COACHELLA VALLEY WATER DISTRICT

COACHELLA VALLEY STORMWATER CHANNEL IMPROVEMENT PROJECT (AVENUE 54 TO THERMAL DROP STRUCTURE)

DRAFT ENVIRONMENTAL IMPACT REPORT SCH No. 2015111067

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Coachella Valley Stormwater Channel Improvement Project Avenue 54 to Thermal Drop Structure DRAFT ENVIRONMENTAL IMPACT REPORT

EXECUTIVE SUMMARY

INTRODUCTION

The Coachella Valley Water District (CVWD or District) has prepared this Environmental Impact Report (EIR) to evaluate the potential environmental impacts related to the Coachella Valley Stormwater Channel Improvement Project – Avenue 54 to Thermal Drop Structure (Proposed Project or Project). CVWD is the Lead Agency under the California Environmental Quality Act (CEQA) for this Proposed Project.

The EIR has been prepared in accordance with CEQA (as amended) (Public Resources Code §§21000-21189.57) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, §§15000-15387). Under State CEQA Guidelines §15121 (Informational Document):

- *An EIR is an informational document which will inform public agency decisionmakers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency.*

- *While the information in the EIR does not control the agency's ultimate discretion on the project, the agency must respond to each significant effect identified in the EIR by making findings under Section 15091 and if necessary by making a statement of overriding consideration under Section 15093.*

- *The information in an EIR may constitute substantial evidence in the record to support the agency's action on the project if its decision is later challenged in court.*

Under State CEQA Guidelines §15123, this Executive Summary describes the proposed project, potentially significant impacts, and required avoidance, minimization and mitigation measures. Also identified in this chapter is a summary of the alternatives to the project evaluated in this Draft EIR (Draft EIR or DEIR), including those that would avoid potentially significant effects; issues of concern/areas of controversy known to the Lead Agency; and issues to be resolved including the choice among alternatives and how best to mitigate the potentially significant effects.

The reader should review, but not rely exclusively on the Executive Summary as the sole basis for judgment of the proposed project and alternatives. The complete DEIR should be consulted for specific information about the potential environmental effects and mitigation measures to address those effects.

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SUMMARY OF THE PROPOSED PROJECT

The Coachella Valley Stormwater Channel (CVSC) Improvement Project – Avenue 54 to Thermal Drop Structure involves improvements to existing channel facilities and is required to: 1) restore channel flow conditions to convey the 100-year flood and provide requisite freeboard, and 2) remove the existing threat of flooding during a 100-year storm event to the parcels within the area of benefit.

The Project study area is a portion of the engineered extension of the Whitewater River Stormwater Channel (WWRSC). The WWRSC/CVSC functions as a conveyance channel for regional stormwater runoff, agricultural irrigation return water, and treated wastewater.

The CVSC extends approximately 25 miles from the Washington Street bridge in La Quinta, California to the Salton Sea. The channel was as-built in the 1970s to convey a Standard Project Flood (SPF), or a flow of approximately 82,000 cubic feet per second (cfs) which is now superseded. The 100-Year Flood with a peak flow of 39,000 cfs is the design standard for the Project per CVWD Ordinance 1234.2.

The *Coachella Valley Stormwater Channel Hydraulic Analysis: Existing Conditions Hydraulic Study* (NHC 2012) determined that portions of the existing channel have insufficient capacity for conveying the 100-year flood. Existing, planned and permissible development in this part of the Coachella Valley is therefore subject to a flooding threat in the event of a 100-year flood in the subject reach of the CVSC. The Proposed Project is designed to convey the 100-year flood flow through the subject channel reach and provide a 100-year flood protection to adjacent and downstream lands.

In addition to the channel improvements, there are four utility relocation projects that have been analyzed as part of the Project. They include the relocation of Irrigation Lateral 99.8 (CVWD), an 8-inch natural gas pipeline (Southern California Gas Company), and two power line clusters located near Airport Boulevard and the UPRR Bridge (Imperial Irrigation District).

<u>Background and Project Summary</u>
The Project is focused on the CVSC including the existing unlined trapezoidal channel, banks, and levees, and small sections of riprap slope protection at the Highway 111 and railroad bridges. Existing bridges that cross the subject channel reach include Airport Boulevard (Avenue 56), State Highway 111, and two Union Pacific Railroad (UPRR) rail lines. Project bridges are constriction areas along the subject channel reach, as they narrow the channel and right-of-way at these locations. Refer to Exhibits 1-4 which demonstrate the proposed project location and alignment.

The channel top width (bank to bank) ranges from 430± to 530± feet wide upstream of Airport Boulevard, between 300± to 350± feet between Airport Boulevard and the Highway 111 bridge, and 450± to 550± feet downstream of the Highway 111 bridge. The depth of the channel below the top levee (or top of bank in reaches where levees are not present) ranges from about 18 feet to 35 feet. Natural gas and petroleum transmission lines, fiber optic cable and an agricultural irrigation line occur within the Project area and may need to be relocated as a part of this Project.

