federal Flood Risk Management Project (Santa Ana River Mainstem Project, including Prado Basin and Dam). The purpose of this draft Environmental Assessment (dEA) is to evaluate any potential impacts associated with the United States Army Corps of Engineers (USACE/Corps) granting the requested recycled waterline easement, to City of Corona, and in subsequent construction, use, and maintenance of the recycled waterline as proposed.

City of Corona's stated purpose in this matter is to:

- Decrease the amount of recycled water that cannot be beneficially used within the service area of the Western Riverside County Regional Wastewater Authority (WRCRWA) of which the City of Corona is a member agency.

- Increase the amount of recycled water that can be beneficially used thereby decreasing the amount of potable water that is currently being used for non-potable uses.

- Decrease the amount of imports from the State Water Project and Colorado River Aqueduct.

- Improve the reliability of landscape irrigation water supplies at Corona's landholdings, both Federal and non-Federal holdings.

The City of Corona's stated need for the Proposed Project is that the pipeline is the critical link to the supply of reclaimed water for its reclaimed water distribution system. While other potential routes do exist between the Treatment Plant water source and Corona's existing connector location in Norco, each of those alternatives has major and disadvantageous constraints when compared with the proposed route introduced in this draft EA. Examples of these

constraints include the need for significantly longer pipeline construction footprints on additional private or public lands as well as restricting construction to significantly more constrained spaces within the Treatment Plant's water source location itself.

Scope of Analysis

This Environmental Assessment (EA) analyzes likely effects of the proposal by comparing a *No Action Alternative*, with the proposed action, which would provide for an easement on USACE-owned properties that would ultimately be used for development of the recycled waterline. This analysis is offecpred to the interested public to solicit input on the project and would be made available for review and public input for 30 days.

Comments regarding this proposal should be addressed to the USACE at the address provided on the accompanying public notice information. Following the 30-day review period, the USACE's Asset Management Division will determine if an Environmental Impact Statement (EIS) will be required or if a Finding of No Significant Impact (FONSI) can be issued.

1.2 Proposed Project Description – Federal Action

As proposed (Preferred Alternative), the Federal Action consists of the Corps granting an easement to the project proponent (City of Corona DWP), because the preferred route would cross Federal land controlled by the Corps. The waterline would originate from within the Western Riverside County Regional Wastewater Treatment Plant and then cross adjacent Federal land currently leased for Recreation (Crossroads Riverview Park) by Riverside County, then follow and continue on non-Federal, public street rights-of-way to an existing connection location in Norco, CA near City of Corona's northwest boundary. This proposed easement of approximately 2,000 lineal feet would allow the City of Corona to construct, operate and maintain an essential link in its reclaimed water distribution system. (Note that the Riverview Park and the proposed project footprint area is generally closed to the public, except for rare, special events held elsewhere in the Park).

2 Alternatives

This section presents alternatives which were considered, including the Preferred Action Alternative and a No-Action Alternative which are carried forward for analysis, as well as alternatives which will not be carried forward. To best meet the City's Purpose and Need, a portion of the pipeline would cross Federal land controlled by the Corps and this Preferred Alternative would consist of the Corps granting an easement to the proponent, City of Corona DWP. The maintenance of Federal lands now managed in recreational parkland and sports fields by Corona, would benefit from this new source of recycled wastewater for its annual irrigation needs.

2.1 No Action Alternative

CEQ regulations implementing NEPA require that a No Action Alternative be analyzed to provide a baseline for comparison with action alternatives. The No Action Alternative identifies and describes the potential environmental impacts of the status quo (i.e., if the Corps did not grant the easement for the construction, operation and maintenance of the proposed 20-inch diameter reclaimed water pipeline across Federal land). However, because CEQ regulations stipulate that the No Action Alternative be analyzed, to assess environmental consequences that may occur if the Proposed Project is not implemented, this alternative is also carried forward for analysis in this dEA.

Under the No Action Alternative, the proposed 20-inch diameter pipeline would not be constructed, operated and maintained via an easement to cross Federal lands. In this case, there would be no construction or maintenance footprint on the approximately up to 2,000 lineal feet of Federal land, as proposed. Corona would be faced with different constraints in its ability to construct a pipeline to utilize this valuable source of reclaimed water. Corona has already submitted this proposal to a CEQA analysis and because of the constraints, indicated below, both the City and Treatment Plant would be limited in developing a significantly feasible alternate to the Preferred Alternative. Under the No Action Alternative, with no use of Federal land, the City would be less able to supply its customers with reclaimed water and may have to meet future demands using additional, more expensive potable water, which is mostly imported from the State Water Project and the Colorado River Aqueduct.

2.2 Description of Action Alternatives

The following three (3) action alternatives were initially evaluated for the Proposed Project.

2.2.1 Preferred Alternative (or Alternative 1)

The Preferred Alternative (shown previously on Figure 1-1) consists of approximately 2,000 lineal feet of Federal land to be used for a total, 5,000 lineal feet (LF) of 20 inch-diameter recycled water pipeline to be installed from the Western Riverside County Regional Wastewater Treatment Plant to the City's existing reclaimed water distribution system at the intersection of River Road and Bluff Street. With the exception of the bridge crossing, the pipeline would be installed through open-cut techniques. At the bridge crossing location, the pipeline would be placed within an existing dedicated space located within the bridge structure.

The City is requesting a 20-foot wide, approximately 2,000-foot long, permanent easement from the Corps for the operation and maintenance of this reclaimed water line. It is also requesting an additional 20-foot wide *temporary* construction easement, largely on the existing, unused asphalt road (see Figure 1-1) for installation of the reclaimed

water line. The actual trench would be approximately 5 feet wide by 7 to 8 feet deep. A plan and profile drawing of the pipeline across federal lands is provided on Figure 2.2.1-1. Within this portion of the (inactive) Crossroads Park, a portion of the temporary construction easement would partially overlie an existing, little-used asphalt roadway which also parallels a second, similar, existing buried waterline which City of Norco constructed and maintains. The legal descriptions, for the two lines (existing and proposed) are distinct; and Corona and Norco have consulted on developing the proposed line in this area.

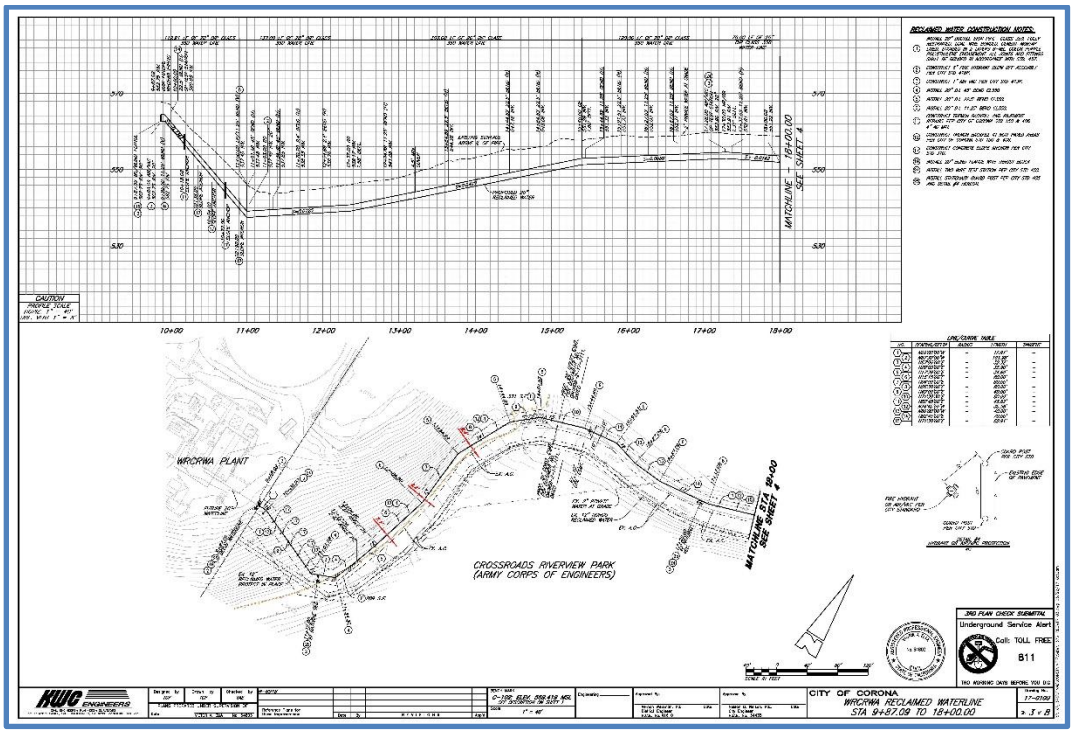

Figure 2.2.1-1 Plan/Profile of Preferred Alternative Crossing Federal Land (Riverview Park), Riverside Co.

2.2.2 Alternative 2

The City of Corona's Department of Water and Power fully analyzed a similar but different alignment for the pipeline between the Western Riverside County Regional Wastewater Treatment Plant and Baron Road. That alignment is shown below on Figure 2.2.2-1. This alternative was fully analyzed in the July 2016 CEQA document (*Initial Study and Mitigated Negative Declaration for the Proposition 1 – Reclaimed Water Distribution System*) as the Phase 1 Project (WRCRWA Reclaimed Water Pipeline) and would avoid Federal land by taking a different route (northeastern) to exit the Wastewater Treatment Plant, if this would be practical and permissible within the Plant itself. This alternative alignment would avoid the use of Federal land.

However, in contrast with the Preferred Alternative's exit area, Plant managers determined there was no other route, without crossing many other, conflicting internal utility lines within the Plant, whereby a new pipeline could exit the plant at this location as easily as Alternative 1. Because of internal constraints, it is less feasible to actually construct a new line to exit the Plant's northeastern (or other) location. As shown in Figure 1-1, exiting from the Plant as proposed, from the southeast, is a superior route when Plant operations are considered.

Figure 2.2.2-1 Alternative 2, Showing Northeast Exit from Treatment Plant but Requiring More Complex Internal Plant Piping

Thus, Alternative 2 was dropped from further consideration due to impracticality of its construction within the Treatment Plant itself, for it would severely impact existing facilities.

2.2.3 Alternative 3

The City also examined the possibility of exiting the Treatment Plant at the southeast corner of the property and paralleling the westerly property line to River Road and then (as in Alternatives 1 and 2) following Baron Drive and River Road to its intersection with Bluff Street (Figure 2.2.3-1). Although this alternative to exit the Plant is technically feasible, it would add approximately 3,700 lineal feet of pipeline to the alignment and require the acquisition of an easement from private property owners. Therefore, although this alternative alignment would eliminate the need to utilize Federal lands, it was dropped from further consideration due to the extra time and uncertainty involved to acquire the necessary easements as well as higher additional costs associated with additional lengths of pipeline construction.

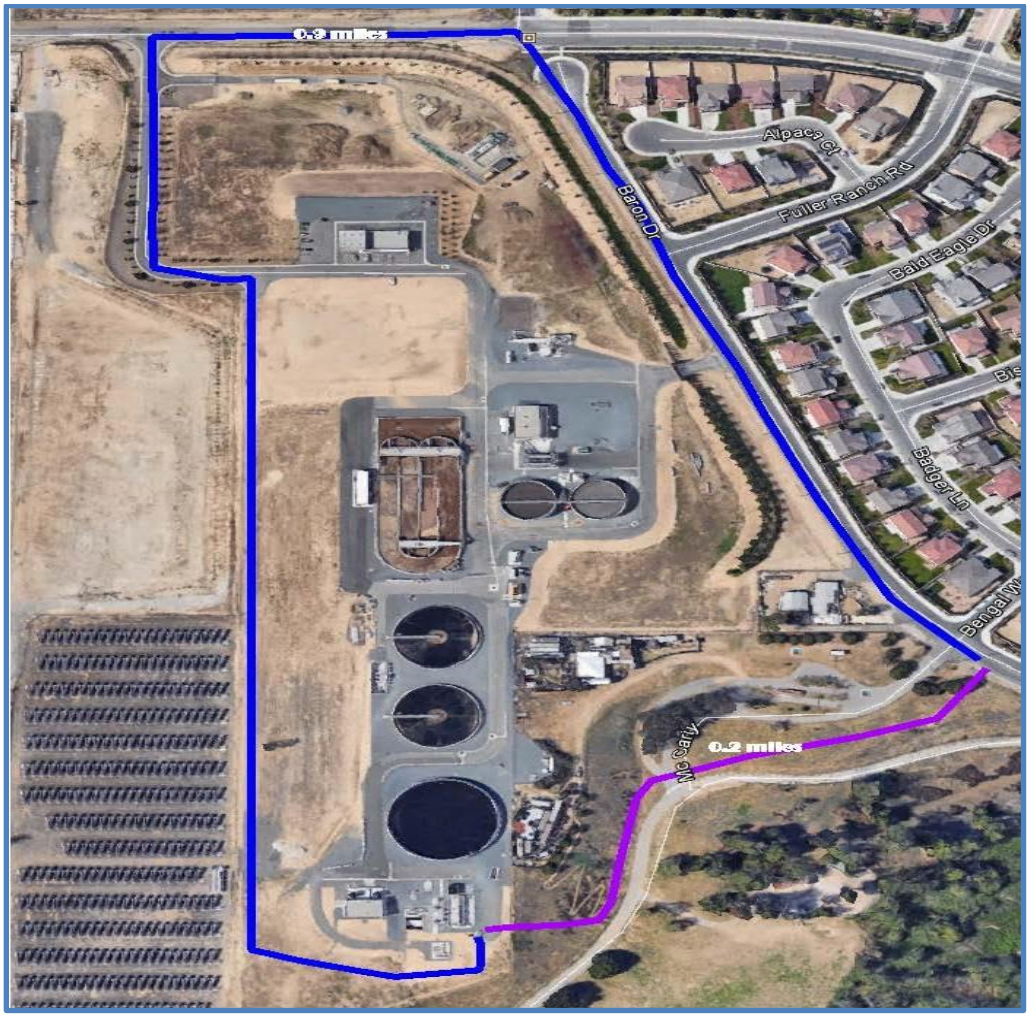

Figure 2.2.3-1 Alternative 3: Blue Line Avoids Federal Land by Going W then N to Baron Dr. (Purple Shows Approximate Preferred Alignment)

2.3 Preferred Alternative

The Preferred Alternative is preferred because it would impose the fewest new environmental impacts and is considerably shorter than Alternative 3, the only other technically feasible alternative.

Also, as shown on Figure 1-1, the Federal land route includes existing encroachments (i.e., roads, private 2-inch diameter water line, and the City of Norco's 12-inch diameter recycled water line). This existing utility corridor has already been disturbed. The alignment was also reviewed by the State Office of Historical Preservation which agreed that mitigation measures may be incorporated to ensure that the project will not adversely affect historic properties.

2.3.1 Description

The Preferred Alternative consists of the Corps granting an easement to the City of Corona to construct, operate and maintain a 20-inch diameter reclaimed water pipeline across Federal land, City of Eastvale, Riverside County. As discussed previously, the requested easement includes a 20-foot wide permanent easement and an additional 20-foot wide temporary construction easement for laydown or other non-ground-disturbing activities.

As previously shown on Figure 1-1, the WRCRWA Recycled Water Pipeline would extend across Federal land for approximately 2,000 feet, extending a total of approximately 5,000 lineal feet from the Western Riverside County Regional Wastewater Treatment Plant, located in the City of Eastvale, to the intersection of River Road and Bluff Street, located in the City of Norco. The subject proposed water pipeline would generally parallel a roadway and the City of Norco's existing 20-inch diameter pipeline easement, across the Riverview parkland, from the Treatment Plant to Baron Street. It would then follow Baron Street in an easterly direction to its intersection with River Road. It would then follow River Road in a southerly direction to its intersection with Bluff Street.

The pipeline would be a 20-inch diameter ductile iron, Class 350 pipe, fully restrained, dual-wire bonded, cement mortar lined, encased in 2 layers of 8-mil, color purple, polyethylene encasement. It would be installed by the open-trench method with the exception of the river crossing where it would be installed in a dedicated space in the bridge structure.

2.3.2 Construction

The anticipated overall flow and sequence of construction activity is described below and includes determining the locations for tying new pipe into existing pipe via potholing, open-trench linear excavation for installation of the new pipeline, hydrostatic testing and tie-in to existing lines, backfill of the trench, and site restoration. (Equipment anticipated to be used for construction activities is described below.)

Construction contractors would ensure that the proposed material laydown yard (Figure 2.3.2-1), which is not on Federal land, and all workspaces are clear and ready for construction, by removing brush, trees, large rocks, and other obstructions from the work areas. No sensitive or protected species would be removed under the Preferred Alternative. Topsoil and organic surface material along the alignment would be stripped and stored in the laydown area until the project is completed and the site is ready for restoration.

Figure 2.3.2-1 Proposed Laydown Area

The trench width would be approximately five feet to accommodate the 20-inch-diameter pipe. To maximize safe conditions and minimize confusion among interagency staff, all project field activities would be communicated to and reviewed by the Corps Asset Management staff, including its Operations Branch, prior to initiation. In addition, the City of Corona would provide a Corps-approved construction safety plan, including site safety and communications management aspects, prior to Corps issuance of the real estate easement and any other approvals.

Pipe would be delivered to the proposed laydown yard and would be inspected to ensure it meets industry and federal government safety standards. The sections (i.e., joints) of pipe would be strung out along the easement according to the designed material specification (e.g., diameter, wall thickness, grade, and coating). Bending individual joints of pipe would be done where required. The pipe would be positioned along the designed centerline of the trench, aligning it to facilitate welding pipe joints together above the trench. After welding, the weld quality would be inspected for inconsistencies using various inspection techniques (e.g., radiographic or ultrasonic testing), and repair or replacement would be performed if joints fail to meet acceptance requirements of industry specifications. A corrosion-resistant epoxy coating would be applied to the weld areas and to any area where the factory-applied coating has become damaged. Side-boom tractors would then lower the welded joints of pipe into the trench.

The new pipeline would be covered with imported and original topsoil to return the site as near to the original condition as possible. The trench would be backfilled with zero slack slurry to provide a minimum of 12 inches of coverage over the top of the pipe. Native soil would then be used to complete backfilling of the trench and would be graded to the site's original contours. All excess soil would be removed from the site.

After installation, the new pipeline would be hydrostatically tested to ensure its structural integrity and validate its Maximum Allowable Operating Pressure. This process involves filling the new pipeline segment with water and

pressurizing the pipe to an applicable pressure for a certain length of time. After a successful test, the new pipeline segment would be tied in and connected to the existing pipeline.

Construction equipment involved in project implementation would include the following:

Equipment	Number	Horsepower[a]	Load Factor[b]	Hours per Day
Air Compressors	1	78	0.48	4.0
Concrete Saws	1	81	0.73	1.0
Cranes	1	226	0.29	1.0
Excavators	1	163	0.38	6.0
Off Highway Trucks	1	400	0.38	4.0
Pavement Breakers	1	126	0.42	1.0
Pavers	1	131	0.36	1.0
Plate Compactors	1	8	0.43	1.0
Sweeper/Scrubbers	1	64	0.46	1.0
Tractors/Loaders/Backhoes	1	98	0.37	6.0
Water Trucks	1	189	0.38	2.0

Notes:

[1] 2011 OFFROAD default values.
[2] Percentage of the engine's maximum horsepower rating that the equipment actually operates.

There would also be two heavy-duty trucks delivering equipment and supplies to the site as well as two pickup trucks utilized by inspectors. In addition, 10 vehicles would be utilized by construction workers commuting to and from the site. Operation of the trucks would be limited to the construction easement or public street rights-of-way.

The Preferred Alternative would be constructed over a period of approximately 150 construction days of which approximately 60 days would include work on Federal lands. It is anticipated that construction would commence as soon as the Corps issues the easement to the City of Corona. Approximately 10 workers would be on-site at any one time.

2.3.3 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline *en route* to its distribution points. Following the construction phase, and entering the operations and maintenance phases, activity would generally cease and no personnel or routine daily activities would be associated with the site except as otherwise described in the easement language for this Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. Maintenance personnel would confine their activities to the permanent easement for the recycled water pipeline.

2.4 Alternatives Considered but Eliminated from Further Consideration

As described and for reasons provided, above, Alternatives 2 and 3 were eliminated from further consideration, and the environmental analysis in this EA focuses on the Preferred Alternative and the comparative No Action Alternative.

The following sections consider the No Action and the Preferred Action Alternatives, both carried forward for analysis.

3 Environmental Impacts and Analysis

This section presents the environmental analyses for the Preferred Alternative versus the No Action Alternative.

3.1 Land Use

3.1.1 Baseline Conditions

The WRCRWA Recycled Water Line is located within the Santa Ana River Basin in the Cities of Eastvale and Norco in Riverside County. The pipeline would be mostly located within public street rights-of-way; however, a portion of it would cross federal lands controlled by the Corps as part of the Santa Ana River Mainstem Project.

3.1.1.1 Santa Ana River Mainstem Project

The Santa Ana River Mainstem Project stretches a distance of approximately 75 miles along the Santa Ana River from its headwaters in San Bernardino County to its mouth at the Pacific Ocean in Orange County. Two main elements of the Santa Ana River Mainstem Project are Seven Oaks Dam in San Bernardino County and Prado Dam in Riverside County. The purpose of the project is to provide flood protection to property and residents along the Santa Ana River.

The Preferred Alternative would consist of an underground 20-inch diameter recycled water pipeline which would have no effect on flood control and would therefore be consistent with the Santa Ana River Mainstem Project.

3.1.2 Significance Thresholds

For the purposes of this analysis, implementation of the Preferred Alternative would result in a significant effect on land use if it would:

- result in the physical division of an established community;
- conflict with any established, applicable land use plan, policy or regulation of an agency with jurisdiction over the Proposed Project area; or
- require changes in land use as a result of implementing the alternatives that are considered to be incompatible with the existing land uses at and adjacent to the proposed facilities.

3.1.3 Alternative Analysis

3.1.3.1 No Action Alternative

Should the Corps not issue the requested easement, the City would not construct the WRCRWA Reclaimed Water Pipeline upon any federal lands. Therefore, the No Action Alternative would not involve any construction activities reviewable under NEPA. The City of Corona may or may not utilize its reclaimed water allotment from the Western Riverside County Regional Wastewater Reclamation Facility and there would be no changes to the existing federal land uses. Specifically, the No Action Alternative would not conflict with any applicable federal land use plan, policy or regulation; or result in changes that would be incompatible with existing land uses at and adjacent to the proposed facilities.

3.1.3.2 Preferred Alternative

3.1.3.2.1 Construction

Construction of the Preferred Alternative would not physically divide an established community because the pipeline would be underground and would be located within the Corps' easement or within public street rights-of-way.

Although the pipeline would be constructed mostly within public street rights-of-way, a portion of it would cross federal lands under the control of the Corps. Therefore, it will be necessary for the City of Corona to acquire an easement from the Corps to place the pipeline in this location. Project-related activities are compatible with the existing land use (public street rights-of-way).

Construction activities associated with the Preferred Alternative would be short-term and temporary (i.e., lasting approximately 150 construction days) and not interfere with any activities on adjoining federal lands controlled by the Corps.

The Preferred Alternative would not conflict with any federal or local applicable land use plan, policy, or regulation or result in changes in land use that would be incompatible with the existing land uses at and adjacent to the proposed facilities. Based on the above, the Preferred Alternative would not result in significant effects on land use.

3.1.3.2.2 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline *en route* to its distribution points. Following the construction phase, no personnel or daily activities would be routinely associated with the Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. As such, land use impacts associated with operations and maintenance would be negligible and would not approach any of the significance thresholds previously identified.