In August 2014, CVWD prepared the CVSC Master Plan Alternative Study, part of the Stormwater Master Plan for the Eastern Coachella Valley Stormwater Channel. The purpose of the Master Plan study was to evaluate conceptual channel improvements that would convey the 100-Year Flood and the Standard Project Flood (SPF) with adequate freeboard. The Master Plan study area included the CVSC from Avenue 52 downstream to the Salton Sea. Six (6) alternatives were considered to improve flood conveyance and reduce hazards on the adjacent properties for the feasibility analysis within the Master Plan Alternative Study. This Project is the first phase of the improvements analyzed in the CVSC Master Plan Alternatives Study.[1]

Primary engineering elements considered include channel geometry, bridge modifications, widening portions of the existing channel, channel lining, vegetation and roughness, and lowering of the existing channel invert. These elements not only affect channel design, but also have a direct bearing on flood conveyance capacity and associated environmental impacts. As noted above, the project bridges constrict flows and limit options for increasing channel capacity at these locations. The relocation of the irrigation lateral and utilities are also a part of the Project.

STATEMENT OF PROJECT OBJECTIVES

Under State CEQA Guidelines §15124(b), the project description shall include a statement of objectives. These objectives have been designed to assist CVWD in developing a reasonable range of project alternatives to evaluate in the DEIR and aid the decision-makers in preparing findings or a statement of overriding considerations, if necessary.

The project objectives are intended to address the purpose of the CVSC Improvement Project. CVWD has identified the following list of criteria as the objectives for the project.

- Provide protection to life and property during the 100-year flood events.
- Restore channel capacity to safely convey the 100-year flood flows within the project area.
- Provide stormwater capture opportunities and perpetuate the natural drainage pattern of the area to the maximum extent practicable.
- Provide the most economical combination of facilities considering environmental constraints, right-of-way acquisition, construction, and maintenance costs.
- Allow CVWD to continue to meet government regulatory standards for stormwater protection.
- Improve the subject reach of the CVSC to meet current CVWD criteria for stormwater management facilities.
- Reduce flood hazards and revise FEMA Flood Insurance Rate Maps to reflect the benefit of the project to the adjacent property owners and/or community.

[1] Tetra Tech. 2014 Coachella Valley Water District, Riverside County, California, Eastern Coachella Valley Stormwater Master Drainage Plan.

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Section 2, Environmental Setting, Impacts, and Mitigation Measures, of this DEIR presents the environmental impact analyses for all CEQA resource topics and identifies mitigation measures to reduce significant impacts to a less than significant level, where appropriate and feasible. A summary of all potential environmental impacts and mitigation measures from Section 2 is provided in the Mitigation Monitoring and Reporting Program (MMRP) at the end of this summary. The MMRP is intended to provide a summary of the project's impacts and mitigation measures; please refer to Section 2 of the EIR for the complete analysis and discussion.

One resource topic, Noise, was identified as having impacts that are significant and unavoidable as they relate to construction-related groundborne vibration. Using the Caltrans construction vibration standards for human annoyance, the Project construction activities will exceed the vibration standard of 0.01 in/sec PPV (peak particle velocity) at locations within 100 feet of plate compactors and large bulldozers during construction. If used as part of the project, compactors and large bulldozers within 100 feet of nearby sensitive receptors (such as residential land uses) would also generate a significant impact related to groundborne vibration.

Due to the proximity of existing residences to the northern boundaries of the project construction area, impacts associated with groundborne vibration during construction would be significant and unavoidable. However, periods of elevated (higher) groundborne noise will be temporary and short-term and impacts to sensitive receptors will lessen as construction moves away from sensitive receptors.

A *Statement of Overriding Considerations* will be prepared with regard to unavoidable noise impacts and will be considered by the District's Board of Directors at a public meeting as a part of its review of the Draft EIR (State CEQA Guidelines §15093). The draft statement will set forth information, considerations and findings that are supportive of the goals and benefits of the project as a whole.

ALTERNATIVES SUMMARY

Section 3, Alternatives, of this DEIR presents the alternatives analysis for the proposed project. State CEQA Guidelines §15126.6 requires that an EIR describe and evaluate the comparative merits of a range of alternatives to the project that could feasibly attain most of the objectives of the project but would avoid or substantially lessen any significant adverse effects of the project. An EIR is not required to consider every conceivable alternative to a project; rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. The State CEQA Guidelines further state that the specific alternative of "no project" shall also be evaluated. The alternatives evaluated in this DEIR were identified based on input from CVWD and identification of the project's significant environmental impacts in this DEIR. The alternatives were selected in consideration of one or more of the following factors:

- Extent to which the alternative would accomplish most of the basic objectives of the project;
- Extent to which the alternative would avoid or lessen any of the identified significant adverse environmental effects of the project;
- Feasibility of the alternative, taking into account site/geographic suitability, economic viability, constructability, and consistency with regulatory requirements; and
- Appropriateness of the alternative in contributing to a reasonable range of alternatives necessary to permit a reasoned choice by decision-makers.

All build alternatives also include the relocation of Irrigation Lateral 99.8 (CVWD), an 8-inch natural gas pipeline (Southern California Gas Company), and two power line clusters located near Airport Boulevard and the UPRR Bridge (Imperial Irrigation District).

In consideration of the above factors, the following alternatives were selected to be addressed in this DEIR.

Alternative B – Fully Lined Channel

Alternative B proposes to fully line the channel cross section (sides and bottom) with reinforced concrete from approximately 1,000 feet upstream of Airport Boulevard downstream to the Thermal Drop Structure. Upstream of the fully lined section, only slope protection would be constructed. The channel invert would be lowered approximately five feet over the same extents as full lining construction. See Exhibit 1-7. Alternative B will also require relocation of Irrigation Lateral 99.8 east and west of the channel. (see Exhibit 1-6A).

This alternative can pass the 100-Year flow and provide four feet of freeboard. The concrete lining would reduce the resistance to flow sufficiently to convey the design flow and eliminate the need to maintain vegetation in the fully-lined portion of the channel. Reinforcement or other upgrades comparable to those associated with Alternative A will be required at bridge piers and substructures. These upgrades may take the form of extending existing bridge pile cross bracing and side curtains to provide supplemental support and protection of bridge supports. In addition, this alternative would increase the channel cross-section by steepening channel side slopes. Any widening of the channel would be restricted to the existing CVWD rights-of-way.

Alternative C – Slope Lining and Channel Widening

Alternative C would provide slope protection along the entire length of the Project channel reach. The existing channel bottom would be unlined except at the bridges, and a soft bottom along most of the channel where vegetation will be permitted with minimal maintenance. This alternative widens the eastern portion of the channel between Airport Boulevard and UPRR bridges; CVWD will periodically mow vegetation in this new portion of unlined channel bottom to maintain channel capacity. The channel would be widened to the east between the mobile home park at Airport Boulevard downstream to the northernmost UPRR bridge.

In summary, vegetation in the existing channel would largely be unmaintained. Vegetation in the widened portion of the channel would be regularly maintained. See Exhibit 1-8. The channel invert would be lowered approximately five feet from about 1,000 feet upstream of the Airport Boulevard. Bridge to the Thermal Drop Structure. Lining would be constructed beneath the bridges similar to Alternative A. Alternative C will also require relocation of Irrigation Lateral 99.8 east and west of the channel (see Exhibit 1-6A).

This alternative would convey the 100-year flood, while allowing vegetation in the existing channel bottom to be relatively undisturbed. Periodic clearing of vegetation would be required in the widened (easterly) portion of the channel bottom.

Alternative D – No Project Alternative

Alternative D, the No Project Alternative, would result in no improvements to the existing channel. However, the channel cannot currently convey the 100-year flow and does not meet FEMA nor CVWD design criteria. The area at risk of flooding (Special Flood Hazard Area (SFHA)) under the No-Project Alternative is shown on the current Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map. Within this SFHA, FEMA's floodplain management regulations must be enforced, and flood insurance is mandatory. Also see Exhibit 2-7 for the Existing 100-year Floodplain Map.

The No Project alternative would avoid the effects associated with the Proposed Project's construction and operation and would therefore not permanently affect the site. However, an aggressive vegetation removal/maintenance regime would be required to maximize existing channel capacity, understanding that the projected 100-year flooding could worsen without this maintenance.

Without channel improvements, the No Project Alternative would leave a wide area south of Airport Boulevard and the community (southward) subject to one to three feet of flooding in a 100-Year flood, risking both life and property. It also leaves the areas to be permanently mapped as special flood hazard area (within the 100-Year Flood Zone) with increased costs of flood insurance premiums for the community.

ISSUES OF CONCERN/AREAS OF CONTROVERSY

When a Lead Agency determines that an EIR is required for a project, a Notice of Preparation (NOP) must be prepared and submitted to the State Clearinghouse, and responsible and trustee agencies. In addition, CVWD provided a copy of NOP to the Riverside County Clerk; mailed the NOP to the proposed project distribution list; and published the NOP in The Desert Sun newspaper, and notices were also mailed directly to surrounding property owners in English and Spanish (refer to Appendix A for these materials).

The purpose of the NOP is to provide responsible and trustee agencies, and the public, with sufficient information describing the proposed project and the potential environmental effects, to enable interested parties/persons to make a meaningful response.

CVWD issued the NOP for the Project on November 22, 2015, for a 30-day public review period which concluded on December 23, 2015. Three (3) comment letters were received from the South Coast Air Quality Management District (SCAQMD), Imperial Irrigation District (IID), and the U.S. Fish and Wildlife Service (USFWS) (see Appendix A). In general, comments were limited to requesting that further detail be provided in the EIR, and immediate responses were not required by CEQA. The three agencies/districts who provided comments will receive proper notification and DEIR materials during the public comment period process.