3.1.4 Environmental Commitments

Based on the analysis of potential impacts to land use conditions at and in the vicinity of the Proposed Project, no significant impacts are anticipated; therefore, no mitigation measures or other environmental commitments are proposed.

3.2 Geology and Soils

3.2.1 Baseline Conditions

In general, the Project area is underlain by three distinct geologic units; 1) bedrock composed of sediments of Ladd, Silverado, Santiago, Vaqueros-Sespe and Puente Formations; 2) remnants of a widespread terrace of ancient river

deposits; and 3) recent alluvium on the floor of the canyons tributary to the Prado Flood Control Basin dating from the Quaternary, Tertiary and Cretaceous periods.

The bedrock consists of 3 to 60 million-year old sedimentary rock formations of interbedded conglomerates, sandstones, siltstones and claystones. Southeast of WRF #1 exists a lower bedrock plateau known as the Gavilan Hills. This unit has been uplifted, tilted and folded by movement of the Whittier-Elsinore fault zone, and most beds are steeply inclined at angles greater than 45°.

Quaternary Age (less than 2 million years old) terrace deposits overlie and form a cap on the bedrock. Borings indicate that these deposits are more than 40 feet thick. The terrace deposits consist of well-to-poorly consolidated silt, sand and gravel with some boulders.

The alluvial deposits, which were deposited during the last 10 million years, are strewn across the floors of the canyons tributary to Prado Flood Control Basin. The alluvial deposits consist mostly of unconsolidated sand with some clay, silt, gravel, cobbles and boulders removed from the mountains as the result of stream erosion and weathering. The maximum known thickness of alluvium is in excess of 35 feet. In general, the alluvium in the upper valley is coarse nearby its source in the upper mountains and becomes less coarse and permeable the farther it is deposited downstream. However, lenses of sand and gravel are present near Prado Dam, at the mouth of the upper valley.

3.2.1.1 Earthquake Faults/Seismicity

Several major geologic fault systems are contained in the Southern California region. These faults include the San Andreas, San Jacinto, Sierra Madre, Newport-Inglewood, Whittier- Elsinore and Chino fault systems. The San Gabriel, San Bernardino and San Jacinto Mountains were formed during the late Tertiary and Quaternary periods by both vertical and horizontal movements along the Sierra Madre, San Andreas and San Jacinto faults. Less severe faulting and folding formed the Chino Hills and the Santa Ana Mountains in the Corona vicinity.

The largest of the faults affecting the region is the San Andreas Fault, which extends northwest to southeast from the Mojave Desert through Cajon Pass along the southern border of the San Bernardino Mountains through San Gorgonio Pass. Land west of the fault is tending to drift northward relative to land east of it at a rate of approximately one-half to two inches per year.

The San Jacinto fault branches from the San Andreas zone in the San Gabriel Mountains and extends south-southeastward into the Imperial Valley. During this century the San Jacinto fault has been the source of seven earthquakes ranging in magnitude from 6.0 to 7.1 on the Richter scale.

The Sierra Madre fault system is one of the few east-west lying faults in Southern California. The fault runs along the southern base of the San Gabriel Mountains. The Newport-Inglewood fault extends northwest to southeast along the coastline. The fault stretches from West Los Angeles on the north to the ocean offshore from Newport Beach. The 1933 Long Beach earthquake which measured 6.3 on the Richter Scale occurred on this fault.

The Whittier-Elsinore fault system passes through the Santa Ana Canyon about two miles downstream from the Prado Dam. Although considered relatively active, no earthquake greater than 6.0 on the Richter scale has occurred on this

fault since 1900. The Elsinore fault system also includes numerous other faults in the Chino Basin that have exhibited seismic activity.

The Chino fault, which is a part of the Whittier-Elsinore fault system, parallels Chino Creek along the eastern flank of the Chino Hills and crosses Prado Basin just northeast of Prado Dam. Although no major seismic activity has occurred on the fault recently, the Chino fault zone exhibits signs of being seismically active. Because of this, the fault poses the threat of a potentially catastrophic earthquake. Future earthquakes could cause ground rupture along the Chino fault itself.

3.2.1.1.2 Soils

Based on the NRCS USDA Web Soil Survey, the pipeline alignment is underlain by the following soil units: Dello loamy fine sand, Dello loamy sand, Grangeville fine sandy loam, Grangeville loamy fine sand, Grangeville sandy loam, Ramona very fine sandy loam, and Terrace escarpments.

3.2.2 Significance Thresholds

A significant geology and soils impact would occur if the Proposed Project:

- Significantly increases local soils' exposure to wind and water erosion or loss of topsoil either or- of off-site.
- Significantly alters the physical or chemical quality of sediments or soils.
- Triggers or accelerates geological processes such as erosion or sedimentation brought about by disturbance of landforms.

3.2.3 Alternative Analysis

3.2.3.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not use federal land to construct the recycled water pipeline. Therefore, no impacts to geology and soils would occur under the No Action Alternative and conditions would remain as described in Section 3.2.1.

3.2.3.2 Preferred Alternative

3.2.3.2.1 Construction

During construction, there would be no permanent or long-term impact on the existing topography or landforms because the topography of the area is generally flat and activities associated with project implementation would be short term and temporary. Conditions would return to those similar to the baseline conditions upon completion of construction. Where excavation occurs along the pipeline alignment, soil would be re-compacted to minimize future erosion. Sedimentation rates would continue, unchanged, in the project area. Furthermore, the site would be subject to the same seismic activity, earthquake fault zones, and areas of liquefaction as under baseline conditions. Therefore,

construction activities associated with the Proposed Project would not have significant impacts to local or regional geology and soils, or with regard to any associated risk factors.

3.2.3.2.2 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline *en route* to its distribution points. Following the construction phase, no personnel or daily activities would be routinely associated with the Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. As such geology and soils impacts associated with operations and maintenance would be negligible and would not approach any of the significance thresholds previously identified.

3.2.4 Environmental Commitments

Based on the analysis of potential impacts to geology and soils conditions at and in the vicinity of the Proposed Project, no significant impacts are anticipated; therefore, no mitigation measures or other environmental commitments are proposed.

3.3 Hydrology and Water Quality

3.3.1 Baseline Conditions

3.3.1.1 Flood Plain Management

The Project Area is within FEMA Floodway Areas Zone AE and X. Zone AE is defined as the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. Zone X is defined as areas of 0.2% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile and areas protected by levees from 1% annual chance flood.

3.3.1.2 Hydrology

The Prado Basin is the dominant water feature in the Project Area. It was formed by Prado Dam which is a flood control and water conservation project constructed and operated by the U.S. Army Corps of Engineers, Los Angeles District (Corps). The original construction was completed in April 1941. It is located at the upper end of the Lower Santa Ana River Canyon, which is a natural constriction controlling 2,255 square miles of the 2,450 square-mile Santa Ana River Watershed.

Prado Dam has an existing storage capacity of 362,000 acre-feet (af). It provides flood control between the invert elevation of 460 feet to the spillway elevation of 566 feet. Recent construction included an inlet structure to allow a maximum release of 30,000 cfs. The surface area of the reservoir was also increased to 10,256 acres.

The Santa Ana River is the main drainage entering the Prado Basin. Other drainages tributary to the Prado Basin include Cucamonga Creek, Chino Creek and Temescal Creek.

The U.S. Geological Survey measures flows in the Santa Ana River in the greater Project Area. The upstream station is at Riverside Narrows and the downstream station is at Prado. These flows for the 1970-71 through 2014-15 water years as reported by the Santa Ana River Watermaster are summarized on Figure 3-1. During the 44-year period of record, the average flows at Riverside Narrows have been 96,807 acre-feet per year and at Prado Dam have been 211, 277 acre-feet per year.

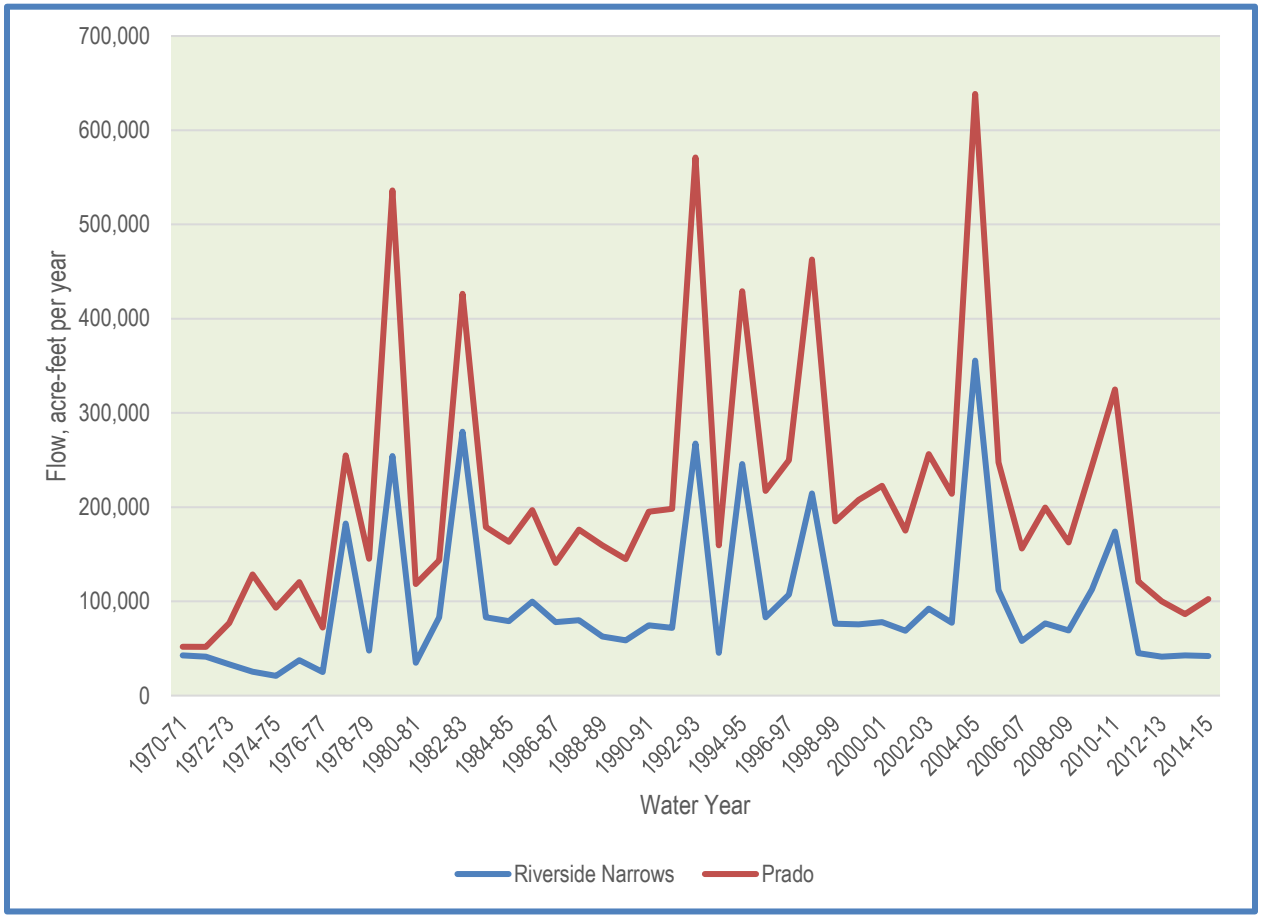

Figure 3-1 Average Monthly Flows in the Santa Ana River at Riverside Narrows and at Prado Dam

3.3.1.3 Surface Water Quality

The Water Quality Control Plan for the Santa Ana River (Basin Plan) includes numerous narrative water quality objectives that apply to all inland surface waters. In addition, the following numerical objectives apply to the base flow[1] in Reach 3 of the Santa Ana River. These are as follows:

[1] Base flow is defined in the Basin Plan as the combination of wastewater, rising water, and non-point sources.

Constituent	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Boron
Objective (mg/l)	700	350	110	140	10[a]	150	30	0.75

[a] Total nitrogen, filtered sample.

3.3.1.4 Prado Basin Management Zone

The flood plain behind Prado Dam has unique hydraulic characteristics. Chino Creek, Cucamonga Creek (which flows into Mill Creek) and Temescal Creek join the Santa Ana River behind the dam. Flood control operations at the dam, coupled with an extremely shallow groundwater table and an unusually thin aquifer, significantly affect these surface flows, as well as subsurface flows in the area. Depending on how the dam is operated, surface waters may or may not percolate behind the dam. There is little or no groundwater storage in the flood plain behind the dam. Any groundwater in storage is forced to the surface because the foot of Prado Dam extends to bedrock and subsurface flows cannot pass through the barrier created by the dam and the surrounding hills. Given these characteristics, this area is designated as a surface water management zone, rather than a groundwater management zone. The Prado Basin Management Zone is generally defined by the 566-foot elevation above mean sea level. It extends from Prado Dam up Chino Creek, Reach 1A and 1B to the concrete-lined portion near the road crossing at Old Central Avenue, up the channel of Mill Creek (Prado Area) to where Mill Creek becomes named as Cucamonga Creek and the concrete-lined portion near the crossing at Hellman Road, up what was formerly identified as Temescal Creek, Reach 1A (from the confluence with the Santa Ana River upstream of Lincoln Avenue) (this area is indistinguishable because of shifting topography and is now considered a part of the Prado Basin Management Zone), and up the Santa Ana River, Reach 3 to the 566-foot elevation (just west of Hammer Avenue). The Prado Basin Management Zone encompasses the Prado Flood Control Basin, which is a created wetlands as defined in the Basin Plan. Orange County Water District's wetlands ponds are also located within the Prado Basin Management Zone. *(CRWQCB, SAR 1995).*

3.3.2 Significance Thresholds

A significant impact to hydrology or water quality would occur if implementation of the Proposed Project:

- Substantially alters the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in a substantial increase in erosion or siltation on- or offsite.

- Substantially alters the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in a substantial reduction in the quality or quantity of surface water.

- Substantially alters the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increases the rate or amount of surface runoff in a manner that would result in flooding on- or offsite, or provide substantial additional sources of polluted runoff.

- Increases substantial erosion or sedimentation relative to existing conditions.

- Encounters groundwater during excavation activities and causes changes to groundwater levels and/or groundwater quality.

3.3.3 Alternatives Analysis

3.3.3.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not construct, operate or maintain the proposed recycled water pipeline on federal land, as proposed. No impacts to hydrology or water quality would occur under the No Action Alternative and conditions would remain as described in Section 3.3.1.

3.3.3.2 Preferred Alternative

3.3.3.2.1 Construction

Construction of the Preferred Alternative would not alter the existing drainage pattern of the Project area and would have no impact on State or local flood plain protection standards because any ground disturbance would be temporary and the land surface would be restored as close as possible to its existing contours. The proposed pipeline would cross the Santa Ana River within the River Road Bridge structure and no work would be performed in the channel or on the bank of the channel.

Implementation of the Preferred Alternative would not negatively affect the natural or beneficial values of the floodplain. It would also not induce floodplain development or increase risks to public safety, because the proposed pipeline would be located underground or within the River Road Bridge structure. Implementation of the Preferred Alternative would not introduce hazards within the floodplain because proposed project elements do not include flood-vulnerable structures.

If groundwater were to be encountered during excavation for the pipeline, appropriate permits would be obtained and appropriate measures [e.g., dewatering, etc.] would be implemented.). In any event, if groundwater is encountered during excavation activities, the Preferred Alternative would not cause changes to groundwater levels and/or groundwater quality because of the short-term nature of potential temporary dewatering that would be implemented to facilitate installation of the pipeline span foundation. Groundwater quality is not anticipated to be impacted because the installation of the pipeline would be installed in such a manner to prevent negative impacts to the groundwater.

No facilities would be installed within jurisdictional waters; therefore, the Proposed Project would be exempt from the notification requirements associated with Nationwide Permit No. 12 (NWP `1), which addresses permitting requirements with regard to utilities.

Overall, construction of the Preferred Alternative would not result in significant impacts to hydrology or water quality.

3.3.3.2.2 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline *en route* to its distribution points. Following the construction phase, no personnel or daily activities would be routinely associated with the Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. As such hydrology and water quality impacts associated with operations and maintenance would be negligible and would not approach any of the significance thresholds previously identified.

3.3.4 Environmental Commitments

In order to further reduce any potential impacts, environmental commitments for Proposed Project implementation would include using industry-standard erosion control materials and techniques.

3.4 Air Quality

3.4.1 Baseline Conditions

Ambient air quality is affected by both the rate and location of pollutant emissions and by meteorological conditions that influence the local and regional dispersal of pollutants. Atmospheric conditions such as wind speed and direction and air temperature gradients combined with local topography provide the link between air pollutant emissions and air quality.

The proposed Project is within the South Coast Air Basin (SCAB), which incorporates approximately 12,000 square miles, consisting of four counties (i.e., San Bernardino, Riverside, Los Angeles, and Orange) including some portions of what used to be the Southeast Desert Air Basin that includes the Beaumont-Banning area. Nearly half of California's population, which generates about one-third of the State's total criteria pollutant emissions, lives within the SCAB.

Planning for the attainment and maintenance of both federal and State air quality standards in the Project area is the responsibility of the South Coast Air Quality Management District (SCAQMD).

3.4.1.1 Air Pollutants

Pollutants regulated by the State and federal Clean Air Acts fall within three categories:

- criteria air pollutants
- toxic air contaminants, and
- global warming and ozone depleting gases.

Pollutants in each of these categories are monitored and regulated differently. Criteria air pollutants are measured by sampling concentrations in the air; toxic air contaminants are measured at the source and in the general atmosphere, and global warming and ozone-depleting gases are not monitored but are subject to federal and regional policies that call for their reduction and eventual phaseout (www.aqmd.gov, 10/18/06). California's landmark global warming legislation, AB 32, requires that the State's greenhouse gas emissions be reduced to 1990 levels by 2020. Emission trading is being considered for achieving the requirements of AB 32 (www.aqmd.gov, 4/21/07).

3.4.1.1.1 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health. Those standards have been set at levels to protect the human health with an adequate margin of safety. The following paragraphs describe the source and health effects of the criteria pollutants as described in SCAQMD's Appendix I, Health Effects, to its Draft Final 2016 Air Quality Management Plan *(SCAQMD, December 2016)*. In addition, Table 3-1 below lists the primary emission sources of the criteria pollutants and some of the harmful effects of the pollutants.

Table 3-1
Ambient Air Quality Standards and Key Health and Welfare Effects

Air Pollutant	Federal Standard (NAAQA) Concentration, Averaging Time, Year of NAAQS Review	State Standard (CAAQS) Concentration, Averaging Time	Key Health & Welfare Effects#
Ozone (O_3)	**0.070 ppm, 8-Hour (2015)** 0.075 ppm, 8-Hour (2008) 0.08 ppm, 8-Hour (1997) 0.12 ppm, 1-Hour (1979)	**0.070 ppm, 8-Hour** **0.09 ppm, 1-Hour**	(a) Pulmonary function decrements and localized lung injury in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Increased respiratory related hospital admissions and emergency room visits; (e) Vegetation damage;
Fine Particulate Matter ($PM_{2.5}$)	**35 µg/m³, 24-Hour (2006)** **12.0 µg/m³, Annual (2012)** 15.0 µg/m³, Annual (1997)	**12 µg/m³, Annual**	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Decline in pulmonary function or growth in children; (c) Increased risk of premature death; (d) Increased risk of lung cancer; (e) increased asthma-related hospital admissions; (f) increased school absences and lost work days; (g) possible link to reproductive effects; (h) visibility reduction
Respirable Particulate Matter (PM_{10})	**150 µg/m³, 24-Hour (1997)**	**50 µg/m³, 24-Hour** **20 µg/m³, Annual**	
Carbon Monoxide (CO)	**35 ppm, 1-Hour (1971)** **9 ppm, 8-Hour (1971)**	**20 ppm, 1-Hour** **9.0 ppm, 8-Hour**	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Possible impairment of central nervous system functions; (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	**100 ppb, 1-Hour (2010)** **0.053 ppm, Annual (1971)**	**0.18 ppm, 1-Hour** **0.030 ppm, Annual**	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in children with asthma; (b) Increased airway responsiveness in asthmatics; (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	**75 ppb, 1-Hour (2010)**	**0.25 ppm, 1-Hour** **0.04 ppm, 24-Hour**	Respiratory symptoms (bronchoconstriction, possible wheezing or shortness of breath) during exercise or physical activity in persons with asthma.
Lead (Pb)	**0.15 µg/m³,** **rolling 3-month average (2008)**	**1.5 µg/m³,** **30-day average**	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction; (c) cardiovascular effects, including coronary heart disease and hypertension.
Sulfates (PM_{10}) (SO_4)	**N/A**	**25 µg/m³, 24-Hour**	(a) Decrease in lung function; (b) Aggravation of asthmatic symptoms; (c) Vegetation damage; (d) Degradation of visibility; (e) Property damage.
Hydrogen Sulfide (H_2S)	**N/A**	**0.03 ppm, 1-hour**	Exposure to lower ambient concentrations above the standard may result in objectionable odor and may be accompanied by symptoms such as headaches, nausea, dizziness, nasal irritation, cough, and shortness of breath.

Notes: ppm = parts per million by volume;
Ppb = parts per billion by volume (0.01 ppm = 10 ppb)
Standards in bold are the current, most stringent standards; there may be continuing obligations for former standards
State standards are "not-to-exceed" values based on State designation value calculations
Federal standards follow the 3-year design value form of the NAAQS

Source: SCAQMD, December 2016.

3.4.1.1.1.1 Ozone (O_3)

Ozone (O_3) is one of a number of substances called photochemical oxidants that are formed when reactive organic compounds and nitrogen oxides, both byproducts of the internal combustion engine, react in the presence of ultraviolet sunlight. Outdoor ozone exposures have been associated with a range of negative human health effects. The strongest evidence for negative health impacts are on the respiratory system, and are measured by decreased lung function and increased cell injury. In addition, the 2013 ISA also concluded that there was a likely causal relationship between short-term ozone exposures and cardiovascular effects (such as changes in heart function, and increased systemic inflammation and oxidative stress) as well as respiratory mortality. Although the specific mechanisms of action for ozone effects on various health endpoints have not been fully identified there is evidence of the important roles of oxidation of key enzymes and proteins, inflammatory responses, changes in immune response, and modification and activation of neural reflex pathways *(U.S. EPA 2013 in SCAQMD, December 2016)*.

3.4.1.1.1.2 Particulate Matter

Air borne particulates are a complex group of pollutants that vary in physical, chemical, and biological dimensions. Physically, particles can vary by size, surface area and roughness, shape, and mass. Chemically, they vary by chemical composition. Biologically, they can vary by toxicity. In addition, particles vary by source, and can come from anthropogenic (man-made, such as from combustion of fuels, or fractional abrasion) or "natural" (plants for example, pollen, and spores) origins.

There are also differences in the composition and sources of particles in the different size ranges that may have implications for health effects. The particles in the coarse fraction (PM_{2-5-10}) are mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and resuspension of particles from the ground or road surfaces by wind and human activities, such as agricultural, mining, and construction operations, which may be particularly in rural areas.

In contrast, particles smaller than 2.5 microns are mostly derived from combustion sources, such as automobiles, trucks, and other vehicles exhaust, as well as from stationary combustion sources. The particles are either directly emitted or are formed in the atmosphere from gases that are emitted. Components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations.

A considerable body of scientific evidence from epidemiologic, controlled human exposure, and toxicological studies support the causal determinations for particulate matter and several categories of health endpoints, with the strongest evidence supporting a causal relationship for $PM_{2.5}$ exposures with cardiovascular effects and mortality. Specific cardiovascular effects include cardiovascular deaths, hospital admissions for ischemic heart disease and congestive heart failure, changes in heart rate variability, and markers of oxidative stress, and makers or atherosclerosis.