Based on the comments received on the NOP and at the scoping meeting, the following issues of concern were raised about the project:

1. SCAQMD is requesting a copy of the DEIR and appendices or technical documents related to air quality and greenhouse gas analyses and electronic versions of all air quality modeling files. The requested analysis is addressed in EIR in Sections 2.5 Air Quality and 2.9 Greenhouse Gas Emissions. CVWD will submit the requested documents and materials to SCAQMD when the EIR is circulated for public comment.

2. IID's concerns are mainly in regard to existing electrical infrastructure in the Project area, including distribution and transmission lines, and Project encroachment onto IID property or within IID's existing and proposed right of way. CVWD staff has been communicating with the appropriate IID staff to ensure encroachment permits are obtained if necessary, and discussion of IID's infrastructure and potential Project impacts are addressed in this EIR in Sections 2.19 Utilities and Service Systems.

3. USFWS's primary concern is the conservation, protection, and enhancement of fish and wildlife resources and their habitats. The USFWS requests that the EIR address and analyze the riparian communities and impacts associated with grubbing, grading, and concrete lining the channel side slopes and bottom. The requested analysis is addressed in EIR in Section 2.6 Biological Resources.

CVWD hosted a Public Scoping Meeting on December 9, 2015 with the purpose of educating and informing the public/agencies about the proposed Coachella Valley Stormwater Channel Improvement Project Avenue 54-Thermal Drop Structure, addressing public questions and concerns, and collecting input on the CEQA process. A total of 10 people attended the meeting, including two (2) members of the community and eight (8) CVWD staff/consultants. Three (3) verbal questions were recorded during the Scoping Meeting in regard to the project description and purpose of the project, which were answered by CVWD staff and Project consultants. The questions and responses are from the Scoping Meeting are as follows:

Verbal Question 1: Why is the project focused only between Avenue 54 and down to the Thermal Drop Structure?

Response: This is the first phase of improvements. Eventually, when funds are made available the improvements will extend downstream to the Salton Sea.

Verbal Question 2: A 100-Year Storm could cause a flood?

Response: Correct. The purpose of this project is to protect adjacent and downstream lands against the existing potential for 100-year flooding by containing 100-year storm flows within the channel.

Verbal Question 3: The project would protect my home?

Response: Yes, (the person was asked to specify his address) that area of land has a flood risk that the proposed project could remedy.

MITIGATION MONITORING & REPORTING PROGRAM
Coachella Valley Stormwater Channel Improvement Project, Avenue 54 to Thermal Drop Structure
Draft EIR/ SCH No. 2015111067

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Aesthetics	Less Than Significant	AES-1 Screening. To the extent practicable, project construction staging areas (Exhibit 2-1 Construction Staging Areas) shall be located a minimum of 100 feet from any public right-of-way, or screened from public view. Any necessary screening should consist of a perimeter chain-link fence with fabric or other material that provides a view screen. When a staging area's use is ended, the land shall be restored to its original condition.	CVWD, Project Contractor	Concurrent with project construction.
		AES-2: Security Lighting. Any work area, staging or other lighting plans shall be shielded to preclude spillage onto adjoining roadways, residential properties or other sensitive receptors.	CVWD, Project Contractor	Concurrent with project construction.
Agricultural and Forestry Resources	Less Than Significant	AG-1: Irrigation Lateral Relocation. Prior to the selection of the final route for the relocation of irrigation lateral 99.8, the alignment shall be refined in a manner that minimizes impacts to agricultural assets to the greatest extent practicable.	CVWD, IID, Project Engineer	Prior to construction
Air Quality	Less Than Significant	AQ-1: NOx Reduction: Fuels To reduce particulate matter and NOx emissions construction equipment shall utilize aqueous diesel fuels, diesel particulate filters and diesel oxidation catalyst with a minimum 30% reduction rating during all construction activities.	CVWD, Project Contractor	Approved dust control plans prior to site disturbance. Adherence to the confirmed plans during all project plan reviews.
	Less Than Significant	AQ-2: Dust Control Plan: SCAQMD Rule 403.1 SCAQMD Rule 403 (403.1 specific to the Coachella Valley): A dust control Plan shall be prepared and implemented by all contractors during all construction activities, including ground disturbance, grubbing, grading, and materials import and export. Said plan shall include but not be limited to the following best management practices: • Treated and stabilized soil where activity will cease for at least four consecutive days; • All construction grading operations and earth moving operations shall cease when winds exceed 25 miles per hour;	CVWD, Project Contractor	Approved dust control plans prior to site disturbance. Adherence to the confirmed plans during all project plan reviews.

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Air Quality	Less Than Significant	• Water site and equipment morning and evening and during all earth-moving operations; • Operate street-sweepers on paved roads adjacent to site; • Establish and strictly enforce limits of grading for each phase of construction; • Wash off trucks as they leave the project site to control fugitive dust emissions • Cover all transported loads of soils, wet materials prior to transport, provide freeboard (space from the top of the material to the top of the truck) to reduce PM_{10} and deposition of particulate matter during transportation • Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.		
	Less Than Significant	AQ-3: NOx Reduction: Engines To reduce NOx emissions, construction equipment shall be equipped with Tier 4 engines.	CVWD, Project Contractor	Approved dust control plans prior to site disturbance. Adherence to the confirmed plans during all project plan reviews.
Biological Resources	Less Than Significant	BIO-1: Mitigation Related to the CVMSHCP To the extent applicable, CVWD shall comply with all terms and conditions of the CVMSHCP and Implementing Agreement including, but not limited to: Implementation of the "Land Use Adjacency Guidelines" as described in Section 4.5 of the CVMSHCP for any portion of the Proposed Project that impact or are adjacent to the Caltrans "Environmentally Sensitive Habitat Restoration Mitigation" area along the west Highway 86 right of way and the channel.	CVWD, Project Contractor	Prior to construction.

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Biological Resources	Less Than Significant	BIO-2: Mitigation Related to MBTA If ground disturbance, tree or plant removal is proposed between February 1st and August 31st, a qualified biologist shall conduct a nesting bird survey within 7 to 10 days of initiation of grading onsite focusing on MBTA covered species. If active nests are reported, then species-specific measures shall be prepared. At a minimum, grading in the vicinity of a nest shall be postponed till the young birds have fledged. For construction between September 1st and January 31st, no pre-removal nesting bird survey is required. a. In the event active nests are found, exclusionary fencing shall be placed 200 feet around the nest until such time as nestlings have fledged. Nests of raptors and burrowing owls shall be provided a 500-foot buffer. Ground disturbance between September 1 and January 31 shall be exempt from this requirement	CVWD, Project Contractor, Project Biologist	In the event ground disturbance occurs during the referenced time frame, prior to ground disturbance.
	Less Than Significant	BIO-3: Mitigation Related to Burrowing Owl A "take avoidance survey" for the burrowing owl no less than 14 days (in accordance with the Staff Report on Burrowing Owl Mitigation [CDFW 2012]) and no more than 30 days (in accordance with CVWD's Operations and Maintenance Manual) prior to groundbreaking activities are required within and outside of project areas that contain suitable habitat for this species. Additionally, a final survey must be conducted within 24 hours of the initiation of ground disturbance activities in accordance with the CDFW 2012 protocol. a) If no burrowing owls are detected during those surveys, implementation of ground disturbance activities could proceed without further consideration of this species assuming there is no lapse between the surveys and construction as the protocol states "time lapses between Project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance." b) If burrowing owls are detected during the take avoidance surveys, avoidance and minimization measures would then be required and could include the establishment of a buffer zone, the passive or active relocation of the individual(s) or other measures approved by the CDFW.	CVWD, Project Contractor, Project Biologist	In the event ground disturbance occurs during the referenced time frame, prior to ground disturbance.

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Biological Resources	Less Than Significant	BIO-4: Prior to the initiation of any construction within areas determined by the Jurisdictional Delineation to be waters of the US, a permit or permits shall be approved and issued by the USACE under Section 404 of the CWA to authorize the discharge of dredged or fill material into waters of the US.	CVWD, Project Contractor	Prior to construction.
	Less Than Significant	BIO-5: Prior to the initiation of any construction within areas determined by the Jurisdictional Delineation to be waters of the US or the State, a Water Quality Certification shall be approved and issued by the Colorado River RWQCB (Region 7) under Section 401 of the CWA.	CVWD, Project Contractor	Prior to construction.
	Less Than Significant	BIO-6: Prior to the initiation of any construction within areas determined by the Jurisdictional Delineation to be waters of the State, a permit or permits shall be approved and issued by the Colorado River RWQCB (Region 7) under the Porter Cologne Water Quality Control Act.	CVWD, Project Contractor	Prior to construction.
	Less Than Significant	BIO-7: Prior to the initiation of any construction within areas determined by the Jurisdictional Delineation to be waters of the State, a 1602 Streambed Alteration Agreement shall be approved and issued by the California Department of Fish and Wildlife.	CVWD, Project Contractor	Prior to construction.
	Less Than Significant	BIO-8: In order to protect against any inadvertent impact to spadefoot toad, it is recommended that substantial temporary pools and orchards be avoided or surveyed for this species and its eggs and tadpoles prior to disturbance to avoid impacts to breeding spadefoots.	CVWD, Project Contractor	During construction.
	Less Than Significant	BIO-9: Focused surveys shall be conducted to ensure that bats are not present to avoid or minimize harm or disturbance by construction activities. Potential roost sites include but may not be limited to, the Highway 111 and Airport Boulevard bridges, the UPRR bridges, and any other structures in the project area that could provide roosts for bats.	CVWD, Project Contractor, Project Biologist	Prior to bridge disturbance. During all phases of construction.
	Less Than Significant	BIO-10: Rail surveys shall be conducted between March 15th and May 31st, and require a minimum of three visits for California black rail (Conway et al 2002) and two for Yuma Ridgway's (clapper) rail (USFWS 2000). If either species is found to be present, consultation with the wildlife agencies will be required prior to any impacts to habitat.	CVWD, Project Contractor, Project Biologist	Prior to disturbance. During all phases of construction.
	Less Than Significant	BIO-11: Invasive species control shall be implemented During Construction to ensure contracted machinery are not introducing invasive species into the channel . These actions include machinery wash down prior to entry and exit at controlled and monitored locations. Machinery containing mud and potential sources of invasive seed banks will not be permitted. Wash down area waste shall be contained and regularly disposed of at a proper off-site facility.	CVWD, Project Contractor, Project Biologist	Prior to any site disturbance. During all phases of construction.