The scientific evidence also supported a likely causal relationship for $PM_{2.5}$ exposure with respiratory effects such as hospital admissions for COPD or respiratory functions, asthma development, asthma or allergy exacerbation, lung cancer, impacts on lung function, lung inflammation, oxidative stress, and airway health effects in humans. Young children, older adults, and people with pre-existing respiratory or cardiovascular health conditions arfe among those who may be more susceptible to the adverse effects of PM.

3.4.1.1.1.3 Carbon Monoxide

Carbon monoxide (CO) is a gaseous air pollutant that has a high affinity to bond with oxygen-carrying proteins (hemoglobin and myoglobin). The resulting reduction in oxygen supply in the bloodstream is responsible for the toxic effects on CO, which are typically manifested in the oxygen-sensitive organ systems. The effects have been studied in controlled laboratory environments involving exposure of humans and animals to CO, as well as in population-based studies of ambient CO exposure effects. People with deficient blood supply to the heart (ischemic heart disease) are known to be susceptible to the effects of CO. Protection of this group is the basis of the existing National Ambient Air Quality Standards for CO at 35 ppm for one hour and 9 ppm averaged over 8 hours. The health effects of ambient CO have been recently reviewed by the U.S. EPA, with the strongest evidence supporting a likely causal link between short-term CO exposures and cardiovascular outcomes, although studies have linked both short-term and long-term CO exposures to several other health outcomes *(U.S. EPA 2010 in SCAQMD, December 2016).*

3.4.1.1.1.4 Nitrogen Dioxide

Nitrogen dioxide (NO_2) is a gaseous air pollutant that serves as an indicator of gaseous oxides of nitrogen, such as nitric oxide (NO) and other related compounds (NO_x). These gases can undergo photochemical reactions to form ground-level ozone, and are important contributors to ozone pollution levels in the SCAB. Evidence of the health effects of NO_2 is derived from human and animal studies, which link NO_2 with respiratory effects such as decreased lung function and increases in airway responsiveness and pulmonary inflammation *(U.S. EPA 2016 in SCAQMD, December 2016).* The U.S. EPA in 2010 retained the existing standard of 100 ppb (0.1 ppm) averaged over one hour. The standard was designed to protect against increases in airway reactivity in individuals with asthma based on controlled exposure studies, as well as respiratory symptoms observed in epidemiological studies. The revised standard also requires additional monitoring for NO_2 near roadways.

3.4.1.1.1.5 Sulfur Dioxide

Sulfur dioxide (SO_2) is a gaseous air pollutant that has been linked to a variety of respiratory effects, such as decreased lung function and increased airway resistance. Controlled laboratory studies involving human volunteers have clearly identified asthmatics as a very sensitive group to the effects of ambient SO_2 exposures. Healthy subjects have failed to demonstrate any short-term respiratory functional changes at exposure levels up to 1.0 ppm over 1-3 hours. In exercising asthmatics, brief exposure (5-10 minutes) to SO_2 levels between 0.2 to 0.6 ppm can result in increases in airway resistance and decreases in breathing capacity. The response to SO_2 inhalation is observable within two minutes of exposure, increase further with continuing exposure up to five minutes, then remains relatively steady as exposure continues. SO_2 exposure is generally not associated with any delayed reactions or repetitive asthmatic attacks *(U.S. EPA 2008 in SCAQMD, December 2016).* In 2010, the U.S. EPA SO_2 air quality standard was set at 75 ppb (0.075 ppm) averaged over one hour to protect against acute asthma attacks in sensitive individuals.

In epidemiological studies of children and adults, associations of short-term variations in SO_2 levels with increases in respiratory symptoms, emergency department visits, and hospital admissions for respiratory-related causes have been reported. There is uncertainty as to whether SO_2 is associated with the effects or whether other co-occurring pollutants may explain the observed effects, although some studies indicated that the SO_2 effects remained even after accounting for the effects of other pollutants, including $PM_{2.5}$. Coupled with the human clinical studies, these data suggest that SO_2 can trigger asthmatic episodes in individuals with pre-existing asthma *(U.S. EPA 2008 in SCAQMD, December 2016).*

3.4.1.1.1.6 Lead

Lead (Pb) is a toxic air contaminant that is recognized to exert an array of deleterious effects on multiple organ systems. There are a number of potential public health effects at low level exposures, and there is no recognized lower threshold for health effects *(U.S. EPA 2013a in SCAQMD, December 2016)*. The health implications are generally indexed by blood levels which are related to lead exposures both from inhalation as well as from ingestion. Effects include impacts on population IQ as well as heart disease and kidney disease. The initial air quality standard for lead was established by the U.S. EPA in 1978 at a level of 1.5 µg/m^3 averaged over a calendar quarter. U.S. EPA revised the NAAQS for lead in 2008 to a level of 0.15 1.5 µg/m^3 averaged over a rolling three-month period to protect against lead toxicity.

The U.S. EPA has recently reviewed the health effects of ambient lead exposures in conjunction with an Integrated Science Assessment and a review of the NAAQS for lead *(U.S. EPA 2013a, U.S. EPA 2013C in SCAMD, December 2016).* Lead can accumulate and be stored in the bone, and this lead in bone can be released into the blood when the bone is metabolized, which happens naturally and continuously. Blood lead is the most common measure of lead exposure and it represents recent exposure and may be an indicator of total body burden of lead *(U.S. EPA 2013a in SCAQMD, December 2016).*

3.4.1.1.2 Toxic Air Pollutants

Toxic air pollutants (TAPs) are those pollutants that are known or suspected of causing cancer or other serious health effects. Some TAPs are immediately dangerous to human health even in small quantities; some TAPs cause health problems if the exposure extends over a longer period of time. The degree to which a TAP affects a person's health depends on many factors, including the quantity of the pollutant the person is exposed to, the duration and frequency of exposures, the toxicity of the chemical, and the person's state of health and susceptibility.

Scientists estimate that millions of tons of TAPs are released into the air each year. Some air toxics are released from natural sources such as volcanic eruptions and forest fires. However, most originate from manmade sources, including both mobile sources (e.g., cars, trucks and buses) and stationary sources (e.g., factories, refineries, power plants and small businesses). In addition, many routine activities around the home, such as using gas-powered lawn mowers and tools, or using volatile paints and solvents release TAPs into the atmosphere.

The list of TAPs in the Clean Air Act is a long one (275 names) and includes some familiar names such as benzene. Examples of other TAPs include percholoroethylene, methylene chlorine, toluene, dioxin, and metals such as mercury, chromium and lead compounds.

3.4.1.2 Ambient Air Quality

The California Air Resources Board (ARB) provides ambient air quality data for most air basins in the State. A summary of the data available for the greater project area is provided in Tables 3-2, 3-3, 3-4 and 3-5.

Table 3-2
Ozone Trends Summary
National Standards

	Days > Standard			1-hr Observations				8-hr Observations				
	1-hr	8-hr		EENED[1]				0.070 Std.		0.075 Std.		
Year	0.12	0.070	0.075	Max.	1-Yr	3-Yr	D.V.[2]	Max.	D.V.[2]	Max.	D.V.[2]	Coverage
Riverside-Rubidoux												
2016	*1*	69	47	*0.142*	*1.1*	*1.1*	*0.122*	0.104	0.094	0.104	0.094	96
2015	*1*	55	39	*0.132*	*1.0*	*0.7*	*0.122*	0.105	0.093	0.105	0.093	97
2014	*1*	66	41	*0.141*	*1.1*	*0.7*	*0.122*	0.014	0.063	0.014	0.063	96
2013	*0*	36	26	*0.123*	*0.0*	*1.8*	*0.126*	0.103	0.098	0.103	0.098	93
2012	*1*	70	47	*0.126*	*1.1*	*2.1*	*0.126*	0.102	0.098	0.102	0.098	93
2011	*4*	90	67	*0.128*	*4.2*	*1.8*	*0.127*	0.115	0.095	0.115	0.095	93
2010	*1*	74	47	*0.128*	*1.1*	*3.1*	*0.126*	0.098	0.097	0.098	0.097	90
2009	*0*	54	36	*0.116*	*0.0*	*3.4*	*0.135*	0.106	0.099	0.106	0.099	88
2008	*8*	55	64	*0.146*	*8.2*	*6.1*	*0.135*	0.116	0.107	0.116	0.107	99
2007	*2*	66	46	*0.131*	*2.0*	*4.4*	*0.140*	0.111	0.105	0.111	0.105	99
Ambient Standard				*0.12*				0.070				

Notes: All concentrations expressed in parts per million.
The national 1-hour ozone standard was revoked in June 2005. Statistics related to the revoked standard are shown in *italics* or *italics*.
National exceedances shown in **orange**.
An exceedance is not necessarily a violation.
Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.
Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.
Daily maximum 8-hour averages associated with the National 0.075 ppm standard may come from days that don't have sufficient data for the day to be considered valid, provided the daily maximum 8-hour average itself includes sufficient data to be considered valid.
[1] EENED = Estimated Expected Number of Exceedance Days
[2] D.V. = National Design Value
* There was insufficient (or no) data available to determine the value.

Source: arb.ca.gov, 06/19/2017

Table 3-3
Ozone Trends Summary
State Standards

	Days > Standard		1-Hour Observations			8-Hour Averages			Year
Year	1-Hour	8-Hour	Max.	EPDC[1]	D.V.[2]	Max.	EPDC[1]	D.V.[2]	Coverage
Riverside-Rubidoux									
2016	33	71	0.142	0.1277	0.13	0.105	0.1069	0.106	96
2015	31	59	0.132	0.1258	0.13	0.106	0.1058	0.106	95
2014	29	69	0.141	0.1242	0.12	0.105	0.1047	0.105	95
2013	13	38	0.123	0.1330	0.13	0.104	0.1161	0.115	92
2012	27	70	0.126	0.1329	0.13	0.102	0.1142	0.111	92
2011	52	62	0.128	0.1297	0.13	0.115	0.1128	0.111	91
2010	31	84	0.128	0.1320	0.13	0.099	0.1138	0.113	88
2009	25	57	0.116	0.1322	0.13	0.101	0.1187	0.116	86
2008	54	89	0.146	0.1412	0.14	0.116	0.1245	0.117	99
2007	31	69	0.131	0.1377	0.14	0.111	0.1233	0.117	98
Ambient Standard			0.09			0.070			

Notes: All concentrations expressed in parts per million.
State exceedances shown in **green**.
An exceedance is not necessarily a violation.
[1] EPDC = Expected Peak Day Concentration
[2] D.V. = State Designation Value
*There was insufficient (or no) data available to determine the value.

Source: arb.ca.gov, 06/19/2017

Table 3-4
PM_{10} Trends Summary

Year	Est. Days > Std.		Annual Average		3-yr Average		High 24-hr Average		Year Coverage
	Nat'l	State	*Nat'l*	State	*Nat'l*	State	Nat'l	State	
Riverside-Rubidoux									
2016	0.0	*	*38.1*	*	*35*	45	84.0	170.5	96
2015	0.0	92.2	*32.2*	40.0	*34*	45	69.0	107.4	100
2014	0.0	124.7	*36.3*	44.8	*35*	45	100.0	122.7	100
2013	0.0	30.2	*33.2*	34.6	*34*	35	135.0	199.2	100
2012	0.0	51.7	*34.5*	33.4	*34*	34	67.0	82.6	100
2011	*	30.3	*33.5*	32.5	*35*	42	82.7	79.0	0
2010	0.0	42.7	*33.1*	33.8	*41*	42	75.0	72.0	100
2009	0.0	120.1	*40.0*	41.9	--	42	86.8	78.0	0
2008	0.0	140.4	*46.5*	44.8	*54*	57	115.0	108.0	100
2007	3.1	201.9	*59.5*	57.0	*55*	57	559.0	540.0	100
Ambient Standard			--	20			150	50	

Notes: All concentrations expressed in micrograms per cubic meter (µg/m³).
The national annual average PM_{10} standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or italics.
State exceedances shown in green. National exceedances shown in orange.
An exceedance is not necessarily a violation.
Statistics may include data that are related to an exceptional event.
State and national statistics may differ for the following reasons:
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods.
State statistics for 2002 and later are based on *local* conditions.
National statistics are based on *standard conditions.*
State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

*There was insufficient (or no) data available to determine the value.
Source: Air Resources Board 2017 (arb.ca.gov 6/19/2017)

Table 3-5
$PM_{2.5}$ Trends Summary

Year	Est. Days >Nat'l '06 Std.	Annual Average		Nat'l Ann. Std. D.V.[1]	State Ann. D.V.[2]	Nat;l '06 Std. 98th Percentile	Nat'l '06 24-Hr. Std D.V.[1]	High 24-Hour		Year Coverage
		Nat'l	State					Nat'l	State	
Riverside-Rubidoux										
2016	5.1	12.6	12.8	*	17	32.0	36	51.5	60.8	97
2015	10.3	11.9	15.3	*	17	38.1	37	54.7	61.1	93
2014	5.3	12.5	16.8	*	18	39.3	36	48.9	50.6	83
2013	6.2	12.5	17.1	13.2	18	34.6	33	60.3	170.8	96
2012	7.1	13.5	17.6	13.4	18	33.7	32	38.1	182.2	96
2011	4.2	13.6	13.5	14.0	18	31.0	34	50.8	70.0	97
2010	4.2	13.2	17.9	14.9	18	32.0	38	46.5	59.2	97
2009	13.5	15.2	17.1	16.9	20	39.6	45	54.4	54.4	95
2008	15.0	16.4	*	18.1	20	41.0	50	57.6	57.6	92
2007	*	19.0	19.8	19.6	21	54.3	56	75.6	75.6	81
Ambient Standard			12					35	--	

Notes: All concentrations expressed in micrograms per cubic meter (µg/m^3).
State exceedances shown in **green**. National exceedances shown in **orange**.
[1] D.V. = State designation value.
[2] D.V. = National design value.
*There was insufficient (or no) data available to determine the value.
Source: Air Resources Board 2017 (arb.ca.gov 6/19/2017)

The ARB has designated the SCAB as non-attainment for the State ozone, PM_{10} and $PM_{2.5}$ standards. In addition, the U.S. Environmental Protection Agency has designated the South Coast Air Basin as non-attainment for the federal ozone, PM_{10} and $PM_{2.5}$ standards.

3.4.1.3 Greenhouse Gases and Climate Change

Greenhouse gases (GHGs) are any of various gases that absorb infrared radiation, trap heat in the atmosphere and contribute to the greenhouse effect. These various gases are produced from natural processes and human activities. The accumulation of GHGs in the atmosphere influences the long-term range of average atmospheric temperatures to cause global climate change. In 2013, the most recent year for which data are provided, annual statewide GHG emissions in California were 459.28 million metric tons of CO2-equivalent (CARB, 2015).

On 18 December 2014, the CEQ released updated draft guidance on how and when federal agencies should account for the effects of GHG emissions and climate change impacts under NEPA. The guidance uses projected GHG emissions as a proxy for assessing an action's potential climate change impacts. The guidance also directs agencies to consider the direct, indirect, and cumulative effects of the GHG emissions from an action, and take into account the effects of connected actions. The CEQ recommended that emissions equal to or greater than 25,000 metric tons annually should be included in NEPA assessments (CEQ, 2014).

3.4.2 Significance Thresholds

Impacts would be considered significant if the proposed project:

- Exceeds General Conformity Rule de minimis thresholds.

- Exceeds any SCAQMD daily Regional Significance Thresholds.

- Conflicted with or delayed achievement of air quality standards, as set forth in the State Implementation Plan (SIP).

3.4.3 Alternative Analysis

3.4.3.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not construct the recycled water pipeline on federal land. No impacts to air quality would occur from federal land activities, under the No Action Alternative, and conditions would remain as described in Section 3.4.1. If alternative routes, as described earlier, were developed then air quality impacts could well be higher, based on larger lineal project footprints.

3.4.3.1 Preferred Alternative

3.4.3.1.1 Construction

The South Coast Air Quality Management District has suggested threshold criteria for determining significance with respect to construction and operational air quality impacts. Those threshold criteria are shown in Table 3-6.

Table 3-6
Threshold Criteria for Determining Significance

Pollutant	Threshold Criteria, pounds per day	
	Construction	Operation
Carbon Monoxide (CO)	550	550
Sulfur Dioxide (SO_2)	150	150
Nitrogen Oxides (NO_X)	100	55
Particulates (PM_{10})	150	150
Particulates ($PM_{2.5}$)	55	55
Volatile Organic Compounds (VOC)	75	55
Lead (Pb)	3	3
Toxic Air Contaminants (TACs), Odor and GHG Thresholds		
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 and Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO_2eq for industrial facilities	

Source: SCAQMD CEQA Handbook, 1993, revised March 2011

These threshold criteria are used in this dEA in determining significance of air quality impacts.

During Phase 1 of its Proposition 1 – Reclaimed Water Distribution Facilities Project, DWP plans to construct the WRCRWA Reclaimed Water Pipeline. That 20-inch diameter pipeline would extend approximately 5,000 lineal feet from WRCRWA's facilities at 14634 River Road to the intersection of River Road and Bluff Street. Due to the fact that

the actual date of construction is not known at this time, a "worst-case" scenario[2] is analyzed for the air quality impacts associated with future construction.

The following assumptions were utilized in estimating the air emissions from construction equipment for the WRCRWA Reclaimed Water Pipeline Project:

- Trenching would progress at an average rate of 100 lineal feet per day.
- Approximately 0.05 acres per day would be disturbed during pipeline installation.
- There would be approximately 2 heavy-heavy duty diesel trucks moving supplies to the site and removing asphalt and other waste materials from the site. It is anticipated that each truck would travel approximately 100 miles per day.
- There would be approximately 2 pickup trucks traveling to and from the site by inspectors. Mileage for each pickup would be approximately 100 miles per day.
- Approximately 10 construction workers would be involved in excavation and other pipeline installation activities at the site on the peak day of activities. Mileage for worker commuters would be approximately 50 per day.
- In addition to the truck traffic and worker commute traffic discussed above, the following construction equipment would be on the job site:

Equipment	Number	Horsepower[a]	Load Factor[b]	Hours per Day
Air Compressors	1	78	0.48	4.0
Concrete Saws	1	81	0.73	1.0
Cranes	1	226	0.29	1.0
Excavators	1	163	0.38	6.0
Off Highway Trucks	1	400	0.38	4.0
Pavement Breakers	1	126	0.42	1.0
Pavers	1	131	0.36	1.0
Plate Compactors	1	8	0.43	1.0
Sweeper/Scrubbers	1	64	0.46	1.0
Tractors/Loaders/Backhoes	1	98	0.37	6.0
Water Trucks	1	189	0.38	2.0

Notes:

[1] 2011 OFFROAD default values.
[2] Percentage of the engine's maximum horsepower rating that the equipment actually operates.

K.S. Dunbar & Associates, Inc., developed an Excel Spreadsheet model, based on the California Air Resources Board's 2011 OFFROAD emission factors, that calculates estimated emissions from construction activities. That model was

[2] Although construction may not start until after January 1, 2017, that start date was used in this air quality analysis to provide a "worst case" scenario. Due to the phasing out of older equipment, increased regulatory requirements, and new technology, the emissions factors decrease somewhat on an annual basis.

used to estimate construction related emissions from off-road heavy construction equipment. Based on construction occurring in 2017, the model generated estimated construction emissions as shown in Table 3-7 (detailed model results are contained in Appendix A)[3].

Table 3.-7
Estimated Maximum Day Emissions from Off-Road Heavy Construction Equipment
(pounds per day)[a]

	ROG	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4
Construction Year 2017	1.54	15.90	17.42	0.02	0.16	0.14	2,318	0.66
Threshold Limits[b]	75	550	100	150	150	55	N/A	N/A
Localized Significance Thresholds[c]	N/A	887	148	N/A	12	4	N/A	N/A

[a] Use of particulate traps reduces PM_{10} and $PM_{2.5}$ by 85% and oxidation catalysts reduces NO_x by 15%.
[b] Construction-related threshold limits developed by SCAQMD to determine significance.
[c] Localized threshold limits developed by SCAQMD to determine significance at construction sites of up to 1 acre and the nearest receptor within 50 meters of the construction site.

As can be seen by the data in Table 3-7, emissions from heavy construction equipment during pipeline construction would not exceed SCAQMD's construction-related threshold limits or localized threshold limits.

There would also be two heavy-duty trucks traveling to and from the job site as well as two pickup trucks utilized by inspectors at the job site. Based on the assumption that each heavy-duty truck and pickup travels 100 miles per day, exhaust emissions would be as shown in Table 3-8.

Table 3-8
Estimated Maximum Day Emissions from On-Road Vehicles

Equipment	Pollutant (pounds per day)							
	ROG	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4
On-Road Trucks	0.08	0.29	2.62	0.01	0.03	0.02	713	0.01
Pickups	0.01	0.12	0.03	0.00	0.02	0.01	217	0.01
Totals	0.09	0.41	2.65	0.01	0.05	0.03	930	0.02

Vehicles owned by construction workers would be an additional source of air pollutants. An estimate of emissions based on 10 worker vehicles per day of which 100 percent are pickup trucks (gross vehicle weight of 8,500 pounds or less) with an average round trip of 50 miles is presented in Table 3-9.

Table 3-9
Construction Worker Commute Vehicle Emissions

Pollutant (pounds per day)							
ROG	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4
0.02	0.29	0.07	0.01	0.04	0.02	543	0.03

Installation of the pipeline would create fugitive dust emissions. It is estimated that fugitive dust emissions from construction activities on disturbed soil approximate 5 pounds per acre per day (PM_{10}) with no mitigation. However, the application of water as required would reduce the emissions by 61 percent. As stated above, it is anticipated that approximately 0.05 acres would be disturbed each day. Therefore, the resulting PM_{10} emissions would be estimated at 0.1 pounds per day. SCAQMD also estimates that the $PM_{2.5}$ emissions in fugitive dust are equal to 21 percent of the

[3] Should the construction period be delayed, the emissions from heavy construction equipment would be less due to technology improvements and phasing out of older equipment. Therefore, the emissions shown are considered the worst-case scenario.

PM_{10} emissions in fugitive dust (SCAQMD, October 2006). Therefore, the $PM_{2.5}$ emissions would equal 0.02 pounds per day.

The total estimated daily emissions from the construction of WRCRWA Reclaimed Water Pipeline Project are shown in Table 3-10.

Table 3-10
Total Estimated Construction Emissions[a]

Source	Pollutant (pounds per day)							
	ROG	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4
Construction Equipment	1.54	15.90	17.42	0.02	0.16	0.14	2,318	0.66
On-Road Vehicles	0.09	0.41	2.65	0.01	0.05	0.03	930	0.02
Worker Commutes	0.02	0.29	0.07	0.01	0.04	0.02	543	0.03
Fugitive Dust	0.00	0.00	0.00	0.00	0.10	0.02	0.00	0.00
Total	1.65	16.6	20.14	0.04	0.35	0.21	3,791	0.71
Threshold Limits[b]	75	550	100	150	150	55	N/A	N/A
Localized Thresholds[c]	N/A	887	148	N/A	12	4	N/A	N/A

[a] Use of particulate traps reduces PM_{10} and $PM_{2.5}$ by 85% and oxidation catalysts reduces NO_x by 15%.
[b] Construction-related threshold limits developed by SCAQMD to determine significance.
[c] Localized significant thresholds developed by SCAQMD to determine localized significance, based on a work area of up to 1 acre and a 50-meter distance to the nearest receptor.