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Cultural and Tribal Resources	Less Than Significant	CUL-1: Archeological and/or Tribal Resource Procurement and Documentation Should unknown archeological or tribal cultural resource materials become unearthed the area of potential resources shall be cordoned off and protected from further disturbance until a qualified archeologist can investigate the discovery. The qualified archaeologist shall prepare a findings report summarizing the methods and results of the investigation, including an itemized inventory and a detailed analysis of recovered artifacts upon completion of the field and laboratory work. The report shall include an interpretation of the cultural activities represented by the artifacts and a discussion of the significance of all archaeological or tribal finds. The submittal of the report to the CVWD, along with final curation of the recovered artifacts, will signify completion of the monitoring program and, barring unexpected findings of extraordinary significance, the mitigation of potential project impacts on cultural and tribal resources.	CVWD, Project Contractor, Project Archaeologist	Prior to any site disturbance. During all phases of construction.
	Less Than Significant	CUL-2: Human Remains Should buried human remains be discovered during grading or other construction activity, in accordance with State law, the County coroner shall be contacted. If the remains are determined to be of Native American heritage, the Native American Heritage Commission and the appropriate local Native American Tribe shall be contacted to determine the Most Likely Descendant (MLD).	CVWD, Project Contractor, Project Archaeologist	Prior to any site disturbance. During all phases of construction.
	Less Than Significant	CUL-3: Paleontological Resource Procurement and Documentation. In the unlikely event paleontological resources are encountered, potential resources shall be cordoned off and protected from further disturbance until a qualified paleontologist can investigate the find and determine its value and importance the monitor shall, upon discovery of any fossils, quickly salvage them as they are unearthed to avoid construction delays. The paleontologist shall remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor shall have the authority to temporarily halt or divert grading and excavation equipment to allow for removal of abundant or large specimens.	CVWD, Project Contractor, Project Archaeologist	Prior to any site disturbance. During all phases of construction.
Geology and Soils	Less Than Significant	GEO-1: California Building Code Final channel design and engineering shall conform to the prevailing California Building Code (CBC), and Caltrans design standards for bridges where appropriate, in order to mitigate the effects of groundshaking and earthquake damage.	CVWD, Project Engineer	Prior to approval of construction plan set.

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Geology and Soils	Less Than Significant	GEO-2: Structural Foundation Structural foundation designs and subsurface soil improvements shall be conducted as recommended in the Genterra Geotechnical Investigation and based on the California Code of Regulations Volume 18, Title 14, Article 10, Section 3721[a]) to minimize liquefaction hazards. Such measures shall include but are not limited to overexcavation and hydrocompaction, other remedial grading, strengthening and deepening structural foundations.	CVWD, Project Contractor, Project Geologist	Prior to approval of construction plan set.
	Less Than Significant	GEO-3: Ground Improvements Ground improvements consisting of removal and recompaction of loose, near surface sandy soils, is required to minimize dynamic settlement of dry soils. Other methods may include deep dynamic compaction, additives to the soils, such as cement or fiber (e.g., nylon) and flooding of in-place loose granular soils, to increase the density of the resultant compacted fill and thereby removing or reducing to insignificant levels the tendency to settle under dynamic shaking. Deep foundation elements should also be considered, as determined by the project geologist, when effective at bypassing zones of loose sand subject to dynamic settlement.	CVWD, Project Contractor, Project Geologist	During construction.
	Less Than Significant	GEO-4: Dust Control/Soil Erosion Plan All grading plans shall include a soil erosion prevention/dust control plan. Blowing dust and sand during grading operations shall be mitigated by adequate watering of soils prior to and during grading, and limiting the area of dry, exposed and disturbed materials and soils during these activities. To mitigate against the effects of wind erosion after site development, a variety of measure shall be provided including maintaining moist surface soils using chemical soil stabilizers or by other approved means.	CVWD, Project Contractor	Prior to ground disturbance.
	Less Than Significant	GEO-5: Graded Slopes Unprotected, permanent graded slopes shall not be steeper than 3:1 (horizontal/vertical) to reduce wind and water erosion. Fill slopes shall be overfilled and trimmed back to competent material. Fill slope surfaces shall be compacted to 90% of the laboratory maximum dry density by either over-filling and cutting back to expose a compacted core, by approved mechanical methods and as otherwise recommended in the Genterra Geotechnical Investigation.	CVWD, Project Contractor, Project Geologist	Prior to approval of construction plan set.
	Less Than Significant	GEO-6: Grading Site Drainage Positive site drainage shall be established during finish grading. Finish grading shall include a minimum positive gradient of 2% away from adjacent structures for a minimum distance of 3 feet and a minimum gradient of 1% to any street.	CVWD, Project Contractor, Project Geologist	During grading/ construction.