As shown in Table 3.4.3.1.1-5, the total estimated emissions from construction of the WRCRWA Reclaimed Water Pipeline would not exceed the construction-related threshold limits for significance or the localized thresholds.

3.4.3.2.2 Greenhouse Gases and Climate Change

Under the Proposed Action, construction activities associated with the pipeline would result in short-term GHG emissions from heavy equipment and construction worker vehicles. However, the total amount of GHG emissions associated with the Proposed Project (310 metric tons per year) would not approach the 25,000-metric ton threshold provided by CEQ. Consequently, the Proposed Action would result in less than significant impacts related to GHG and climate change.

3.4.3.2.3 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline enroute to its distribution points. Following the construction phase, no personnel or daily activities would be routinely associated with the Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. As such air quality and greenhouse gas impacts associated with operations and maintenance would be negligible and would not approach any of the significance thresholds previously identified.

3.4.4 Environmental Commitments

Although there were no significant impacts to air quality identified, the City of Corona committed to including the following best management practices as part of its Mitigation Monitoring and Reporting Program adopted for this Project:

DWP will:

- Appoint a construction relations officer to act as a community liaison concerning on-site construction activities including resolution of issues related to PM_{10} generation.

- Add the following best management practices in its contract documents for this project:

  The contractor shall:

  - Utilize electricity from power poles instead of from temporary diesel or gasoline power generators, when feasible.

  - Require the use of 2010 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export) and if the lead agency determines that 2010 model year or newer diesel trucks cannot be obtained the contractor shall use trucks that meet EPA 2007 model year NO_x emissions requirements.

  - Require that all on-site construction equipment meet EPA Tier 3 or higher emissions standards according to the following:

    - ✓ All off-road diesel-powered construction equipment greater than 50 hp shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

    - ✓ A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

  - Maintain construction equipment engines by keeping them properly tuned and maintained according to manufacturer's specifications.

  - Use alternative fuels or clean and low-sulfur fuel for equipment.

  - Idle trucks in accordance with the Airborne Toxic Control Measure (ACTM) to Limit Diesel Fueled Commercial Motor Vehicle Idling and other applicable laws.

  - Spread soil binders on site, where appropriate, unpaved roads and staging areas.

  - Water site and equipment as necessary to control dust.

- Sweep all streets at least once per day using SCAQMD Rule 1186 certified street sweepers or roadway washing trucks if visible soil materials are carried to adjacent streets.
- Conduct operations in accordance with SCAQMD Rule 403 requirements.
- If necessary, wash off trucks leaving the site.
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114.

3.5 Noise

3.5.1 Baseline Conditions

The ambient noise level of a region is the total noise generated within the specific environment and is usually composed of sounds emanating from natural and manmade sources. Noise levels monitored in a region tend to have wide spatial and temporal variation due to the great diversity of contributing sources. This is especially true for the greater Project area with its blend of open space, agricultural, commercial and industrial land uses.

Characterization of the Project area noise levels is difficult due to the lack of actual field measurements. The federal land in question is an existing sloped uninhabited open space near the River Road corridor, which due to traffic would be louder than the field. Very little noise measurement data are available for the Project area in general. However, typical noise levels for areas like the Project area are in the range of 45 to 55 dB(A).

Generally, the noise levels in the Project area are affected by natural and manmade sources. However, the sound levels are more strongly influenced by human rather than natural sound sources. Within the Project area, the major sources of noise include adjacent vehicular traffic and aircraft flyovers

3.5.2 Significance Thresholds

Noise effects would be considered significant if they result in any of the following:

- Expose sensitive receptors to noise levels above thresholds established by the Cities of Eastvale and Norco, the US Department of Housing and Urban Development (HUD), and/or the US EPA.
- Result in a substantial temporary or periodic increase in ambient noise levels in the proposed project area above levels existing without the Proposed Project.
- Result in a substantial permanent increase in ambient noise levels in the proposed project area above levels existing without the Proposed Project.

3.5.3 Alternative Analysis

3.5.3.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not construct the recycled water pipeline on federal land as proposed. No impacts to noise would occur under the No Action Alternative and conditions would remain as described in Section 3.5.1.

3.5.3.2 Preferred Alternative

3.5.3.1.1 Construction

The analysis of noise impacts resulting from any project must consider both the construction and operational phases. However, due to the nature of this Project, very little additional noise would be associated with the operational phase. Therefore, the following noise analysis concentrates on the construction of the recycled water pipeline.

Operation of equipment used during construction would temporarily increase noise levels, during work hours in daylight, to well in excess of ambient noise levels. The construction noise would vary with the particular construction stage in progress due to the different pieces of construction equipment being used.

Table 3-11 lists equipment expected to be used during construction and identifies the number of pieces of equipment typically used, their utilization factor, and their reference sound level at a distance of 50 feet.

Table 3-11
Construction Equipment List and Reference Sound Levels

Equipment	Number Required	Horsepower Rating	Utilization Factor	Nominal Noise Level, Leq at 50 feet dB(A)
Air Compressor	1	78	0.48	78
Concrete Saw	1	81	0.73	78
Crane	1	226	0.29	81
Excavator	1	163	0.38	81
Off-Highway Trucks	2	400	0.38	84
Pavement Breaker	1	131	0.36	86
Paver	1	126	0.42	77
Plate Compactor	1	8	0.43	83
Sweeper	1	64	0.46	82
Tractor/Loader/Backhoe	1	98	0.37	78
Water Truck	1	189	0.38	82
Pickups	2	N/A	1.00	72
On-Road Trucks	2	225	1.00	82

As shown above, noise associated with construction could be locally significant during the construction period. However, the exact degree of impact on the surrounding community would depend on the type of equipment being used at any one time, the distance from the equipment, and the hours of operation as well as (in the case of local wildlife activities) the specific time of year. It is anticipated that noise levels associated with construction would range

from 72 to 84 dB(A) within 50 feet of the equipment being used. These noise levels would be further attenuated by the distance to the nearest receptor.

3.5.3.2.3 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline enroute to its distribution points. Following the construction phase, no personnel or daily activities would be routinely associated with the Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. As such noise impacts associated with operations and maintenance would be negligible and would not approach any of the significance thresholds previously identified.

3.5.4 Environmental Commitments

In its July 2016 Mitigation Monitoring and Reporting Program adopted for this Project, the City of Corona committed to the following:

DWP will add the following best management practices in its standard construction specifications:

- All equipment used during construction shall be muffled and maintained in good operating condition. All internal combustion engines shall be fitted with well-maintained mufflers in accordance with manufacturers' recommendations.

In addition, allowances to project scheduling in light of local wildlife (see below) may also be adopted as needed to reduce impacts to a less than significant level.

3.6 Biological Resources, Including Listed Species

3.6.1 Baseline Conditions

Prior to conducting the following habitat assessment, staff biologist Travis J. McGill conducted a literature review and records search for sensitive biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of special-status plant and wildlife species and their proximity to the Project site were determined through a query of the California Department of Fish and Wildlife's (CDFWs) CNDDB Rarefind 5, the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of special-status species published by CDFW, and the United States Fish and Wildlife Service (USFWS) species listings and the Western Riverside County MSHCP and associated technical documents. Standard field guides and texts on sensitive and non-sensitive biological resources were reviewed for habitat requirements, as well as the following resources:

- Annual Prado Basin least Bell's vireo survey data (2017), Orange County Water District biologists;
- Google Earth Pro historic and aerial imagery;
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey;
- USFWS Critical Habitat designations for Threatened and Endangered Species; and
- Western Riverside County MSHCP and RCIP Conservation Summary Report.

The literature review provided a baseline from which to inventory the biological resources potentially occurring on the Project site. Additional recorded occurrences of these species found on or near the Project site were derived from database queries. The CNDDB ArcGIS database was used, in conjunction with ArcGIS software, to locate the nearest occurrence and determine the distance from the Project site.

3.6.1.1 Habitat Assessment/Field Investigation

Following the literature review, the staff biologist inventoried and evaluated the extent and conditions of the plant communities found within the pipeline alignment and proposed laydown area and, in addition, identified any jurisdictional features, riparian/riverine habitat, as well as natural corridors and linkages that may support the movement of wildlife through the area. Special attention was given to any sensitive habitats and/or undeveloped areas, which have higher potentials to support sensitive flora and fauna species. Areas providing suitable habitat for burrowing owl were closely surveyed for signs of presence during the habitat assessment.

Areas providing suitable habitat for burrowing owl were closely surveyed for suitable burrows during the habitat assessment, consisting of natural and non-natural substrates in areas with low, open vegetation. Methods to detect the presence of burrowing owl included direct observation, aural detection, and signs of presence including pellets, white wash, feathers, or prey remains. The location of remnant and occupied burrows/nests were documented, if found.

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features as well as riparian/riverine areas were noted.

3.6.1.1.1 Existing Site Conditions

The pipeline alignment ranges in elevation from 550 feet above mean sea level to 580 feet above mean sea level and generally slopes from north to south. Based on the NRCS USDA Web Soil Survey, the pipeline alignment is underlain by the following soil units Dello loamy fine sand, Dello loamy sand, Grangeville fine sandy loam, Grangeville loamy fine sand, Grangeville sandy loam, Ramona very fine sandy loam, Terrace escarpments, and water.

The area south of the Santa Ana River is primarily composed of residential developments, while the area north of the Santa Ana River is composed of a mix of residential developments, wastewater facilities, agricultural and livestock land uses, and undeveloped vacant lots. The section of the Santa Ana River that the River Road Bridge crosses over supports a southern cottonwood willow riparian forest plant community.

3.6.1.1.1.1 Vegetation

The proposed pipeline alignment would run within a previously disturbed area with scattered individual ruderal plants, and in an existing paved road and a dedicated space in the River Road Bridge. No plant communities would be affected from installation of the proposed pipeline. Because the pipeline will be installed in a dedicated space in the River Road Bridge, no impacts to the riparian habitats associated with the Santa Ana River will occur.

The proposed laydown area is located within a vacant parcel on the southeast corner of the intersection of River Road and Bluff Street. The vacant parcel supports a disturbed land cover type that has been subject to routine weed abatement activities, stockpiling activities, and agricultural land uses.

3.6.1.1.1.2 Wildlife

Because the vacant federal land has been used for various outdoor recreation group activities, the specific pipeline alignment provides limited habitat for wildlife species except those adapted to a high degree of human presence and development. Because the proposed pipeline will be installed within the existing paved road and a dedicated space in the River Road Bridge, wildlife species are not expected to be directly impacted from installation of pipeline. However, riparian vegetation several hundreds of feet south of the proposed line will contain nesting birds during the biological season.

The majority of the wildlife observed during the habitat assessment consisted of avian species including red-tailed hawk (*Buteo jamaicensis*), killdeer (*Charadrius vociferus*), American crow (*Corvus brachyrhynchos*), house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), house sparrow (*Passer domesticus*), California towhee (*Pipilo crissalis*), black phoebe (*Sayornis nigricans*), Anna's hummingbird (*Calypte anna*), and lesser goldfinch (*Spinus psaltria*).

3.6.1.1.1.3 Nesting Birds

The River Road Bridge and plant communities adjacent to the pipeline alignment provides suitable nesting, foraging, and cover habitat for year-round and seasonal avian residents, and migrating songbirds that could occur in the area. No nesting birds or breeding behaviors were observed during the field survey.

3.6.1.1.1.4 Migratory Corridors and Linkages

Habitat linkages provide connections between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages, but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet still inadequate for others. Wildlife corridors are features that allow for the dispersal, seasonal migration, breeding, and foraging of a variety of

wildlife species. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

Although the proposed pipeline alignment crosses over the Santa Ana River, which is a regional wildlife movement corridor, the pipeline will be installed within the existing paved road and a dedicated space in the River Road Bridge and will not impact any native plant communities or the Santa Ana River. As a result, installation of the pipeline is not expected to disrupt or have any adverse effects on any migratory corridors or linkages associated with the Santa Ana River.

3.6.1.1.1.5 Jurisdictional Areas

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredge or fill materials into "waters of the United States" pursuant to Section 404 of the CWA and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFW regulates alterations to streambed and bank under Fish and Game Code Sections 1600 et seq., and the Regional Board regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

The Santa Ana River is a relatively permanent water that drains into the Pacific Ocean (a Traditional Navigable Water) that would be considered jurisdictional "waters of the United States" or "waters of the State" and fall under the regulatory authority of the United States Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), and the California Department of Fish and Wildlife (CDFW). Impacts to the Santa Ana River would require a Clean Water Act (CWA) Section 404 permit from the Corps, CWA Section 401 Water Quality Certification from the Regional Board, and/or a Section 1602 Streambed Alteration Agreement (SAA) from CDFW. No other drainage features were observed within alignment of the proposed recycled water pipeline.

The proposed pipeline will be installed outside of the jurisdictional limits of the Santa Ana River. As a result, no regulatory agency approvals are anticipated. In addition, no jurisdictional features were observed within the proposed laydown area.

.3.6.1.1.1.6 Sensitive Biological Resources

The CNDDB, CNPS, and the USFWS IPaC were queried for reported locations of special-status plant and wildlife species as well as sensitive natural plant communities occurring within the Corona North USGS 7.5-minute quadrangle and within the vicinity of the proposed pipeline alignment. Specifically, the CNDDB was queried within a 2-mile buffer of the proposed pipeline alignment due to the site's isolation from undisturbed native habitat and existing development on and surrounding the Project site. This assessment evaluated the conditions of the habitat(s) within the boundaries of the Project site to determine if the existing plant communities have the potential to provide suitable habitat(s) for special-status plant and wildlife species.

The CNDDB and CNPS were queried for reported locations of listed and sensitive plant and wildlife species as well as sensitive natural plant communities in the Corona North and Corona South USGS 7.5-minute quadrangles. A search of published records of these species was conducted within these quadrangles using the CNDDB Rarefind 5 online software. The CNPS Inventory of Rare and Endangered Vascular Plants of California and MSHCP supplied information

regarding the distribution and habitats of vascular plants in the vicinity of the Project site. The habitat assessment was used to assess the ability of the plant communities found on-site to provide suitable habitat for relevant special-status plant and wildlife species.

The literature search identified eleven (11) special-status plant species thirty (30) special-status wildlife species, and seven (7) sensitive habitats as having potential to occur within the Corona North and Corona South quadrangles. Special-status and wildlife species were evaluated for their potential to occur within the Project boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in Attachment C, *Potentially Occurring Special-Status Biological Resources*, and discussed below.

3.6.1.1.1.6.1 Special-Status Plants

According to the CNDDB and CNPS, eleven (11) special-status plant species have been recorded in the Corona North and Corona South quadrangles (refer to Attachment C). No special-status plant species were observed on-site during the habitat assessment. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the no special-status plant species are expected to occur within the pipeline alignment because it will be installed within the existing paved road and dedicated space within the River Road Bridge. Due to the heavily disturbed nature of the proposed laydown area, no special-status plant species are expected to occur on that site.

3.6.1.1.1.6.2 Special-Status Wildlife

According to the CNDDB, thirty (30) special-status wildlife species have been reported in the Corona North and Corona South quadrangles (refer to Attachment C). No sensitive wildlife species were observed on-site during the habitat assessment. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the proposed pipeline alignment and laydown area do not provide suitable habitat for any of the special-status wildlife species known to occur in the area. Several hundred feet to the south, the least Bell's vireo (*vireo bellii pusillus*) is known to populate the nearby suitable habitat and so measures to avoid adverse effects, provided below, would be taken in consultation with the U.S. Fish and Wildlife Service. This proposed work on Federal land would be implemented during Sept. 15-March 15 of the calendar year which allows the Corps and Service to concur on a May Affect, Not Likely to Adversely Affect the vireo or other sensitive species.

3.6.1.1.1.6.3 Special-Status Plant Communities

The CNDDB lists seven (7) special-status plant communities as being identified within the Corona North and Corona South quadrangles: Southern California Arroyo Chub/Santa Ana Sucker Stream, Southern Coast Live Oak Riparian Forest, Southern Cottonwood Willow Riparian Forest, Southern Interior Cypress Forest, Southern Riparian Forest, Southern Sycamore Alder Riparian Woodland, and Southern Willow Scrub. No special-status plant communities occur within the pipeline alignment. However, a Southern Cottonwood Willow Riparian Forest plant community is found adjacent to the Project site within the Santa Ana River. No impacts to the Santa Ana River or its habitats will occur.

3.6.1.1.1.6.3 Critical Habitat

Under the federal Endangered Species Act, "Critical Habitat" is designated at the time of listing of a species or within one year of listing. Critical Habitat refers to habitat or a specific geographic area that contains the elements and features

that are essential for the survival and recovery of the species. Maintenance of these physical and biological features requires special management considerations or protection, regardless of whether individuals or the species are present or not. In the event that a project may result in take or adverse modification to a species' designated Critical Habitat, a project proponent may be required to engage in suitable mitigation. However, consultation for impacts to Critical Habitat is only required when a project has a federal nexus (i.e. occurs on federal land, is issued federal permits [e.g. Corps Section 404 permit, or Corps Section 408 permit], or receives any other federal oversight or funding). If a project does not have a federal nexus, Critical Habitat consultations are not required.

The proposed alignment crosses over the Santa Ana River, which has been designated as Critical Habitat for southwestern willow flycatcher (*Empidonax trailli extimus*), Santa Ana sucker (*Catostomus santaanae*), and least Bell's vireo (*vireo bellii pusillus*). However, the pipeline will be installed in open spaces, within the existing paved road, and in dedicated space in the River Road Bridge and will not impact any native wildlife or plant communities or the Santa Ana River. Therefore, no impacts to federally designated Critical Habitat will occur from implementation of the proposed project. Absent other factors or issues, this is *No-Effect* to listed species and no *Adverse Modification* to Critical Habitat.

3.6.1.1.2 Western Riverside County MSHCP

The Proposed Project is located within the Cities of Riverside and Norco Area Plan and Eastvale Area Plan of the MSHCP, but is not located within any Criteria Cells or MSHCP Conservation Areas. However, the proposed alignment is located immediately adjacent to Existing Core A and MSHCP designated Public/Quasi-Public Lands associated with the Santa Ana River.

3.6.1.1.2.1 Section 6.1.2 Riparian/Riverine Areas and Vernal Pools

3.6.1.1.1.1.1 Riparian/Riverine Areas

As identified in Section 6.1.2 of the MSHCP, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools,* riparian/riverine areas are defined as areas dominated by trees, shrubs, persistent emergent plants, or emergent mosses and lichens which occur close to or are dependent upon nearby freshwater, or areas with freshwater flowing during all or a portion of the year. Conservation of these areas is intended to protect habitat that is essential to a number of listed or special-status water-dependent fish, amphibian, avian, and plant species. If all impacts to riparian/riverine habitat cannot be avoided, a Determination of Biologically Equivalent or Superior Preservation (DBESP) must be developed to address the replacement of lost functions of habitats in regards to the listed species. This assessment is independent from considerations given to "waters of the U.S." and "waters of the State" under the CWA and the California Fish and Game Code. The Santa Ana River and associated riparian vegetation also qualify as riparian/riverine habitat under the Section 6.1.2 of the MSHCP. The extent of the riparian/riverine habitat within the Santa Ana River is synonymous with the jurisdiction of CDFW. As a result, any alteration or loss of riparian/riverine habitat would require the preparation of a (DBESP) under the MSHCP. This analysis is separate from any regulatory approvals/permitting by the Corps, Regional Board, and CDFW.

However, the proposed alignment will be installed entirely outside of the Santa Ana River and associated plant communities. As a result, a DBESP will not be required for installation of the proposed pipeline.

3.6.1.1.1.2 Vernal Pools and Fairy Shrimp Habitat

One of the factors for determining the suitability of the habitat for fairy shrimp would be demonstrable evidence of seasonal ponding in an area of topographic depression that is not subject to flowing waters. These astatic pools are typically characterized as vernal pools. More specifically, vernal pools are seasonal wetlands that occur in depression areas without a continual source of water. They have wetland indicators of all 3 parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetland indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season. The determination that an area exhibits vernal pool characteristics and the definition of the watershed supporting vernal pool hydrology is made on a case-by-case basis. Such determinations that should be considered include the length of time the areas exhibit upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland. The seasonal hydrology of vernal pools provides for a unique environment, which supports plants and invertebrates specifically adapted to a regime of winter inundation, followed by an extended period when the pool soils are dry.

Vernal pools are seasonally inundated, ponded areas that only form in regions where specialized soil and climatic conditions exist. During fall and winter rains typical of Mediterranean climates, water collects in shallow depressions where downward percolation of water is prevented by the presence of a hard pan or clay pan layer (duripan) below the soil surface. Later in the spring when rains decrease and the weather warms, the water evaporates and the pools generally disappear by May. The shallow depressions remain relatively dry until late fall and early winter with the advent of greater precipitation and cooler temperatures. Vernal pools provide unusual "flood and drought" habitat conditions to which certain plant and wildlife species have specifically adapted as well as invertebrate species such as fairy shrimp.

The MSHCP lists two general classes of soils known to be associated with listed and special-status plant species; clay soils and Traver-Domino Willow association soils. The specific clay soils known to be associated with listed and special-status species within the MSHCP plan area include Bosanko, Auld, Altamont, and Porterville series soils, whereas Traver-Domino Willows association includes saline-alkali soils largely located along floodplain areas of the San Jacinto River and Salt Creek. Without the appropriate soils to create the impermeable restrictive layer, none of the special-status plant or wildlife species associated with vernal pools can occur on the project site.

None of these soils have been documented within the proposed pipeline alignment. Because the pipeline will be installed within the existing paved road and dedicated space in the River Road Bridge no undisturbed soils will be impacted. Therefore, no impacts to vernal pools or fairy shrimp habitat will occur from implementation of the Proposed Project.

3.6.1.1.2.2 Section 6.1.3 Narrow Endemic Plant Species

Based on the RCIP query and review of the MSHCP, it was determined that the project site is located immediately adjacent to the designated survey area for Narrow Endemic Plant Species San Diego ambrosia, Brand's phacelia, and San Miguel savory as depicted in Figure 6-1 within Section 6.1.3 of the MSHCP. The Proposed Project will be installed within existing paved streets and a dedicated space in the River Road Bridge that does not provide suitable habitat for Narrow Endemic Plant Species.

3.6.1.1.2.3 Section 6.1.4 Urban/Wildlands Interface Guidelines

The Project site is not located within any Criteria Cells, corridors, or linkages; however, the proposed alignment is located immediately adjacent to Existing Core A and MSHCP designated Public/Quasi-Public Lands associated with the Santa Ana River. Phase 1 will be installed within existing paved road and a dedicated space in the River Road Bridge; therefore, indirect project-related impacts to drainage, toxics, lighting, noise, invasive plant species, barriers, and grading/land development will not occur.

3.6.1.1.2.4 Section 6.3.2 Additional Survey Needs and Procedures

The RCIP Conservation Summary Report Generator was queried to determine if the MSHCP lists any survey requirements for the Project. The summary report identified that the Project site is located immediately adjacent to the designated survey area for burrowing owl. Phase 1 will be installed within existing paved road and a dedicated space in the River Road Bridge that does not provide suitable habitat for burrowing owl.

3.6.2 Significance Thresholds

Based on the existing conditions discussed above, effects of the Proposed Project would be significant if they:

- Adversely impact any federal or state special-status wildlife species, plants, or habitat.
- Adversely impact any riparian habitat or other sensitive natural communities.
- Adversely impact federally protected wetlands or Waters of the United States or waters of the state through direct removal, filling, and/or hydrological interruption.

Additional information will be incorporated into this section, if necessary, following interagency coordination with the USFWS and the California Department of Fish and Wildlife (CDFW). As outlined in 33 CFR Part 325, coordination will take place (e.g., per the Fish and Wildlife Coordination Act) to ensure relevant agencies are provided an opportunity to make known concerns regarding sensitive species and/or their habitat.

3.6.3 Alternative Analysis

3.6.2.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not construct the recycled water pipeline on federal lands. No direct impacts to biological resources on federal land would occur under the No Action Alternative and conditions would remain as described in Section 3.6.1. However, note that the vireo and flycatcher are also State-listed species and it is possible that, given alternate routes, these same species could be affected.

3.6.2.2 Preferred Alternative

3.6.2.2.1 Construction

3.6.3.2.1.1 Special-Status Plants

As previously stated (Section 3.6.1.1.1.6.1), no special-status plant species were observed on-site during the habitat assessment. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the no special-status plant species are expected to occur within the pipeline alignment or at the laydown area.

3.6.3.2.1.2 Special-Status Wildlife

As previously stated (Section 3.6.1.1.1.6.2), according to the CNDDB, twenty-eight (28) special-status wildlife species have been reported in the Corona North and Corona South quadrangles (refer to Attachment C). Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that no special-status wildlife species are expected to occur within the pipeline alignment or laydown area. However, in adjacent habitat areas, it is likely that during the avian nesting season, listed or other species do exist and their protection accounted for, as described below.

3.6.3.2.1.3 Nesting Birds

As previously stated in Section 3.6.1.1.1.3, the River Road Bridge and plant communities adjacent to the pipeline alignment provides suitable nesting, foraging, and cover habitat for year-round and seasonal avian residents, and migrating songbirds that could occur in the area. No nesting birds or breeding behaviors were observed during the field survey. However, if construction is scheduled during the avian nesting season (typically approximately February 1st through August 31st) a nesting bird survey will be required to ensure compliance with the Migratory Bird Treaty Act (MBTA). If active nests are identified, a protective buffer (i.e., typically up to a 500-foot "no work zone" depending upon the species in question) around the nest may be delineated and work in other areas may continue. However, depending on the location of the nest, construction activities may need to be demobilized and cause a delay in progress until after the birds have fledged (e.g., typically six weeks). Coordination with appropriate agencies may be required to determine the best avoidance, minimization and compliance measures for the particular species. It is recommended that the proposed work areas and laydown yards within non-native grassland be mowed in the winter to discourage nesting prior to and during construction. Conservatively, encountering a nesting bird could result in extending the construction timeline from a best-case scenario of approximately 10 weeks to as many as 12 weeks. Compliance with the MBTA would ensure that impacts to nesting birds would be avoided and significant effects would not result.

3.6.3.2.1.4 Jurisdictional Waters

As previously stated in Section 3.6.1.1.1.5, the Santa Ana River is a relatively permanent water that drains into the Pacific Ocean (a Traditional Navigable Water) that would be considered jurisdictional "waters of the United States" or "waters of the State" and fall under the regulatory authority of the United States Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), and the California Department of Fish and Wildlife (CDFW). Impacts to the Santa Ana River would require a Clean Water Act (CWA) Section 404 permit from the Corps, CWA Section 401 Water Quality Certification from the Regional Board, and/or a Section 1602 Streambed Alteration

Agreement (SAA) from CDFW. No other drainage features were observed within alignment of the proposed recycled water pipeline.

The proposed alignment will be installed within the existing paved road and a dedicated space in the River Road Bridge outside of the jurisdictional limits of the Santa Ana River. As a result, no regulatory agency approvals are anticipated.

Construction of the Preferred Alternative would not result in significant impacts to biological resources.

3.6.3.2.2 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline enroute to its distribution points. Following the construction phase, no personnel or daily activities would be routinely associated with the Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. As such biological resources impacts associated with operations and maintenance would be negligible and would not approach any of the significance thresholds previously identified.

3.6.4 Environmental Commitments

A query of the Riverside County Integrated Project (RCIP) Conservation Summary Report Generator found that the proposed project sites are located within the designated survey area for burrowing owl *(Athene cunicularia)*. Based on habitat requirements, the availability and quality of those habitats on-site, it was determined that the burrowing owl is presumed absent due to lack of suitable habitat and existing development/disturbance.

However, in order to comply with the conservation goals of the MSCHP and to ensure burrowing owl and nesting birds remain absent from the Project sites, DWP committed to the following in its July 2016 Mitigation Monitoring and Reporting Program for the Proposed Project:

- A burrowing owl clearance survey shall be conducted prior to any ground disturbing activities in accordance with the CDFW 2012 Staff Report on Burrowing Owl Mitigation. Two pre-construction clearance surveys shall be conducted 14-30 days and 24 hours prior to ground disturbing activities to document the continued absence of burrowing owl from the Project site.

- Regarding the vireo/flycatcher and their critical habitat setting, it is recommended that construction work on the federal land be conducted outside these species' annual nesting season, that is, outside of approximately March 1-September 1, in order to achieve a No Effect to these species. Otherwise, pre-construction surveys should also be planned if the work might possibly extend into the nesting season. The Corps will consult with the U.S. Fish and Wildlife Service for further planning purposes if needed. While several related periods of time are recognized as nesting season for several types of birds, the March 1-Sept. 1 is recognized and used locally for local planning regarding riparian avian communities.

- If ground-disturbing activities or removal of any trees, shrubs, or any other potential nesting habitat are scheduled within the avian nesting season (nesting season generally extends from February 1 - August 31; see above regarding different dates), a pre-construction clearance survey for nesting birds should be conducted within 10 days prior to any ground disturbing activities. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active bird nests will occur. If an active avian nest is discovered during the 10-day preconstruction clearance survey, construction activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. It is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged, normal construction activities can occur.

3.7 Paleontological Resources

3.7.1 Baseline Conditions

The County of Riverside's database indicates that the Project area has a low potential for containing significant paleontological resources. *(*www.mapmycounty *12/28/2016).*

3.7.2 Significance Thresholds

In its standard guidelines for assessment and mitigation of significant impacts to paleontological resources, the Society of Vertebrate Paleontology (1995) notes that a geologic unit is considered to possess high paleontological sensitivity if it has produced vertebrate or significant invertebrate fossils, or significant suites of plant fossils, and is considered to have a potential for containing significant non-renewable paleontological resources. A geologic unit is considered to possess an unknown paleontological sensitivity if little information is available for the unit. All other geologic units are considered to be of low paleontological sensitivity.

Using the above criteria, the significance of potentially significant impacts of proposed project- related excavations on the paleontological resources was assessed. Any unmitigated impact on a fossil site, or on a fossil-bearing rock unit of high or moderate sensitivity, would be considered significant.

3.7.3 Alternative Analysis

3.7.3.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not construct the recycled water pipeline on Federal land. No impacts to paleontological resources would occur under the No Action Alternative and conditions would remain as described in Section 3.7.1.

3.7.3.2 Preferred Alternative

3.7.3.2.1 Construction

In general, pipeline excavations would have the potential to affect paleontological resources because at a certain depth, they may impact sediment that has not been previously disturbed. However, excavations associated with the Proposed Project are expected to be no deeper than eight feet below ground surface, a depth at which significant paleontological

resources are unlikely to be found. Clearing, use of proposed laydown areas, pavement removal, and other activities required for this project would occur at the surface, or within nominal depths, and do not have the potential to affect paleontological resources. In addition, excavations within the limits of previous pipeline trenching would affect only previously disturbed fill, and previously excavated sediment is not considered paleontologically sensitive. Even if fossils were encountered during original excavations and subsequently returned to the ground mixed with fill, they have little scientific value because they no longer occur in stratigraphic context. Overall, impacts are expected to be less than significant.

3.7.3.2.2 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline enroute to its distribution points. Following the construction phase, no personnel or daily activities would be routinely associated with the Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. As such impacts to paleontological resources associated with operations and maintenance would be negligible and would not approach any of the significance thresholds previously identified.

3.7.4 Environmental Commitments

In its July 2016 Mitigation Monitoring and Reporting Program adopted for this Project, the City of Corona committed to the following:

- Should construction/development activities uncover paleontological resources, work will be moved to other parts of the Project site and a qualified paleontologist shall determine the significance of these resources. If the find is determined to be significant, avoidance or other appropriate measures shall be implemented. Appropriate measures would include that a qualified paleontologist be permitted to recover and evaluate the find(s) in accordance with current standards and guidelines.

3.8 Cultural Resources

3.8.1 Baseline Conditions

A cultural resources assessment to support the Corps's responsibility pursuant to Section 106 of the National Historic Preservation Act (NHPA) (36 Code of Federal Regulations [CFR] 800) was conducted for the proposed work at the City of Corona's River Road Recycled Water Pipeline site. The purpose of the assessment was to review known records and conduct a pedestrian survey to determine the presence of historic properties (any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register) within the area of potential effects (APE) and determine if the proposed undertaking will result in any adverse effects to known resources

3.8.1.1 Area of Potential Effects (APE)

The APE of an undertaking is defined in 36 CFR 800.16(d) as the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties if any such property exists." Additionally, CEQA-Plus guidelines state that the APE is "three-dimensional (depth, length, width) and includes all areas directly affected by the proposed construction" (State Water Resources Control Board 2004). The APE includes the area of direct impact (ADI), consisting of all areas where work related to the project will occur.

The width of surface trenching is expected to be approximately 5 feet; however, the permanent easement is 20 feet. The temporary construction easement will be an additional 20 feet wide. The depth of the pipeline is expected to vary between 6 and 8 feet based on sloping needs and the diameter of the pipe. The State Historic Preservation Officer (SHPO) accepted this determination of the APE in a letter dated August 7, 2017.

3.8.1.2 Literature Search Methods

Rincon archaeologist Breana Campbell conducted a search of cultural resource records housed at the California Historical Resources Information System (CHRIS), Eastern Information Center (EIC) located at the University of California, Riverside in January and February 2016. The search was conducted to identify all previous cultural resources work and previously recorded cultural resources within a 0.5-mile radius of the project site. The CHRIS search included a review of the NRHP, the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. The records search also included a review of all available historic USGS 7.5- and 15-minute quadrangle maps.

3.8.1.3 Literature Search Results

The EIC records search identified 14 previously conducted studies within a 0.5-mile radius of the APE (Table 3-12). Of these reports, six (6) discuss the project APE; none of these studies identified cultural resources within the project APE.

Table 3-12
Previous Studies Within 0.5 Mile of the APE

EIC Report No.	Author	Year	Study	Relationship to APE
RI-00061	Langenwalter, P.E., and J. Brock	1985	Phase II Archaeological Studies Prado Basin and The Lower Santa Ana River	**Within**
RI-00063	Kirkish, A., and L. McCoy	1972	A Preliminary Site Report on the Salvage Excavations at the Bovine Site	Outside
RI-00736	Swenson, J.D.	1979	Addendum To: An Archaeological Assessment of the Norco Hills Proposed Subdivision Near Norco, California	Outside
RI-01125	Drover, C.E.	1981	Environmental Impact Evaluation: Archaeological Assessment of Tentative Parcel Map 17414 Near Norco, California	Outside

EIC Report No.	Author	Year	Study	Relationship to APE
RI-01697	Drover, C.E.	1982	Environmental Impact Evaluation: Archaeological Assessment of the Proposed Norco Wastewater Management Facilities	**Within**
RI-01954	Rosenthal, E.J., and S.J. Schwarz	1981	A Cultural Resource Survey of the Proposed Santa Ana River Hiking/Biking Trail in the Prado Flood Control Basin	**Within**
RI-02429	Stickel, E.G., and T. D'altroy	1980	Santa Ana River and Santiago Creek: A Cultural Resources Survey	Outside
RI-02593	Drover, C.E.	1989	An Archaeological Assessment of the Archibald Sewage Treatment Plant Norco, Riverside County, California	Outside
RI-03629	Seymour, G., and D. Doak	1992	An Archaeological Survey for the Western Riverside Regional Wastewater Treatment System in Corona and Norco, Riverside County.	Outside
RI-04331	Lerch, M.K.	1999	Historic Property Survey Report: Corydon Avenue Equestrian Staging Area, City of Norco, Riverside County, California.	**Within**
RI-05775	Tang, B., M. Hogan, and M. Dahdul	2002	Historical/Archaeological Resources Survey Report, Tentative Tract Map No. 30825, Near the City of Norco, Riverside County, CA	Outside
RI-05958	Tang, B., M. Hogan, C. Tibbet, and D, Ballester	2003	Historical/ Archaeological Resources Survey Report Assessor's Parcel Number 130-030-012 and -013, Near the City of Norco, Riverside County, CA	Outside
RI-05964	Tang, B., M. Hogan, J. Smallwood, and D. Ballester	2003	Historical/Archaeological Resources Survey Report, Tentative Tract Map No. 31406, Near the City of Norco, Riverside County, CA	**Within**
RI-07500	Bonner, W.H., and M. Aislin-Kay	2007	Letter Report: Cultural Resource Records Search Results and Site Visit for Royal Street Communications, LLC Facility Candidate LA2364A (SBC/ATT Woodcrest), 16991 Van Buren Boulevard, Riverside, Riverside County, California.	**Within**

Eastern Information Center, January and February 2016

The EIC records search identified two (2) cultural resources within a 0.5-mile radius of the APE (Table 3-13). Both of these resources are prehistoric artifact scatters. None of these resources are located within or adjacent to the APE for the current project; however, 33-001436 is immediately adjacent to the proposed laydown area. Therefore, DWP will construct a fence across the proposed laydown area property to ensure that the site is not further disturbed.

Table 3-13
Previously Recorded Cultural Resources Within 0.5-mile of theAPE

Primary Number	Description	NRHP/CRHR Eligibility Status	Recorded/Updated By and Year	Relationship to APE
33-000652	Prehistoric Artifact Scatter	Insufficient information	Kirkish 1972	Outside
33-001436	Prehistoric Artifact Scatter	Insufficient information	Hammond 1977	Outside

Eastern Information Center, January and February 2016.

3.8.1.4 Pedestrian Survey Methods

Rincon archaeologist Breana Campbell conducted a cultural resources survey of the APE on July 12, 2017. Ms. Campbell conducted a pedestrian survey of the proposed pipeline across U.S. Army Corps land and the proposed laydown area.

During the survey efforts, Ms. Campbell examined all areas of exposed ground surface for prehistoric artifacts (e.g., chipped stone tools and production debris, stone milling tools, ceramics), historic debris (e.g., metal, glass, ceramics), or soil discoloration that might indicate the presence of a cultural midden. Ms. Campbell recorded characteristics of the project APE and survey conditions using a field notebook and a digital camera. Copies of the field notes and digital photographs are on file with Rincon's Carlsbad office.

3.8.1.5 Pedestrian Survey Results

The survey identified no previously unrecorded cultural resources within the project site. Vegetation where present within the project site included non-native grasses. The EIC records search identified no previously recorded cultural resources within the project site and no new discoveries were made as a result of the pedestrian survey.

3.8.1.6 Native American Consultation

A search of the Sacred Lands file by the Native American Heritage Commission (NAHC) on May 4, 2017 indicated that Native American cultural resources were not identified within the APE.

The Corps invited the 34 tribal contacts provided by the NAHC by letter on July 10, 2017. (The Bureau of Reclamation and the City of Corona had previously conducted tribal consultation on the larger distribution, but the proposed issuance of an easement is a separate undertaking.) Unresponsive tribes were contacted again on November 29, 2017.

The San Manuel Band of Mission Indians replied that the proposed project is located outside of Serrano ancestral territory, so they would not be a consulting party. The Pala Band of Mission Indians also determined the project to be outside the territory that the tribe considers its Traditional Use area and deferred to closer tribes. The Viehas Band of Kumeyaay Indians determined that the project area has little cultural significance to Viejas and recommended contacting closer tribes. The Rincon Band of Luiseño Indians deferred to the Pechanga or Soboba Bands. The Morongo Band of Mission Indians requested additional information but did not provide any subsequent comments.

The Soboba Band of Luiseño Indians requested a face to face consultation meeting on August 15, 2017. A meeting was held on September 20, 2017. Their concerns included the desire for construction to be periodically monitored by

a qualified professional archaeologist and that any recovered cultural material be curated according to federal law and policy. Specific mitigation measures were developed to address their concerns.

3.8.1.7 Determination of Effect

The current project includes issuing a permit for the installation of a 20-inch diameter across federal lands.

Several previous studies have investigated portions of the APE and adjacent areas (RI-00061, RI-01697, RI-01954, RI-04331, RI-05964, RI-07500), and new pedestrian survey of the APE was completed. No cultural resources were identified within the APE. Two previously recorded cultural resources have been identified within 0.5-mile of the APE. These resources are located outside of the APE and would not be impacted by the current project.

Based on the level of disturbance of the APE from previous infrastructure development (e.g., roads, pipelines) and results of previous inventory, it is unlikely that any previously unidentified cultural resources will be affected or impacted by the current project. Therefore, Rincon recommends a finding of no impact to historical resources under CEQA and no historic properties affected under the NHPA.

3.8.2 Significance Thresholds

The criteria for significant, adverse effects to cultural resources are if the project would include disturbance, alteration or otherwise diminishing the integrity of a cultural or archeological resource or historic property's location, design, setting, materials, workmanship, feeling or association, or the introduction of culturally incompatible elements to a property listed on or considered eligible for listing on the National Register of Historic Places. Additionally, adverse impacts to important Native American sites or traditional resources could also consitture a significant adverse effect.

3.8.3 Alternative Analysis

3.8.3.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not construct the recycled water pipeline. No impacts to cultural resources would occur under the No Action Alternative and conditions would remain as described in Section 3.8.1.

3.8.3.1 Preferred Alternative

3.8.3.1.1 Construction

As summarized above and based on the literature search and pedestrian survey conducted to evaluate potentially important resources, no properties have been identified within the APE. In accordance with 36 CFR 800.13(b), if any cultural resources are identified during construction, the Corps Operations Branch and archaeologist will be notified and the Corps archaeologist will be consulted in order to determine appropriate effects and treatment. The Corps has determined that no historic properties would be affect granting an easement for the proposed project, contingent upon the mitigation measures developed in coordination with interested tribes. The State Historic Preservation Officer agreed with this finding in a letter dated December 1, 2017.Iimpacts to cultural resources are expected to be less than significant.

3.8.3.1.2 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline enroute to its distribution points. Following the construction phase, no personnel or daily activities would be routinely associated with the Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. Any excavation required for repairs would occur within the permanent easement and, most likely, within the area disturbed by the initial construction. Operation and maintenance activities are presumed to be inherent with the construction of pipelines. As such impacts to historical and archaeological resources associated with operations and maintenance would be negligible and would not approach any of the significance thresholds previously identified.

3.8.4 Environmental Commitments

In its July 2016 Mitigation Monitoring and Reporting Program adopted for this Project, the City of Corona committed to numerous measures to ensure the protection of cultural resources. In addition, mitigation measures, listed in Section 4.7, below, would be incorporated to ensure that the project will not adversely affect historic properties.

3.9 Hazardous Materials and Wastes

3.9.1 Baseline Conditions

Several standard environmental record services are available to determine the potential for recognized environmental conditions in an area. Those databases are briefly described in the following paragraphs.

3.9.1.1 National Priorities List (NPL)

The National Priorities List (NPL) is a federal database of uncontrolled hazardous waste sites that warrant further investigation to determine if long-term “remedial action” is necessary. There are no NPL sites located in the Project area.

3.9.1.2 Envirostor

Envirostor is a database maintained and primarily used by the California Department of Toxic Substances Control to determine the location of all hazardous waste sites. There are no hazardous waste sites located in the Project area listed in the Envirostor database.

3.9.1.3 Geotracker

Geotracker is the State Water Resources Control Board’s data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense

Site Cleanup Program) as well as permitted facilities such as operating USTs and land disposal sites. There are no permitted underground storage tanks within the Project area.

3.9.1.4 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. In implementing this law, the Environmental Protection Agency (EPA) compiles a list of known hazardous waste sites that are under consideration for the Superfund list. This list is known as the CERCLIS database. There are no CERCLIS sites located in the Project area.

3.9.1.5 Resource Conservation and Recovery Act (RCRA)

The primary goals of the Resource Conservation and Recovery Act (RCRA) are to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner. In implementing this law, EPA compiles a list of known hazardous waste generators. There are no known hazardous waste generators within the Project area.

3.9.1.6 Hazardous Materials Response Plans and Inventory

The Governor's Office of Emergency Services (OES) administers the Hazardous Materials Response Plans and Inventory program (Article 1, Chapter 6.95, Health and Safety Code). As part of this program, OES maintains a database of all hazardous materials spills in the State (RIMS). According to that database, there have not been any hazardous materials spills within the Project area.

3.9.1.7 Leaking Underground Storage Tank Information System (LUSTIS)

The State Water Resources Control Board (State Water Board) administers the Leaking Underground Storage Tank Information System (LUSTIS). The LUSTIS database includes all reported leaks from underground storage tanks. The LUSTIS database is now reported in the Georacker results.

3.9.1.8 Site Mitigation Program Property Database (formerly CalSites)

The California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) administers the CalSites program. Information in the CalSites database is preliminary in nature; therefore, most sites listed in the database need additional work to determine if contamination exists. There are no sites in the CalSites database within the Project area.

3.9.1.9 Hazardous Waste and Substances Sites List (Cortese)

California's Government Code §65962.5 requires the California Department of Toxic Substances Control to develop, at least annually, an updated list of Hazardous Waste and Substances Sites. This list, known as the Cortese List, is a planning document used by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. DTSC is

responsible for a portion of the information contained in the Cortese List. Other State and local agencies are required to provide additional hazardous materials release information for the Cortese List. The Cortese List is to be submitted to the Secretary of the California Environmental Protection Agency. There are no sites on the Cortese List within the Project area.

3.9.1.10 Solid Waste Information System (SWIS)

The Solid Waste Information System (SWIS) is a database provided by the California Integrated Waste Management Board which consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations. There are no sites in the SWIS database within the Project area.

3.9.2 Significance Thresholds

A significant impact would occur if implementation of the Proposed Project:

- Caused soil contamination, including flammable or toxic gases, at levels exceeding Federal, state, and local hazardous waste limits established by 40 CFR Part 261.

- Exposed the general public to hazardous situations through the transport, use, storage, or disposal of hazardous materials.

- Created a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

3.9.3 Alternative Analysis

3.9.3.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not construct its recycled water pipeline on Federal land. No impacts to hazardous materials and wastes would occur under the No Action Alternative and conditions would remain as described in Chapter 3.9.1.

3.9.3.2 Preferred Alternative

3.9.3.2.1 Construction

No sites have been identified through review of regulatory records involving releases or spills of hazardous waste that would have the potential to affect the Proposed Project area. No activities are proposed that would increase the potential release of hazardous or toxic substances. Virtually all hazardous materials required to facilitate implementation of the Proposed Project (e.g., fuel for vehicles and equipment) would be provided / distributed off-site, and any minor amount of such materials necessary onsite would be handled in accordance with appropriate plans and in compliance with all applicable regulatory requirements. These potential minor amounts of material include, for example: vehicle fuel, hydraulic fluid, and compressed gases for welding. Overall, impacts would be less than significant.

3.9.3.2.2 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline enroute to its distribution points. Following the construction phase, no personnel or daily activities would be routinely associated with the Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. As such, impacts related to hazardous materials and wastes associated with operations and maintenance activities would be negligible and would not approach any of the significance thresholds previously identified.