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Geology and Soils	Less Than Significant	GEO-7: Scour Protection Installation of slope protection, cutoff walls, deepening of proposed foundations below the maximum depth of scour and comparable measures shall be applied, as determined by the project geologist, to mitigate potential scour and any resulting slope instability.	CVWD, Project Contractor, Project Geologist	During construction.
	Less Than Significant	GEO-8: Soil Erosion Protection There shall be a cessation of grading activities during rainstorms or high wind events. As necessary, the project contractor shall install flow barriers and soil catchments (such as straw bales, silt fences, and temporary detention basins) during construction to control soil erosion.	CVWD, Project Contractor, Project Geologist	During construction.
	Less Than Significant	GEO-9: Dust Control Measures The project contractor shall ensure that the dust control measures set forth in Sections 2.4 and 2.9 are implemented to control wind-blown sand during construction. Project grading shall be conducted in strict compliance with the requirements of the SCAQMD and the Coachella Valley PM10 SIP.	CVWD, Project Contractor	During construction.
	Less Than Significant	GEO-10: Recompacting Soils Excavated soils may be used as fill material so long as they are free of organic or deleterious matter, including any expansive soils. Rocks or concrete larger than 6 inches in greatest dimension shall be removed from fill or backfill material. Prior to integrating reconditioned fill soil onto needed sites, receiving areas shall be scarified or overexcavated, brought to near optimum moisture conditions, and recompacted to at least 90% relative compaction (ASTM D1557).	CVWD, Project Contractor	During construction.
	Less Than Significant	GEO-11: Imported Soils Imported soils (if needed) shall be non-expansive, granular soils meeting USCS classifications of prescribed in the Genterra Geotechnical Investigation. Imported fill shall be placed in maximum 8-inch lifts (loose) and compacted to at least 90 percent relative compaction (ASTM D 1557) near optimum moisture content.	CVWD, Project Contractor	Prior to ground disturbance.
	Less Than Significant	GEO-12: Excavations Excavations within sandy soil shall be kept moist, but not saturated, to reduce the potential of caving or sloughing. Where excavations over 4 feet deep are planned, lateral bracing or appropriate cut slopes of 1.5:1 (horizontal/vertical) shall be provided. No surcharge loads from stockpiled soils or construction materials shall be allowed within a horizontal distance measured from the top of the excavation slope and equal to the depth of the excavation.	CVWD, Project Contractor, Project Geologist	During construction.

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Geology and Soils	Less Than Significant	GEO-13: Ground Densification Removal and recompaction of susceptible soils, flooding and surcharging, and/or other ground densification techniques shall be implemented to mitigate hydro-collapse potential.	CVWD, Project Contractor, Project Geologist	During construction.
	Less Than Significant	GEO-14: Expansive Soils Standard geotechnical practices such as excavation of the expansive soils and replacement with non-expansive compacted fill (by using additional steel reinforcing in foundations, presoaking, and drainage control devices) shall also be used as determined appropriate by the geotechnical and structural engineers.	CVWD, Project Contractor, Project Geologist	During construction.
Hazards & Hazardous Materials	Less Than Significant	HAZ-1: Equipment management and maintenance will be conducted within project staging areas and appropriate containment shall be provided to preclude spillage onto the ground of fuel or other petroleum products.	Project contractor	During construction
	Less Than Significant	HAZ-2: CVWD shall review and approve a hazardous materials management plan (Soil and Groundwater Management Plan) that specifies the method for handling and disposal of both chemical products and hazardous materials during construction.	Project contractor	During construction
	Less Than Significant	HAZ-3: The contractor shall, prior to construction, prepare and CVWD shall approve a hazardous materials management plan (Soil and Groundwater Management Plan) that specifies the method for handling and disposal of both chemical products and hazardous materials during construction. The plan shall also address any contaminated soils or groundwater encountered during construction. Contract specifications shall mandate full compliance with all applicable local, State, and federal regulations related to identifying, transporting, and disposing of hazardous materials. The contractor shall provide CVWD with copies of hazardous waste manifests documenting that disposal of all hazardous materials has been performed in accordance with applicable law. Elements of the plan shall include: A. Measures to address hazardous materials and other worker health and safety issues during construction, including the specific level of protection required for construction workers. B. Provisions for excavation of soil, stockpiling, dust, and odor control measures. C. Measures to prevent off-site migration of contaminated soil and groundwater. D. Location and final disposition of all soil and groundwater removed from the site. E. All other necessary procedures to ensure that excavated materials are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations.	CVWD, Project contractor	Prior to construction