3.9.4 Environmental Commitments

In its July 2016 Mitigation Monitoring and Reporting Program adopted for this Project, the City of Corona committed to the following:

To reduce potentially hazardous conditions and minimize the impacts from the handling of potentially hazardous materials, DWP shall include the following in its construction contract documents:

- The contractor(s) shall prepare a Health and Safety Plan in compliance with the requirements of Chapter 6.95, Division 20 of the Health and Safety Code (§§ 25500—25532). The plan shall include measures to be taken in the event of an accidental spill.

- The contractor(s) shall enforce strict on-site handling rules to keep construction and maintenance materials out of receiving waters and storm drains. In addition, the contractor(s) shall store all reserve fuel supplies only within the confines of designated construction staging areas, refuel equipment only within the designated construction staging areas, and regularly inspect all construction equipment for leaks.

- The construction staging area shall be designed to contain contaminants such as oil, grease, and fuel products so that they do not drain towards receiving waters or storm drain inlets.

3.10 Aesthetics

3.10.1 Baseline Conditions

The proposed project location and setting provide the context for determining the type and severity of changes to the existing visual environment that could result from the Proposed Project. The project setting is defined as the area of land that is visible from, adjacent to, and outside the project area, and is determined by topography, vegetation, and viewing distance. While the photos below show adjacent roads, please see Figure 2-3-1 to see the approximately 2,000 feet of Federal land that would be affected. Typical roadway scenes along the proposed pipeline alignment are shown on Figures 3-2, 3-3 and 3-4.

Figure 3-2 River Road Bridge Looking Northerly

Figure 3-3 River Road Looking Northerly from Bridge

Figure 3-4 River Road Looking Northerly at Baron Drive Intersection

3.10.2 Significance Thresholds

Aesthetics, or visual resources, are the natural and cultural features of the landscape that can be seen and that contribute to the public's enjoyment of the environment. Visual resource or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility, light, and glare and the extent to which the pipeline's presence would change the perceived visual character and quality of the environment in which it would be located.

3.10.3 Alternatives Analysis

3.10.3.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not construct its recycled water pipeline on Federal land. (Please see Figure 2-3-1 for an aerial view of the Federal land, outgranted for outdoor recreation, that would or would not be affected by the proposal.) No impacts to aesthetics would occur under the No Action Alternative and conditions would remain as described in Section 3.10.1.

3.10.3.2 Preferred Alternative

3.10.3.2.1 Construction

The visual quality and character of the existing Proposed Project area would not be altered by constructing the Preferred Alternative. The Preferred Alternative would be underground except for the portion installed within a dedicated space in the River Road Bridge. No new, permanent sources of light or glare would be installed and night work is not anticipated.

During construction of the Preferred Alternative, temporary visual impacts could result from the presence of heavy equipment and construction materials stored onsite. Views of the proposed project during construction would be short in duration and visible by travelers along River Road and Barron Drive.

Construction of the Preferred Alternative would not result in significant effects on visual resources or viewer response, or to aesthetics generally.

3.10.3.2.2 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline enroute to its distribution points. Following the construction phase, no personnel or daily activities would be routinely associated with the Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. As such, impacts related to aesthetics associated with operations and maintenance activities would be negligible and would not approach any of the significance thresholds previously identified.

3.10.4 Environmental Commitments

Based on the analysis of potential impacts to visual resources at and in the vicinity of the Proposed Project, no significant impacts are anticipated; therefore, no mitigation measures or other environmental commitments are proposed.

3.11 Recreational Resources

3.11.1 Baseline Conditions

The Proposed Project, if not conducted on Federal land, would be constructed upon private property, on public street rights-of-way, or within a dedicated space in the River Road Bridge. However, there are recreational resources within the immediate Project area as proposed.

3.11.2 Significance Thresholds

Recreation-related impacts would be considered a significant effect if the selected alternative results in:

- Permanent removal of substantial recreational areas and critical recreational facilities.
- Increased usage that will result in substantial physical deterioration of the recreational area or facility.

3.11.3 Alternative Analysis

3.11.3.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not construct its recycled water pipeline on Federal land. No impacts to Federal recreation areas would occur under the No Action Alternative and conditions would remain as described in Section 3.11.1.

3.11.3.2 Preferred Alternative

3.11.3.2.1 Construction

The Preferred Alternative includes the granting of a new easement by the Corps to the City of Corona for the construction, operation and maintenance of its recycled water pipeline. The Federal land that would be affected lies between the WR treatment plant and Baron Drive and is open space, in an area outgranted by a concessionaire operating for recreation in Riverside County. Note also that this proposed pipeline would lie near an existing underground utility line in the area.

The Proposed Project would predominately be underground in the new easement and is compatible with existing land use designations, including an existing line. The line would be in an undeveloped area just north of the existing hard-surfaced roadway on this outgranted parcel.

Therefore, there would be no impacts to recreation during construction and the Preferred Alternative will result in no significant effects to recreation.

3.11.3.2.2 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline enroute to its distribution points. Following the construction phase, no personnel or daily activities would be routinely associated with the Preferred Alternative.

Maintenance activities would be similar to those currently associated with other pipelines in the Project Area. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbances). These activities would include, for example, regular and routine inspections, calibration, and surface maintenance to ensure regular access, in-pipe testing, hydrostatic testing, leak detection and associated repairs. As such, impacts related to recreational resources associated with operations and maintenance activities would be negligible and would not approach any of the significance thresholds previously identified.

3.11.4 Environmental Commitments

Based on the analysis of potential impacts to recreational resources at and in the vicinity of the Proposed Project, no significant impacts are anticipated; no mitigation measures or other environmental commitments are proposed.

3.12 Public Health and Safety

3.12.1 Baseline Conditions

Public Health and Safety Hazards associated with flooding, illegal activities, wildfires, and mosquitos are described below.

3.12.1.1 Flooding

As shown on Figure 3-5 (FIRM 06065C0686G) which represents the general action alternative, the proposed pipeline will generally cross a flood plain. Once constructed, the pipeline would be underground and not interfere with flood flows.

The Corps has a formal notification process whereby the Reservoir Regulation Section contacts any known entities that will be affected by forecasted flood inflow to the Prado Dam Basin (for example, this construction project will be flagged through Asset Management Division to the Reservoir Regulations Section). This notification procedure is based on forecasted runoff and the maximum estimated height of surface water. These notifications are continually updated based on the current hydrologic and Basin conditions. During potential flood conditions in the Prado Dam Basin, local entities have authorities in place to redirect traffic and erect roadway barriers and signage.

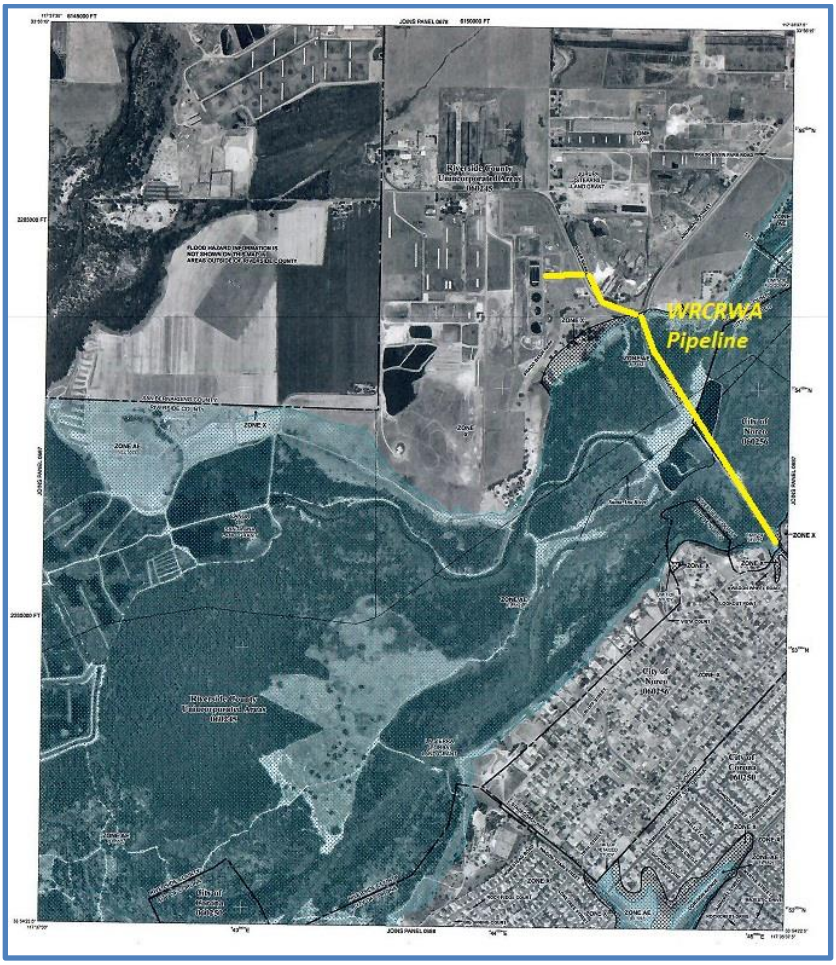

Figure 3-5 WRCRWA Recycled Water Pipeline Shown on FIRM 06065C0686G

3.12.1.2 Illegal Activities Hazards

The Cities of Corona, Eastvale and Norco coordinate closely with law enforcement and the Corps as well as fire, medical and emergency response agencies in the area. Illegal activities in the area create a safety issue associated with trespassing, ongoing lewd and lascivious conduct, and drug dealing. Areas adjacent to the Proposed Project area are patrolled by Cities of Eastvale and Norco as well as Corps staff. These agencies have expressed concerns regarding their own safety and especially the safety of the public who enter the area for bird watching, walking, or jogging. Additionally, numerous homeless encampments in the area have been observed.

3.12.1.3 Wildfires

Areas within the Prado Dam Basin are susceptible to local uncontrolled burning because of un-maintained vegetation or areas of dry vegetation. These small brush fires can make the area more susceptible to increased erosion by rain storms and wind.

3.12.1.4 Mosquito Hazard

California has several species of mosquitoes that are known to transmit agents that can cause mosquito-borne diseases including western equine encephalomyelitis, St. Louis encephalitis, malaria, and West Nile Virus. The lack of many of the natural predators in an urban environment can allow mosquitoes to reach nuisance levels. When this occurs, the potential for an increase in the spread of mosquito-borne diseases can occur without monitoring and abatement measures. Breeding areas for mosquitoes include stagnant or standing water. Detention basins and wetlands can act as breeding sites if not managed properly. Biological and chemical insecticides administered by the Riverside County Vector Control are typically used to control mosquitos.

3.12.2 Significance Thresholds

A significant impact will occur if the alternative:

- Increases exposure of people or structures to flooding hazards.
- Creates conditions that will present potential dangers to the public or attract the public to a potentially hazardous area (e.g., attractive nuisances).
- Creates mosquito breeding conditions in an amount that will require increased levels of mosquito abatement programs to maintain mosquito populations at pre-project levels.

3.12.3 Alternative Analysis

3.12.3.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not construct its recycled water pipeline on Federal land. Adverse conditions with regard to public health and safety concerns would continue if the No Action Alternative were selected and conditions would remain as described in Section 3.12.1.

3.12.3.2 Preferred Alternative

3.12.3.2.1 Construction

Because construction activities would be short-term and not occur during heavy rainfall, the presence of workers in the floodplain would not increase their risk of exposure to flood hazards. Construction activities would also not attract the public into a hazardous area or result in the establishment of stagnant water that would be conducive to promulgation of mosquito populations.

3.11.3.2.2 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature as the recycled water passes through the pipeline enroute to its distribution points. No personnel or daily activities would be routinely

associated with the Proposed Project area and therefore no increase in safety risks related to floodplains or other public health metrics would result.

Maintenance activities would be similar to those currently occurring at the project area and at similar sites throughout the Los Angeles Basin. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbance). As such, impacts to public health and safety associated with operations and maintenance activities would be negligible and would not approach any of the significance thresholds previously identified.

3.12.4 Environmental Commitments

Coordination and established communication with the Corps Reservoir Regulation Section personnel responsible for public notification of flood inflow to the Prado Dam Basin will prevent impacts to construction personnel and equipment working within the flood plain.

The City of Corona will prepare a Project Safety Plan for Corps review and approval prior to entry onto the site for construction.

3.13 Socioeconomics and Environmental Justice

3.13.1 Baseline Conditions

Each federal agency is required by Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and-low income populations…"

The CEQ defines a minority population as any group of minorities, individually or cumulatively, that exceeds 50 percent of the existing population within the market area or where a minority group comprises a meaningfully greater percentage of the local population than in the general population. Additionally, the CEQ identifies low income as "individuals living below the poverty level" using 2010 Census data.

Ensuring environmental justice means protecting existing local and market-area minority and low-income populations from disproportionate adverse human health or environmental effects related to Federal government action.

No residential land uses occur within or directly adjacent to the proposed project area, with the exception of the area adjacent to Barron Drive. The communities of Eastvale, Norco and Corona are largely white. (Data in Table 3-14 below are presented for 2010, the last year for which information is available across all representative geographies.

Table 3-14
Regional and National Socioeconomic Characteristics

	Eastvale	Norco	Corona	Riverside County	California
White	46.63%	74.24%	71.22%	65.31%	62.13%
Black	9.61%	5.62%	5.02%	6.24%	5.94%
Hispanic	38.98%	29.89%	42.19%	46.54%	38.18%
Asian	27.15%	4.21	10.99%	6.11%	13.48%
Native American	0.99%	1.29%	1.42%	1.29%	1.14%
One Race, Other	11.20%	9.60%	7.19%	16.76%	12.85%
Two or More Races	4.41%	5.03%	4.17%	4.29%	4.46%
Total Population	55,298	27,143	157,395	2,266,899	38,066,920
Poverty Level	5.08%	6.23%	11.26%	16.62%	16.06%

Source: www.usa.com 12/31/2016

3.13.2 Significance Thresholds

The impact on socioeconomics and environmental justice will be considered significant if the following were to occur:

- Impacts to a sector of the economy, productivity, competition, prices or jobs.
- Impacts on the welfare of low income or minority populations.
- The impact of project-induced population changes on the availability of public services
- A substantial long-term decrease in local employment due to direct loss of jobs or an adverse effect on the local economy that results in an indirect long-term loss of jobs.
- Disproportionately high and adverse impacts on minorities, low-income residents, or children.
- A substantial population growth in an area induced by the alternative.

3.13.3 Alternative Analysis

3.13.3.1 No Action Alternative

If the No Action Alternative were selected, the City of Corona would not construct its recycled water pipeline on Federal land. No impacts to socioeconomics and environmental justice would occur under the No Action Alternative and conditions would remain as described in Section 3.13.1.

3.13.3.2 Preferred Alternative

3.13.3.2.1 Construction

Construction of the Preferred Alternative is expected to take approximately 150 days total, to complete. A maximum of 10 construction workers onsite would be needed for the Proposed Project. There would be no substantial shift in population, or a need for additional housing or employment for the short construction duration.

The new pipeline would be unmanned, except during maintenance activities which occur only two to three times per year.

Six residential uses exist adjacent to the proposed project site (i.e., along Barron Drive). Impacts outside the site, which include commuting trips and vehicle trips, would be minimal. The local residents, including low-income and minority populations, would be affected by construction of the Preferred Alternative, but such impacts are not disproportionately high and adverse. Therefore, the impact on socioeconomics and environmental justice would not be considered significant.

3.13.3.2.2 Operations and Maintenance

Operational activities associated with the recycled water pipeline would be largely passive in nature, as recycled water passes through the pipeline enroute to distribution points. No personnel or daily activities would be routinely associated with the Proposed Project.

Maintenance activities would be similar to those currently occurring at the project site and at similar sites throughout the Santa Ana River Basin. These activities are typically non-invasive (e.g., they do not require soil excavation or other surface disturbance). As such, impacts to socioeconomics and environmental justice associated with operations and maintenance activities would be negligible and would not approach any of the significance thresholds previously identified.

3.13.4 Environmental Commitments

Based on the analysis of potential impacts to socioeconomic characteristics or environmental justice concerns at or in the vicinity of the Proposed Project, no significant impacts are anticipated; no mitigation measures or other commitments are proposed.

3.14 Traffic and Transportation

3.14.1 Baseline Conditions

Regional access to the Project site is via Interstate 15 and State Highway 91. The latest traffic counts by Caltrans for these two highways in the Project area is provided in Table 3-15.

Table 3-15
Selected Traffic Counts by Caltrans
(2014)

Location	Southbound			Northbound		
	Peak Hour	Peak Month	AADT[1]	Peak Hour	Peak Month	AADT[1]
Interstate 15						
Ontario Avenue	12,600	175,000	169,000	11,800	167,000	164,000
Magnolia Avenue	11,600	169,000	164,000	12,800	187,000	182,000
Junction 91	12,800	187,000	182,000	11,300	165,000	156,000
Hidden Valley	11,300	165,000	156,000	11,200	165,000	156,000
Highway 91						
Green River Drive	183,000	272,000	267,000	16,700	258,000	253,000
Junction 71 North	16,700	258,000	253,000	16,500	269,000	256,000
Serfas Club Drive	16,500	269,000	256,000	16,700	270,000	257,000
Main Street	16,000	259,000	247,000	15,000	245,000	247,000
Junction 15	15,000	245,000	233,000	15,200	230,000	219,000

[1] AADT = Average Annual Daily Traffic
Source: Caltrans 2015, www.dot.ca.gov (3/29/2016)

The latest traffic information on River Road was taken by the City of Corona. It indicated an ADT of 15,200 at Corydon Drive.

3.14.1 Significance Thresholds

The evaluation criteria used for this impact analysis are based on current regulations, typical threshold standards, knowledge of the area, and consideration of the context and intensity of the environmental effects, as required pursuant to NEPA. Traffic impacts typically are considered to be significant if the alternative would:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- Exceed, either individually or cumulatively, a Level of Service (LOS) standard established by the regulatory agency.
- Result in inadequate parking capacity.

3.14.2 Alternative Analysis

Based on the jurisdictional guidance described above, a one percent traffic threshold volume was used to assess potential impacts. The one percent threshold was used as the most conservative (worst case) criterion from the affected jurisdictions. Since LOS was not calculated directly, this conservative analysis captures potential impacts regardless of the roadway operations.

3.14.3.1 No Action Alternative

The No Action Alternative would not involve construction or operation activity, and no vehicle trips or parking demand would be generated on Federal land. Specifically, the No Action Alternative would not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system; exceed an LOS

standard established by the regulatory agency; or result in inadequate parking capacity. The No Action Alternative would not result in effects on traffic.

3.14.3.2 Preferred Alternative

3.14.3.2.1 Construction

Implementation of the Preferred Alternative is expected to take approximately 150 days to complete. The City of Corona anticipates that construction activities would typically occur from Monday to Friday during normal daytime work hours (for example, between 7:00 a.m. and 6:00 p.m.), although periodic Saturday work may be needed. Note that work on the Federal portion, which is not usually open to the public, would have little impact on public transportation because there is little activity on the Riverside County outgranted area during most of the year.

A maximum of 10 construction workers would be needed. As a conservative estimate, it is assumed that the construction workers would drive to the site alone (either in personal vehicles or company vehicles/trucks), resulting in up to 20 average daily trips (one incoming and one outgoing trip), 20 AM peak-hour trips and 20 PM peak-hour trips. Parking for the construction workforce would be provided entirely on-site.

The average number of truck trips per day related to delivery of equipment and hauling materials is estimated to 6 truck trips/day over the estimated 150-day period period. Truck trips are projected to travel to and from the construction site during off-peak hours (between 9 AM and 3 PM).

The increased traffic volume would be minimal considering current traffic in the site vicinity. Based on the existing peak hour volumes, the increase in traffic is estimated to be less than 1 percent on River Road, State Highway 91 and Interstate 15.

During the installation of the project facilities, it might be necessary to temporarily close lanes on the affected streets (i.e., Barron Drive and River Road). In such instances, the contractor would be required to comply with the provisions of Part 6, Temporary Traffic Control, of the California Manual on Uniform Traffic Control Devices and the California Supplement to minimize any traffic and pedestrian hazards that exist during Project construction.

Specifically, the construction of the Preferred Alternative would not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system; exceed an LOS standard established by the regulatory agency; or result in inadequate parking capacity. Construction and operation of the Preferred Alternative would not result in significant effects on traffic.

3.14.3.2.2 Operations and Maintenance

Operational activities associated with the new pipeline would be largely passive in nature, as recycled water passes through the pipeline enroute to distribution points. No personnel or daily activities would be routinely associated with the Proposed Project area.

Maintenance activities would be similar to those currently occurring at the project area and at similar sites throughout the Santa Ana River Basin. These activities are typically non-invasive (e.g., they do not require soil excavation or

other surface disturbance). As such, traffic and transportation system impacts associated with operations and maintenance activities would be negligible and would not approach any of the significance thresholds previously identified.

3.14.4 Environmental Commitments

A construction Traffic Management Plan for the Federal land portion would be prepared and submitted to Corps for review and approval prior to the start of any construction work. This plan would include such elements as the designation of haul routes for construction-related trucks, the location of access to the construction site, temporary traffic control devices or flagmen (if needed), travel time restrictions for construction-related traffic to avoid peak travel periods on selected roadways, and designated staging and parking areas for workers and equipment.

Information on traffic will also be included in the Safety Plan, as appropriate.

3.15 Cumulative Impacts

Cumulative effects are impacts on the environment that result from the incremental impacts of a proposed action when added to other past, present, and reasonably foreseeable future actions (State CEQA Guidelines §15355[b], 40 CFR 1508.7). Such impacts can result from individually minor but collectively significant actions taking place over time.

The construction, operation and maintenance of the WRCRWA recycled water pipeline will not have any direct, indirect, or permanent significant effects as discussed in the environmental analysis sections of this dEA. Construction, operation and maintenance of the pipeline will not contribute to a cumulative effect on any resources because the defined significance thresholds were not reached for any resource area. As indicated in earlier sections concerning likely project impacts, in general no significant, adverse effects would result from the Proposed Project, even in combination with past, present, and future projects and conditions; final notes will be provided, below.

In addition, considering the Preferred Alternative along with numerous other City of Corona pipeline projects, the cumulative effect is beneficial as it will allow the City of Corona to meet its Project objectives which are:

- Decrease the amount of recycled water that cannot be beneficially used within the service area of the Western Riverside County Regional Wastewater Authority (WRCRWA) of which the City of Corona is a member agency.
- Increase the amount of recycled water that can be beneficially used thereby decreasing the amount of potable water that is currently being used for non-potable uses.
- Decrease the amount of imports from the State Water Project and Colorado River Aqueduct.
- Improve the reliability of landscape irrigation water supplies.

A brief description of past, present, and future actions is presented, below.

3.15.1 Past Actions

During 1998 WRCRWA commenced operation of its Western Riverside County Regional Wastewater Treatment Plant (WRCRWTP) located at 14634 River Road, Eastvale, California. That facility is capable of producing recycled water for reuse or for discharge to Reach 3 of the Santa Ana River, upstream of Prado Dam. Its ultimate design capacity is 16 mgd.

Consistent with and subject to WRCWA's Resolution No. 97-38, and any successor thereto, each member agency (the City of Corona is a member agency) shall have the right to take delivery of and use recycled water from WRCRWA's facilities, an amount of recycled water treated and produced by WRCRWA's facilities as determined by WRCRWA annually, not to exceed the amount of reclaimable wastewater delivered by the member agency to WRCRWA's facilities for treatment less any amount consumed during the course of the operations of WRCRWA's facilities. Prior to exercising its right to take its basic allocation or any portion thereof, each member agency shall enter into a written agreement with WRCRWA. As stated in Resolution No. 97-38, that agreement shall provide, at a minimum:

a) The Authority's determination of the Basic Allocation as set forth above; and

b) That the point of delivery shall be the Treatment Facility, and the Member Agency shall be solely responsible for all costs and expenses associated with taking delivery and metering of reclaimed wastewater from the point of delivery; and

c) That the Member Agency shall be responsible for obtaining, at is sole cost and expense, all permits and approvals applicable to the use of reclaimed wastewater; and

d) That the Member Agency shall indemnify and hold the Authority harmless from legal liability and economic losses that may result from the Member Agency's use of the reclaimed wastewater; and

e) That the Member Agency shall have an option to obtain Surplus Reclaimed Wastewater (Section 2 below); and

f) That the Member Agency shall be responsible for assuring that the reclaimed wastewater is delivered and utilized in full compliance with the NPDES Permit Order No. 97-2 and any Amendment or successor thereto, Title 22 of the California Code of Regulations, the "Guidelines for Use of Reclaimed Water" by the California Department of Health Services, and all other applicable laws regulations and ordinances; and

g) Such other terms and conditions as may be reasonably required or necessary to effectuate this policy, including a clause providing for binding arbitration.

2. <u>Allocation of Surplus Reclaimed Wastewater</u>

Subject to the availability of reclaimed wastewater and the commitments and obligations of the Authority, including in plant uses, (so as not to interfere with treatment plant operations), and subject further to each Member Agency's

right to its Basic Allocation under Section 1 above, each Member Agency of the Authority may be permitted by the Authority to temporarily take delivery of reclaimed wastewater in excess of the net amount of reclaimable wastewater delivered to the Treatment Facility, on an interruptible basis. Prior to taking surplus reclaimed wastewater, each Member Agency shall enter into a written agreement of the type described in Section 1, above.

All allocations of surplus reclaimed wastewater must be first approved by the Authority.

Other past actions in this area include the construction (early 2000's) of Norco's recycled waterline in the similar area at the Riverview Park; the gradual closure of Crossroads Park due to the concessionaire's family changes; and the development, north of River Road, of the new community of Eastvale, the land which had previously been used as dairy farmland.

3.15.2 Present Actions

The City of Corona is presently implementing its Proposition 1 – Reclaimed Water Distribution System, Phase 1 Project (the Preferred Project). This project is critical to the success of the Proposition 1 – Reclaimed Water Distribution System Project as it is the critical link to transport reclaimed water from the WRCRWTP to the City's reclaimed water distribution system. In the region, development and maintenance of existing facilities and infrastructure is virtually a constant reality, with ongoing improvements to transportation and other infrastructure facilities.

3.15.3 Future Actions

Completion of the Preferred Alternative will allow the City of Corona to implement the remaining four phases of its Proposition 1 – Reclaimed Water Distribution System Project. The impacts of implementing the Proposition 1 – Reclaimed Water Distribution System were analyzed in the July 2016 *Initial Study and Mitigated Negative Declaration, Proposition 1 – Reclaimed Water Distribution System, City of Corona Department of Water and Power,* prepared by K.S. Dunbar & Associates, Inc. That analysis indicated that there were no impacts which could not be mitigated to a less than significant level associated with implementation of the Project.

Additional notes may also mention that there has been a baseline of construction in adjacent areas, especially the new City of Eastvale located just north and northeast of the treatment plant, although this has taken place off Federal land and while the Federal parcel in question has gone unchanged for several decades.

The WRCRWA's treatment plant itself continues to provide potable and recycled water to its member agencies. And, the U.S. Army Corps of Engineers, as well as Orange County Water District and OC Flood Control District, all maintain present and future footprints in the general River Road area of Riverside County. Each of these regional agencies is involved with particular aspects of sediment, water, flood risk management, habitat conservation, open space/recreation, and other regional issues.

4 Environmental Commitments

This section describes the environmental commitments that will be implemented by the City of Corona as part of the Proposed Project. Although no significant impacts were identified during preparation of this EA, the environmental commitments summarized below will decrease the severity of any short-term or temporary project-related impacts on resources. Importantly, due to the limited and localized nature of disturbance, the activities associated with construction, operation, and maintenance of the new pipeline are not expected to result in any long-term significant effects.

4.1 Land Use

- Construction activities will be limited to the times allowed in the municipal codes of the Cities of Eastvale and Norco in order to avoid potential impacts to adjacent land use activities.

4.2 Hydrology and Water Quality

- Environmental commitments for Proposed Project implementation would include using industry-standard erosion control materials and techniques. The City of Corona will also coordinate with appropriate entities (e.g., USACE, RWQCB) with regard to permitting requirements under the Clean Water Act and Rivers and Harbors Act, as necessary.

4.3 Air Quality

- DWP will:
  - Appoint a construction relations officer to act as a community liaison concerning on-site construction activities including resolution of issues related to PM_{10} generation.
  - Add the following best management practices in its contract documents for this project:

    The contractor shall:
    - Utilize electricity from power poles instead of from temporary diesel or gasoline power generators, when feasible.
    - Require the use of 2010 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export) and if the lead agency determines that 2010 model year or newer diesel trucks cannot be obtained the contractor shall use trucks that meet EPA 2007 model year NO_x emissions requirements.
    - Require that all on-site construction equipment meet EPA Tier 3 or higher emissions standards according to the following:

- ✓ All off-road diesel-powered construction equipment greater than 50 hp shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

- ✓ A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

- ❖ Maintain construction equipment engines by keeping them properly tuned and maintained according to manufacturer's specifications.
- ❖ Use alternative fuels or clean and low-sulfur fuel for equipment.
- ❖ Idle trucks in accordance with the Airborne Toxic Control Measure (ACTM) to Limit Diesel Fueled Commercial Motor Vehicle Idling and other applicable laws.
- ❖ Spread soil binders on site, where appropriate, unpaved roads and staging areas.
- ❖ Water site and equipment as necessary to control dust.
- ❖ Sweep all streets at least once per day using SCAQMD Rule 1186 certified street sweepers or roadway washing trucks if visible soil materials are carried to adjacent streets.
- ❖ Conduct operations in accordance with SCAQMD Rule 403 requirements.
- ❖ If necessary, wash off trucks leaving the site.
- ❖ Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114.

4.4 Noise

- ❖ DWP will add the following best management practices in its standard construction specifications:
  - ❖ All equipment used during construction shall be muffled and maintained in good operating condition. All internal combustion engines shall be fitted with well-maintained mufflers in accordance with manufacturers' recommendations.

4.5 Biological Resources

- ❖ A burrowing owl clearance survey shall be conducted prior to any ground disturbing activities in accordance with the CDFW 2012 Staff Report on Burrowing Owl Mitigation. Two pre-construction clearance surveys shall be conducted 14-30 days and 24 hours prior to ground disturbing activities to document the continued absence of burrowing owl from the Project site.

- If ground-disturbing activities or removal of any trees, shrubs, or any other potential nesting habitat are scheduled within the avian nesting season (nesting season generally extends from February 1 - August 31), a pre-construction clearance survey for nesting birds should be conducted within 10 days prior to any ground disturbing activities. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active bird nests will occur. If an active avian nest is discovered during the 10-day preconstruction clearance survey, construction activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. It is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged, normal construction activities can occur.

- In addition, no construction work on Federal land will occur between the March 1-September 1 riparian bird breeding season due to potential presence of the Federally-listed-as-endangered least Bell's vireo. Work proposed for outside this timing window will be conditioned, via informal consultation and concurrence with the USFWS, to result in May Affect But Not Likely to Adversely Affect, Federally-listed avian species.

4.6 Paleontological Resources

- Should construction/development activities uncover paleontological resources, work will be moved to other parts of the Project site and a qualified paleontologist shall determine the significance of these resources. If the find is determined to be significant, avoidance or other appropriate measures shall be implemented. Appropriate measures would include that a qualified paleontologist be permitted to recover and evaluate the find(s) in accordance with current standards and guidelines.

4.7 Cultural Resources

In its July 2016 Mitigation Monitoring and Reporting Program adopted for this Project, the City of Corona committed to numerous measures to ensure the protection of cultural resources. In addition, the following mitigation measure would be incorporated to ensure that the project will not adversely affect historic properties:

MM CUL-1 The grantee shall allow any interested tribe to monitor any and all construction activities and will proactively coordinate with tribal members to schedule access.

MM CUL-2 Ground disturbing activities shall be periodically monitored by a qualified archaeologist meeting the Secretary of the Interior's Standards, as per Appendix A to 36 CFR 61.

MM CUL-3 In the event that previously unknown cultural resources are discovered during the project, all ground disturbing activities shall immediately cease within 200 feet of the discovery until the Corps has met the requirement of 36 CFR 800.13 regarding post-review discoveries. The Corps will evaluate the eligibility of such resources for listing on the National Register of Historic Places and propose actions

to resolve any anticipated adverse effects. Work shall not resume in the area surrounding the potential historic property until the Corps re-authorizes project construction.

MM CUL-4 Any artifact(s) or other item(s) collected from federal lands as a result of any inadvertent discoveries will be curated in compliance with the Archaeological Resources Protection Act (Public Law 96-95; 16 U.S.C. 470aa-mm), 36 CFR 79, 36 CFR 800.13, and EP 1130-2-540, Chapter 6.

MM CUL-5 In the event of accidental discovery of human remains, all construction activities shall be halted immediately, and the Corps archaeologist and the Riverside County Coroner must be notified. The coroner will determine whether the remains are of forensic interest. If human remains, funerary objects, sacred objects, or items of cultural patrimony are encountered during the proposed project, the treatment and disposition of such remains will be carried out in compliance with the Native American Graves Protection and Repatriation Act (Public Law 101-601; 25 U.S.C. 3001 et seq.) and EP 1130-2-540, Chapter 6.

4.8 Hazardous Materials and Wastes

To reduce potentially hazardous conditions and minimize the impacts from the handling of potentially hazardous materials, DWP shall include the following in its construction contract documents:

- The contractor(s) shall prepare a Health and Safety Plan in compliance with the requirements of Chapter 6.95, Division 20 of the Health and Safety Code (§§ 25500—25532). The plan shall include measures to be taken in the event of an accidental spill.

- The contractor(s) shall enforce strict on-site handling rules to keep construction and maintenance materials out of receiving waters and storm drains. In addition, the contractor(s) shall store all reserve fuel supplies only within the confines of designated construction staging areas, refuel equipment only within the designated construction staging areas, and regularly inspect all construction equipment for leaks.

- The construction staging area shall be designed to contain contaminants such as oil, grease, and fuel products so that they do not drain towards receiving waters or storm drain inlets.

4.9 Public Health and Safety

- Coordination and established communication with the Corps Reservoir Regulation Section personnel responsible for public notification of flood inflow to the Prado Dam Basin will prevent impacts to construction personnel and equipment working within the flood plain.

- The City of Corona will prepare a Project Safety Plan for Corps review and approval prior to entry onto the site for construction.

4.10 Traffic and Transportation

- A construction Traffic Management Plan would be prepared and submitted to Corps for review and approval prior to the start of any construction work. This plan would include such elements as the designation of haul routes for construction-related trucks, the location of access to the construction site, temporary traffic control devices or flagmen (if needed), travel time restrictions for construction-related traffic to avoid peak travel periods on selected roadways, and designated staging and parking areas for workers and equipment.

- Information on traffic will also be included in the Safety Plan, as appropriate.

5 Public Involvement, Coordination and Consultation

5.1 Project Delivery Team

The Corps Project Delivery Team for review of this proposal comprises a variety of specialists from a range of scientific and professional backgrounds, including project managers, biologists, planners, and engineers. Other specialists are engaged for resource-specific discussions and analyses and Corps staff coordinates with other regulatory agencies and stakeholders, as appropriate, including representatives of Federal, state, and local/regional agencies.

5.2 Agency Coordination

Although a "No Effect to Listed Species" determination is anticipated, this Draft EA has been discussed and will be noticed to the US Fish and Wildlife Service. It is also anticipated that the environmental impact analysis process will involve engagement with the California State Historic Preservation Office (SHPO) and with Tribes, as has already occurred during the CEQA process. Other agencies (e.g., SCAQMD, CRWQCB, SAR) may be coordinated with before the EA is finalized, and any interaction and notable, substantive discourse will be summarized herein.

5.3 Public Involvement

Public involvement is the process by which interested parties, affected individuals, non- governmental organizations, and governmental entities are consulted and included in the decision-making process addressing a planning or development effort. NEPA requires public notification of the availability of a Draft EA, and encourages the invitation of public and agency involvement in the process. This draft Environmental Assessment, with draft Finding of No Significant Impact, will be provided to the public for comment, for a period of 30 days.

6 Applicable Environmental Laws and Regulations

6.1 National Environmental Policy Act

NEPA requires that Federal agencies consider potential environmental consequences of proposed actions. The law's intent is to protect, restore, or enhance the environment through well-informed Federal decisions. The CEQ was established under NEPA for the purpose of implementing and overseeing Federal policies as they relate to this process. In 1978, the CEQ issued Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR § 1500-1508 [CEQ 1978]). These regulations specify that an EA be prepared to:

- Briefly provide sufficient analysis and evidence for determining whether to prepare an Environmental Impact Statement (EIS)or a Finding of No Significant Impact (FONSI);
- Aid in in an agency's compliance with NEPA when no EIS is necessary; and
- Facilitate preparation of an EIS when one is necessary.

Further, to comply with other relevant environmental requirements (e.g., the Endangered Species Act [ESA] and National Historic Preservation Act [NHPA]) in addition to NEPA, and to assess potential environmental impacts, the EIAP and decision-making process for the proposed action involves a thorough examination of all environmental issues pertinent to the Proposed Project. Specific to U.S. Army programs, compliance with NEPA is effectively ensured by incorporating policies and procedures outlined in Army Regulation (AR) 200-1, *Environmental Protection and Enhancement*, additional USACE guidance is outlined in 33 CFR 220, *Design Criteria for Dam and Lake Projects* and 33 CFR 230, *Procedures for Implementing NEPA*.

6.2 Biological Resources

The Endangered Species Act (ESA) (16 U.S. Code [USC] §§ 1531–1544, as amended) established measures for the protection of plant and animal species that are federally listed as threatened and endangered, and for the conservation of habitats that are critical to the continued existence of those species. Federal agencies must evaluate the effects of their proposed actions through a set of defined procedures, which can include the preparation of a Biological Assessment and can require formal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the ESA. This EA will include a summary of coordination with appropriate regulatory entities. As mentioned earlier, the Corps in consultation with the U.S. Fish and Wildlife Service (December 5, 2017), determined this project to result in May Affect, but Not Adversely Affect, listed species or their Critical Habitat. Therefore, no formal Section 7 consultation would be required. Stipulations outlined in other regulations promulgated to ensure the protection of sensitive species and their habitat (e.g., Migratory Bird Treaty Act [MBTA], Bald and Golden Eagle Protection Act [BGEPA], etc.) are also taken into consideration when evaluating potential impacts associated with implementation of a Proposed Action.

6.3 Clean Air Act and Conformity Requirements

The Clean Air Act (CAA) (42 USC §§ 7401–7671, as amended) provided the authority for the U.S. Environmental Protection Agency (USEPA) to establish nationwide air quality standards to protect public health and welfare.

Federal standards, known as the National Ambient Air Quality Standards (NAAQS), were developed for six criteria pollutants: ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). The CAA also requires that each state prepare a State Implementation Plan (SIP) for maintaining and improving air quality and eliminating violations of the NAAQS. Under the CAA Amendments of 1990, Federal agencies are required to determine whether their undertakings are in conformance with the applicable SIP and demonstrate that their actions will not cause or contribute to a new violation of the NAAQS; increase the frequency or severity of any existing violation; or delay timely attainment of any standard, emission reduction, or milestone contained in the SIP. The USEPA has set forth regulations in 40 CFR 51, Subpart W, which require the proponent of a proposed action to perform an analysis to determine if its implementation would comply with the SIP. This EA includes a presentation and an analysis of project elements (e.g., construction equipment and worker vehicle trips) that could affect local and regional air quality conditions.

6.4 Water Resources Regulatory Requirements

The Clean Water Act (CWA) of 1977 (33 USC §§ 1251 et seq.) regulates pollutant discharges that could affect aquatic life forms or human health and safety. Section 404 of the CWA, and EO 11990, Protection of Wetlands, regulate development activities in or near streams or wetlands. Section 404 also requires a permit from the USACE for dredging and filling in wetlands. EO 11988, Floodplain Management, as amended by EO 13960, requires Federal agencies to take action to reduce the risk of flood damage; minimize the impacts of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains. Federal agencies are directed to consider the proximity of their actions to or within floodplains.

Per USACE, this project is exempt from Sections 401 and 404 of the CWA and Section 10 of the Rivers and Harbors Act. Still, this EA includes a presentation and an analysis, and their mitigation, of project elements (e.g., sediment-laden runoff) that could affect local and regional water resources.

6.5 Cultural Resources Regulatory Requirements

The National Historic Preservation Act (NHPA) of 1966 (16 USC § 470) established the National Register of Historic Places (NRHP) and the Advisory Council on Historic Preservation (ACHP) which outlined procedures for the management of cultural resources on Federal property. Cultural resources can include archaeological remains, architectural structures, and traditional cultural properties such as ancestral settlements, historic trails, and places where significant historic events occurred. The NHPA requires Federal agencies to consider potential impacts to cultural resources that are listed, nominated to, or eligible for listing on the NRHP; designated a National Historic Landmark; or valued by modern Native Americans for maintaining their traditional culture. Section 106 of NHPA requires Federal agencies to consult with the appropriate SHPO and Tribe(s) if their undertaking might affect such resources. *Protection of Historic and Cultural Properties* (36 CFR 800) provides an explicit set of procedures for Federal agencies to meet their obligations under the NHPA, which includes inventorying of resources and consultation with SHPO. This EA includes a presentation and an analysis of project elements (e.g., trenching) that could affect cultural resources, as well as a description of coordination efforts undertaken with appropriate partiers.

The American Indian Religious Freedom Act (AIRFA) (42 USC § 1996) established Federal policy to protect and preserve the rights of Native Americans to believe, express, and exercise their traditional religions, including providing access to sacred sites. The Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC §§ 3001–3013) requires consultation with Native American Tribes prior to excavation or removal of human remains and certain objects of cultural importance.

6.6 Sustainability and Greening

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance,* strives to improve efficiency and environmental performance of Federal agencies by setting goals in the areas of energy efficiency, greenhouse gas emission mitigation, water conservation, waste management and recycling, green procurement, pollution prevention, and livable communities, among others. The EO specifies that every Federal organization and agency must make the reduction of greenhouse gas emissions a priority and establishes specific goal-setting, inventorying, and reporting requirements for Federal agencies. This includes an order for each agency to develop, implement, and update a Strategic Sustainability Performance Plan, which should work toward continual improvement of sustainable practices associated with Federal actions.

Sustainable green building and development practices can be recognized through sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. The U.S. Green Building Council's (USGBC's) Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is a third-party certification program and the nationally-accepted benchmark for the design, construction, and operation of high-performance green buildings (USGBC 2010). LEED rating systems are based on a set number of prerequisites and credits in six major categories: 1) sustainable sites; 2) water efficiency; 3) energy and atmosphere; 4) materials and resources; 5) indoor environmental quality; and 6) innovation and design process (USGBC 2009). In the most recent LEED rating system (version 2.2), buildings can qualify for four levels of certification, in order from highest to lowest: platinum, gold, silver, and certified. Benefits of constructing LEED-certified facilities include lower operating costs and increased asset value, reduced waste sent to landfills, conservation of energy and water, healthier and safer facilities for occupants, reduction of harmful greenhouse gas emissions that incrementally contribute to global climate change, and the demonstration of an owner's commitment to environmental stewardship and social responsibility.

6.7 Other Executive Orders

Additional regulatory legislation that potentially applies to the implementation of this Proposed Project includes guidelines promulgated by EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, to ensure that citizens in either of these categories are not disproportionately affected. Additionally, potential health and safety impacts that could disproportionately affect children are considered under the guidelines established by EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, acts as additional protection for migratory birds.

6.8 Intergovernmental Review of Federal Programs

EO 12372, *Intergovernmental Review of Federal Programs*, structures the Federal government's system of consultation with state and local governments on its decisions involving grants, other forms of financial assistance, and direct development. EO 12372 states in consultation with local governments, design their own review processes and select those federally supported development activities that they wish to review. As detailed in 40 CFR § 1501.4(b), CEQ regulations require intergovernmental notifications prior to making any detailed statement of environmental impacts. Through the consultation under EO 12372, the proponent notifies relevant Federal, state, and local agencies and allows them sufficient time to make known their environmental concerns specific to a proposed action. Comments and concerns submitted by these agencies are subsequently incorporated into the analysis of potential environmental impacts conducted as part of the EA.

7 Summary

Based on research and analyses conducted in support of this dEA, and contingent on comments received during the public review period, it is recommended that the Corps determine that a Finding of No Significant Impact (FONSI) is the appropriate decision document for this action and that an Environmental Impact Statement is not necessary.

A FONSI, if appropriate, would be a necessary precursor to the Corps for granting an easement to the City of Corona for its recycled water pipeline per the Preferred Alternative. This recommendation is based on the fact that this alternative best satisfies the purpose of and need for the proposed action while also resulting in the least amount of significant environmental impacts.

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Appendix A

Air Quality Modeling Results

Proposition 1 - Reclaimed Water Distribution System
City of Corona Department of Water and Power
Estimated Construction Emissions from Off-Road Heacy Duty Contstuction Equipment During Phase 1
WRCRWA Reclaimed Water Pipeline
2017 Construction Year

Equipment	Emission Factor gr/hp-hr	Emission Factor lb/hp-hr	Number	horsepower	laod factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
			Reactive Organic Gases (ROG)					
Air Compressors	0.671	0.00147797	1	78	0.48	4	0.22	
Concrete/Industrial Saws	0.557	0.00122687	1	81	0.73	1	0.07	
Cranes	0.5606	0.00123480	1	226	0.29	1	0.08	
Excavators	0.3336	0.00073480	1	163	0.38	6	0.27	
Off Highway Trucks	0.287	0.00063216	1	400	0.38	4	0.38	
Pavers	0.3889	0.00085661	1	126	0.42	1	0.05	
Paving Equipment	0.3425	0.00075441	1	131	0.36	1	0.04	
Plate Compactor	0.661	0.00145595	1	8	0.43	1	0.01	
Sweepers	0.7205	0.00158700	1	64	0.46	1	0.05	
Tractors/Loaders/Backhoes	0.5005	0.00110242	1	98	0.37	6	0.24	
Water Trucks	0.4172	0.00091894	1	189	0.38	2	0.13	
Totals							1.54	

Equipment	Emission Factor gr/hp-hr	Emission Factor lb/hp-hr	Number	horsepower	laod factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
			Carbon Monoxide (CO)					
Air Compressors	3.772	0.00830837	1	78	0.48	4	1.24	
Concrete/Industrial Saws	3.595	0.00791850	1	81	0.73	1	0.47	
Cranes	2.38452	0.00525225	2	226	0.29	6	4.13	
Excavators	3.15091	0.00694033	1	163	0.38	6	2.58	
Off Highway Trucks	1.74773	0.00384963	1	400	0.38	4	2.34	
Pavers	3.06282	0.00674630	1	126	0.42	1	0.36	
Paving Equipment	3.07321	0.00676919	1	131	0.36	1	0.32	
Plate Compactor	3.469	0.00764097	1	8	0.43	1	0.03	
Sweepers	4.01005	0.00883271	1	64	0.46	1	0.26	
Tractors/Loaders/Backhoes	3.7818	0.00832996	2	98	0.37	6	3.62	
Water Trucks	1.75281	0.00386081	1	189	0.38	2	0.55	
Totals							15.90	

Equipment	Emission Factor gr/hp-hr	Emission Factor lb/hp-hr	Number	horsepower	laod factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
			Oxides of Nitrogen (NO_x)					
Air Compressors	4.412	0.00971806	1	78	0.48	4	1.46	1.24
Concrete/Industrial Saws	4.086	0.00900000	1	81	0.73	1	0.53	0.45
Cranes	6.65526	0.01465916	1	226	0.29	6	5.76	4.90
Excavators	3.69967	0.00814905	1	163	0.38	6	3.03	2.57
Off Highway Trucks	3.66841	0.00808020	1	400	0.38	4	4.91	4.18
Pavers	4.35312	0.00958837	1	126	0.42	1	0.51	0.43
Paving Equipment	3.89633	0.00858222	1	131	0.36	1	0.40	0.34
Plate Compactor	4.142	0.00912335	1	8	0.43	1	0.03	0.03
Sweepers	6.0202	0.01326035	1	64	0.46	1	0.39	0.33
Tractors/Loaders/Backhoes	4.8087	0.01059185	1	98	0.37	6	2.30	1.96
Water Trucks	3.66841	0.00808020	1	189	0.38	2	1.16	0.99
Totals							20.49	17.42

Equipment	Emission Factor gr/hp-hr	Emission Factor lb/hp-hr	Number	horsepower	laod factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
			Oxides of Sulfur (SO_x)					
Air Compressors	0.006	0.00001322	1	78	0.48	4	0.00	
Concrete/Industrial Saws	0.006	0.00001322	1	81	0.73	1	0.00	
Cranes	0.0049	0.00001079	1	226	0.29	6	0.00	
Excavators	0.0049	0.00001079	1	163	0.38	6	0.00	
Off Highway Trucks	0.0049	0.00001079	1	400	0.38	4	0.01	
Pavers	0.0049	0.00001079	1	126	0.42	1	0.00	
Paving Equipment	0.0049	0.00001079	1	131	0.36	1	0.00	
Plate Compactor	0.008	0.00001762	1	8	0.43	1	0.00	
Sweepers	0.0049	0.00001079	1	64	0.46	1	0.00	
Tractors/Loaders/Backhoes	0.0049	0.00001079	1	98	0.37	6	0.00	
Water Trucks	0.0048	0.00001057	1	189	0.38	2	0.00	
Totals							0.02	

Equipment	Emission Factor gr/hp-hr	Emission Factor lb/hp-hr	Number	horsepower	laod factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
			Respirable Particulate Matter (PM_{10})					
Air Compressors	0.35	0.00077093	1	78	0.48	4	0.12	0.017318062
Concrete/Industrial Saws	0.294	0.00064758	1	81	0.73	1	0.04	0.005743685
Cranes	0.2967	0.00065352	1	226	0.29	6	0.26	0.03854878
Excavators	0.182	0.00040088	1	163	0.38	6	0.15	0.022347515
Off Highway Trucks	0.1362	0.00030000	1	400	0.38	4	0.18	0.02736
Pavers	0.2142	0.00047181	1	126	0.42	1	0.02	0.003745197
Paving Equipment	0.1946	0.00042863	1	131	0.36	1	0.02	0.003032159
Plate Compactor	0.161	0.00035463	1	8	0.43	1	0.00	0.000182987
Sweepers	0.5202	0.00114581	1	64	0.46	1	0.03	0.005059919
Tractors/Loaders/Backhoes	0.3616	0.00079648	1	98	0.37	6	0.17	0.02599219
Water Trucks	0.1887	0.00041564	1	189	0.38	2	0.06	0.008955353
Totals							1.06	0.16

Equipment	Emission Factor gr/hp-hr	Emission Factor lb/hp-hr	Number	horsepower	laod factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
			Fine Particulate Matter ($PM_{2.5}$)					
Air Compressors	0.35	0.00077093	1	78	0.48	4	0.12	0.017318062
Concrete/Industrial Saws	0.294	0.00064758	1	81	0.73	1	0.04	0.005743685
Cranes	0.273	0.00060132	1	226	0.29	6	0.24	0.035469555
Excavators	0.1304	0.00028722	1	163	0.38	6	0.11	0.016011626
Off Highway Trucks	0.1253	0.00027599	1	400	0.38	4	0.17	0.025170396
Pavers	0.1971	0.00043414	1	126	0.42	1	0.02	0.003446211
Paving Equipment	0.1791	0.00039449	1	131	0.36	1	0.02	0.002790646
Plate Compactor	0.161	0.00035463	1	8	0.43	1	0.00	0.000182987
Sweepers	0.4786	0.00105419	1	64	0.46	1	0.03	0.004655281
Tractors/Loaders/Backhoes	0.3327	0.00073282	1	98	0.37	6	0.16	0.023914828
Water Trucks	0.1736	0.00038238	1	189	0.38	2	0.05	0.008238735
Totals							0.95	0.14

Equipment	Emission Factor gr/hp-hr	Emission Factor lb/hp-hr	Number	horsepower	laod factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
			Carbon Dioxide (CO_2)					
Air Compressors	568.3	1.25176211	1	78	0.48	4	187.46	
Concrete/Industrial Saws	568.299	1.25175991	1	81	0.73	1	74.02	
Cranes	499.3721	1.09993855	1	226	0.29	6	432.54	
Excavators	498.5222	1.09806652	1	163	0.38	6	408.09	
Off Highway Trucks	501.4368	1.10448634	1	400	0.38	4	671.53	
Pavers	498.967	1.09904626	1	126	0.42	1	58.16	
Paving Equipment	497.148	1.09503965	1	131	0.36	1	51.64	
Plate Compactor	568.299	1.25175991	1	8	0.43	1	4.31	
Sweepers	500.4555	1.10232489	1	64	0.46	1	32.45	
Tractors/Loaders/Backhoes	502.7952	1.10747841	1	98	0.37	6	240.94	
Water Trucks	494.7935	1.08985352	1	189	0.38	2	156.55	
Totals							2317.69	

Equipment	Emission Factor gr/hp-hr	Emission Factor lb/hp-hr	Number	horsepower	laod factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
			Methane (CH_4)					
Air Compressors	0.06	0.00013216	1	78	0.48	4	0.02	
Concrete/Industrial Saws	0.05	0.00011013	1	81	0.73	1	0.01	
Cranes	0.153	0.00033700	1	226	0.29	6	0.13	
Excavators	0.1527	0.00033634	1	163	0.38	6	0.12	
Off Highway Trucks	0.1536	0.00033833	1	400	0.38	4	0.21	
Pavers	0.1529	0.00033678	1	126	0.42	1	0.02	
Paving Equipment	0.1523	0.00033546	1	131	0.36	1	0.02	
Plate Compactor	0.059	0.00012996	1	8	0.43	1	0.00	
Sweepers	0.1533	0.00033767	1	64	0.46	1	0.01	
Tractors/Loaders/Backhoes	0.1541	0.00033943	1	98	0.37	6	0.07	
Water Trucks	0.1536	0.00033833	1	189	0.38	2	0.05	
Totals							0.66	

Proposition 1 - Reclaimed Water+A1:F32 Distribution System
Estimated Emissions from On-Road Construction Traffic During Phaase 1
WRCRWA Reclaimed Water Pipeline
Based on EMFAC 2014 Emission Factors

Heavy Heavy Duty Diesel Tractor Trucks
2017

Pollutant	Emission Factor		Number of Trucks	Miles Per Day	Emissions lbs/day
	grams per mile	pounds per mile			
ROG	0.17846	0.00039308	2	100	0.08
CO	0.66005	0.00145385	2	100	0.29
NO_x	5.948278	0.01310193	2	100	2.62
SO_x	0.015438	0.00003400	2	100	0.01
PM_{10}	0.06174	0.00013599	2	100	0.03
$PM_{2.5}$	0.04065	0.00008954	2	100	0.02
CO_2	1618.193	3.56430176	2	100	712.86
CH_4		0.00006722	2	100	0.01

Medium Duty Truck (GVWR 6000 to 8500 pounds) Emissions - Construction Inspection
2017

Pollutant	Emission Factor		Number of Trucks	Miles Per Day	Emissions lbs/day
	grams per mile	pounds per mile			
ROG	0.019768	0.00004354	2	100	0.01
CO	0.262245	0.00057763	2	100	0.12
NO_x	0.066597	0.00014669	2	100	0.03
SO_x	0.004711	0.00001038	2	100	0.00
PM_{10}	0.03675	0.00008095	2	100	0.02
$PM_{2.5}$	0.01575	0.00003469	2	100	0.01
CO_2	493.4487	1.08689141	2	100	217.38
CH_4		0.00006182	2	100	0.01

Medium Duty Truck (GVWR 6000 to 8500 pounds) Emissions - Commute Vehicles

2017

Pollutant	Emission Factor		Number of Trucks	Miles Per Day	Emissions lbs/day
	grams per mile	pounds per mile			
ROG	0.019768	0.00004354	10	50	0.02
CO	0.262245	0.00057763	10	50	0.29
NO_x	0.066597	0.00014669	10	50	0.07
SO_x	0.004711	0.00001038	10	50	0.01
PM_{10}	0.03675	0.00008095	10	50	0.04
$PM_{2.5}$	0.01575	0.00003469	10	50	0.02
CO_2	493.4487	1.08689141	10	50	543.45
CH_4		0.00006182	10	50	0.03

Appendix B

CNDDB Search Results

Table 1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
WILDLIFE SPECIES				
Agelaius tricolor tricolored blackbird	Fed: **END** CA: CSC	Range is limited to the coastal areas of the Pacific coast of North America, from Northern California to upper Baja California. Can be found in a wide variety of habitat including annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields, cattle feedlots, and dairies. Occasionally forage in riparian scrub habitats along marsh borders. Basic habitat requirements for breeding include open accessible water, protected nesting substrate (freshwater marsh dominated by cattails, willows, and bulrushes [*Schoenoplectus* sp.]), and either flooded or thorny or spiny vegetation and suitable foraging space providing adequate insect prey.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Aimophila ruficeps canescens southern California rufous-crowned sparrow	Fed: None CA: WL	Typically found between 3,000 and 6,000 feet in elevation. Breed in sparsely vegetated shrublands on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush (*Artemisia californica*), but can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Anaxyrus californicus arroyo toad	Fed: **END** CA: CSC	Breeding habitat is restricted to shallow, slow-moving stream, and riparian habitats. Breeds in shallow, sandy pools, usually bordered by sand and gravel flood terraces. Occurs in a variety of upland habitats including sycamore-cottonwood woodlands, coastal sage scrub, chaparral, and grassland. Requires areas of sandy or friable soils for burrowing.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Artemisiospiza belli belli Bell's sage sparrow	Fed: None CA: WL	Occurs in chaparral dominated by fairly dense stands of chamise. Also found in coastal sage scrub in south of range.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Aspidoscelis hyperythra orangethroat whiptail	Fed: None CA: CSC	Semi-arid brushy areas typically with loose soil and rocks, including washes, streamsides, rocky hillsides, and coastal chaparral.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Athene cunicularia burrowing owl	Fed: None CA: CSC	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Buteo swainsoni Swainson's hawk	Fed: None CA: **THR**	Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Catostomus santaanae Santa Ana sucker	Fed: **THR** CA: CSC	Occur in the watersheds draining the San Gabriel and San Bernardino Mountains of southern California. Steams that Santa Ana Sucker inhabit are generally perennial streams with water ranging in depth from a few inches to several feet and with currents ranging from slight to swift.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Chaetodipus fallax fallax northwestern San Diego pocket mouse	Fed: None CA: CSC	Occurs in desert and coastal habitats in southern California, Mexico, and northern Baja California, from sea level to at least 1,400 meters above msl. Found in a variety of temperate habitats ranging from chaparral and grasslands to scrub forests and deserts. Requires low growing vegetation or rocky outcroppings, as well as sandy soils for burrowing.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Coccyzus americanus occidentalis western yellow-billed cuckoo	Fed: **THR** CA: **END**	In California, the breeding distrution is now thought to be restricted to isolated sites in Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys. Obligate riparian species with a primary habitat association of willow-cottonwood riparian forest.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Coleonyx variegatus abbotti San Diego banded gecko	Fed: None CA: None	Prefers rocky areas in coastal sage and chaparral within granite or rocky outcrops. Occurs in coastal and cismontane southern California from interior Ventura Co. south.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Crotalus ruber red-diamond rattlesnake	Fed: None CA: CSC	It can be found from the desert, through dense chaparral in the foothills (it avoids the mountains above around 4,000 feet), to warm inland mesas and valleys, all the way to the cool ocean shore. It is most commonly associated with heavy brush with large rocks or boulders. Dense chaparral in the foothills, cactus or boulder associated coastal sage scrub, oak and pine woodlands, and desert slope scrub associations are known to carry populations of the northern red-diamond rattlesnake; however, chamise and red shank associations may offer better structural habitat for refuges and food resources for this species than other habitats.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Dipodomys merriami parvus San Bernardino kangaroo rat	Fed: **END** CA: CSC	Primarily found in Riversidian alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. May occur at lower densities in Riversidian upland sage scrub, chaparral and grassland in uplands and tributaries in proximity to Riversidian alluvial fan sage scrub habitats. Tend to avoid rocky substrates and prefer sandy loam substrates for digging of shallow burrows.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Dipodomys stephensi Stephens' kangaroo rat	Fed: **END** CA: **THR**	Occur in arid and semi-arid habitats with some grass or brush. Prefer open habitats with less than 50% protective cover. Require soft, well-drained substrate for building burrows and are typically found in areas with sandy soil.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Elanus leucurus white-tailed kite	Fed: None CA: FP	Occurs in low elevation, open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Uses trees with dense canopies for cover. Important prey item is the California vole.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Empidonax traillii extimus southwestern willow flycatcher	Fed: **END** CA: **END**	Occurs in riparian woodlands in southern California. Typically requires large areas of willow thickets in broad valleys, canyon bottoms, or around ponds and lakes. These areas typically have standing or running water, or are at least moist.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Emys marmorata western pond turtle	Fed: None CA: CSC	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater. Found at elevations from sea level to over 5,900 feet (1,800 m).	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Eremophila alpestris actia California horned lark	Fed: None CA: WL	Generally found in shortgrass prairies, grasslands, disturbed fields, or similar habitat types. Flocks in groups.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Eumops perotis californicus western mastiff bat	Fed: None CA: CSC	Primarily a cliff-dwelling species, roost generally under exfoliating rock slabs. Roosts are generally high above the ground, usually allowing a clear vertical drop of at least three meters below the entrance for flight. In California, it is most frequently encountered in broad open areas. Its foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Gila orcuttii arroyo chub	Fed: None CA: CSC	Warm streams of the Los Angeles Plain, which are typically muddy torrents during the winter, and clear quiet brooks in the summer, possibly drying up in places. They are found both in slow-moving and fast-moving sections, but generally deeper than 40 cm.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Icteria virens yellow-breasted chat	Fed: None CA: CSC	Primarily found in tall, dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories. Nesting areas are associated with streams, swampy ground, and the borders of small ponds. Breeding habitat must be dense to provide shade and concealment. It winters south the Central America.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Lampropeltis zonata (pulchra) California mountain kingsnake (San Diego population)	Fed: None CA: CSC	Found in diverse habitats including coniferous forest, oak-pine woodlands, riparian woodland, chaparral, Manzanita, and coastal sage scrub. Wooded areas near a stream with rock outcrops, talus or rotting logs that are exposed to the sun.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Lasiurus xanthinus western yellow bat	Fed: None CA: CSC	Roosts in palm trees in foothill riparian, desert wash, and palm oasis habitats with access to water for foraging.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Nyctinomops femorosaccus pocketed free-tailed bat	Fed: None CA: CSC	Often found in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Phrynosoma blainvillii coast horned lizard	Fed: None CA: CSC	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (i.e. fire, floods, roads, grazing, fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Polioptila californica californica coastal California gnatcatcher	Fed: THR CA: CSC	Obligate resident of sage scrub habitats that are dominated by California sagebrush (*Artemisia californica*). This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. Ranges from the Ventura County, south to San Diego County and northern Baja California and it is less common in sage scrub with a high percentage of tall shrubs. Prefers habitat with more low-growing vegetation.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Rhaphiomidas terminatus abdominalis Delhi Sands flower-loving fly	Fed: **END** CA: None	DSF habitat is limited to areas that include Delhi fine sand, an aeolian (wind-deposited) soil type. The highest density of DSF have been found in habitat that includes a variety of plants including California buckwheat, California croton, deerweed, and telegraph weed.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Setophaga petechia yellow warbler	Fed: None CA: CSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment. Suitable habitat occurs immediately adjacent to the project site within the Santa Ana River.
Spea hammondii western spadefoot	Fed: None CA: CSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washed, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rainpools which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Vireo bellii pusillus least Bell's vireo	Fed: **END** CA: **END**	Primarily occupy Riverine riparian habitat that typically feature dense cover within 1 -2 meters of the ground and a dense, stratified canopy. Typically it is associated with southern willow scrub, cottonwood-willow forest, mule fat scrub, sycamore alluvial woodlands, coast live oak riparian forest, arroyo willow riparian forest, or mesquite in desert localities. It uses habitat which is limited to the immediate vicinity of water courses, 2,000 feet elevation in the interior.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment. Suitable habitat occurs immediately adjacent to the project site within the Santa Ana River.
PLANT SPECIES				
Abronia villosa var. aurita chaparral sand-verbena	Fed: None CA: None CNPS: 1B.1	Found on the coastal side of the southern California mountains in chaparral and coastal sage scrub plant communities in areas of full sun and sandy soils. Found at elevations ranging from 262 to 5,249 feet. Blooming period is from January to September.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Calochortus plummerae Plummer's mariposa-lily	Fed: None CA: None CNPS: 4.2	Found on rocky and sandy soils, usually of granitic or alluvial material, within coastal scrub, chaparral, grassland, forests, and woodlands. From 295 to 5,280 feet in elevation.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Calochortus weedii var. intermedius intermediate mariposa-lily	Fed: None CA: None CNPS: 1B.2	Found on dry, rocky soils in chaparral, coastal scrub, valley and foothill grasslands, as well as rocky outcrops. From 395 to 2,805 feet in elevation.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Centromadia pungens ssp. laevis smooth tarplant	Fed: None CA: None CNPS: 1B.1	Occurs in alkaline soils within chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland habitats. Grows in elevation from 0 to 2,100 feet. Blooming period ranges from April to September.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Dudleya multicaulis many-stemmed dudleya	Fed: None CA: None CNPS: 1B.2	Often occurs on clay soils and around granitic outcrops in chaparral, coastal sage scrub, and grasslands. Found at elevations ranging from 0 to 2,592 feet. Blooming period is from April to July.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Eriastrum densifolium ssp. sanctorum Santa Ana River woollystar	Fed: **END** CA: **END** CNPS: 1B.1	Grows in sandy or gravelly soils within chaparral and coastal scrub habitat. Found at elevations ranging from 299 to 2,001 feet. Blooming period is from April to September.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Lepechinia cardiophylla heart-leaved pitcher sage	Fed: None CA: None CNPS: 1B.2	Occurs in closed-cone coniferous forest, chaparral and cismontane woodland. From 1,804 to 4,495 feet in elevation.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Lepidium virginicum var. robinsonii Robinson's pepper-grass	Fed: None CA: None CNPS: 4.3	Dry soils on chaparral and coastal sage scrub. Found at elevations ranging from 3 to 2,904 feet. Blooming period is from January to July.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Monardella hypoleuca ssp. intermedia intermediate monardella	Fed: None CA: None CNPS: 1B.3	Found in lower montane coniferous forest and chaparral plant communities between 1,312 and 4,101 feet in elevation.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Nolina cismontana chaparral nolina	Fed: None CA: None CNPS: 1B.2	Found in chaparral and coastal scrub plant communities between 460 and 4,183 feet. Primarily on sandstone and shale substrates; also known as gabbro.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
Phacelia keckii Santiago Peak phacelia	Fed: None CA: None CNPS: 1B.3	Prefers open areas, sometimes along creeks only from Orange and Riverside counties. From 1,788 to 5,249 feet in elevation.	No	**Presumed absent.** No suitable habitat is present within the pipeline alignment.
CDFW SENSITIVE HABITATS				

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Southern California Arroyo Chub/Santa Ana Sucker Stream	CDFW Sensitive Habitat	Characterized by a functioning hydrological system that experiences peaks and ebbs in the water volume throughout the year; a mosaic of loose sand, gravel, cobble, and boulder substrates in a series of riffles, runs, pools and shallow sandy stream margins; water depths greater than 1.2 inches and water bottom velocities of more than 0.01 feet per second; non-turbid conditions or only seasonally turbid water; water temperatures less than 86° Fahrenheit; and stream habitat that includes algae, aquatic emergent vegetation, macroinvertebrates, and riparian vegetation.	No	**Absent.** Does not occur within the pipeline alignment.
Southern Coast Live Oak Riparian Forest	CDFW Sensitive Habitat	Open to locally dense evergreen riparian woodlands dominated by *Quercus agrifolia*. This type appears to be richer in herbs and poorer in understory shrubs than other riparian communities. Bottomlands and outer floodplains along larger streams, on fine-grained, rich alluvium. Canyons and valleys of coastal southern California.	No	**Absent.** Does not occur within the pipeline alignment.
Southern Cottonwood Willow Riparian Forest	CDFW Sensitive Habitat	Dominated by cottonwood (*Populus* sp.) and willow (*Salix* sp.) trees and shrubs. Considered to be an early successional stage as both species are known to germinate almost exclusively on recently deposited or exposed alluvial soils.	No	**Absent.** However occur immediately adjacent to the project site within the Santa Ana River
Southern Interior Cypress Forest	CDFW Sensitive Habitat	Fairly dense, fire-maintained, low forest dominated by *Cupressus nevadensis*, *C. forbesii*, or *C. stephensonii*. This forest often occurs as isolated groves within a matrix of chaparral or pinyon-juniper woodland.	No	**Absent.** Does not occur within the pipeline alignment.
Southern Riparian Forest	CDFW Sensitive Habitat	Typically a younger successional stage of riparian forest, due to disturbance or more frequent flooding. Plant species include willow species, elderberry, oak species, sycamore, cottonwood, and smaller shrubs.	No	**Absent.** Does not occur within the pipeline alignment.
Southern Sycamore Alder Riparian Woodland	CDFW Sensitive Habitat	Below 2,000 meters in elevation, sycamore and alder often occur along seasonally-flooded banks; cottonwoods and willows also are often present. Poison-oak, mugwort, elderberry and wild raspberry may be present in the understory.	No	**Absent.** Does not occur within the pipeline alignment.
Southern Willow Scrub	CDFW Sensitive Habitat	Dense, broadleaved, winter-deciduous riparian thickets dominated by several *Salix* species, with scattered emergent *Populus fremontii* and *Platanus racemosa*. Most stands are too dense to allow much understory development. Loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. This early seral type required repeated flooding to prevent succession to Southern Cottonwood-Sycamore Riparian Forest.	Yes	**Absent.** Does not occur within the pipeline alignment.

U.S. Fish and Wildlife Service (USFWS) - Federal
END- Federal Endangered
THR- Federal Threatened
PT- Proposed Threatened

California Department of Fish and Wildlife (CDFW) - California
END- California Endangered
THR- California Threatened
CSC- California Species of Concern
WL- Watch List
FP- California Fully Protected

California Native Plant Society (CNPS)
California Rare Plant Rank
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2B Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
4 Plants of Limited Distribution – A Watch List

Threat Ranks
0.1- Seriously threatened in California
0.2- Moderately threatened in California
0.3- Not very threatened in California