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Hazards & Hazardous Materials	Less Than Significant	HAZ-4: If the onsite bridges are to be altered during channel construction activities, they shall be assessed for the possible presence of asbestos. This excludes the western railroad bridge, which was constructed between 2006 and 2009. The asbestos survey must be overseen by a California certified asbestos consultant. The results of this survey shall provide a description of any asbestos-containing materials, their locations, estimated quantity, and recommendations for removal, containment, and off-site transportation and disposal.	CVWD, Project Contractor	Prior to bridge work
	Less Than Significant	HYD-1: Project Plan Review Prior to finalizing the hydraulic design and engineering plans for CVSC improvements, said plans shall be reviewed and approved by CVWD to ensure that these improvements do not interfere with or adversely affect channel capacity or the ability of CVWD to manage and maintain these facilities.	CVWD, Project Contractor	Prior to and during construction activities.
Hydrology and Water Quality	Less Than Significant	HYD-2: NPDES Requirements The Proposed Project shall comply with the requirements of the National Pollution Discharge Elimination System (NPDES).	CVWD, Project Contractor	Prior to and during construction activities.
	Less Than Significant	HYD-3: General BMPs The implementation of BMPs during construction activities shall ensure that erosion and siltation from earthmoving and other construction activities is limited. Exposed soil from excavated areas, stockpiles, and other areas where ground cover is removed shall be stabilized by wetting or other approved means to avoid or minimize the inadvertent transport by wind or water. The project is subject to NPDES Construction General Permit requirements. Temporary construction BMPs considered and incorporated into the project, as appropriate, would include: • Soil stabilization (erosion control) techniques such as on-going site watering, soil binders, etc.; • Sediment control methods such as detention basins, silt fences, and dust control; • Temporary de-silting basins will be constructed incrementally along the channel to store and clarify adjoining de-watered areas in the channel, and will be backfilled as side slope lining progresses downstream. • Contractor training programs; • Material transfer practices; • Waste management practices such as providing designated storage areas and containers for specific waste for regular collection • Concrete washout slurry shall be discharged and disposed of in an approved manner	CVWD, Project Contractor	Prior to and during construction activities.

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
		• Channel cleaning/tracking control practices; • Vehicle and equipment cleaning and maintenance practices; and • Fueling practices.		
Hydrology and Water Quality	Less Than Significant	HYD-4: <u>Stormwater Pollution Prevention Plan</u> The Construction Contractor shall implement a CVWD-approved (SWPPP) during construction of the Proposed Project. The SWPPP shall identify specific best management practices (BMPs) that will be implemented during project construction. BMPs implemented as a part of the project will ensure that the project meets the requirements of the California State Water Resources Control Board NPDES Construction General Permit. Construction-related erosion and sediment controls, including any necessary stabilization practices or structural controls, shall be implemented at and in all potentially affected drainages. General structural practices may include, but are not limited to, silt fences, earth dikes, drainage swales, sediment traps, check dams, reinforced soil retaining systems, temporary or permanent sediment basins and flow diversion. Temporary erosion and sediment control measures shall be installed during or immediately after initial disturbance of the soil, maintained throughout construction (on a daily basis), and reinstalled until replaced by permanent erosion control structures or final grading and other site disturbances are complete. In addition, the following specific actions shall be taken to ensure that impacts are less than significant. a) The construction shall be avoided within the limits of identified waterways as depicted on the Jurisdictional Delineation Report prepared for this EIR, except as authorized by federal, state or local permits. b) Protect inlets and outlets of culverts from construction material intrusions using temporary berms to prevent channel incision, erosion, and sedimentation. c) Erosion control measures appropriate for on-the-ground conditions, including percent slope, length of slope, and soil type and erosive factor, shall be implemented. d) Temporary erosion controls such as straw bales and tubes, geotextiles and other appropriate diversion and impounding materials and facilities shall be properly maintained throughout construction (on a daily basis) and reinstalled (such as after backfilling) until replaced with permanent erosion controls or restoration is complete.	CVWD, Project Contractor, Flood Control Agencies (RCFCWCD), Project Contractor	Prior to finalizing engineering plans

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
		e) Where jurisdictional waters are adjacent to or within the construction area, the contractor shall install sediment barriers along the edge of the construction right-of-way to contain spoil and sediment within the construction area and limit discharge into jurisdictional areas or waters. f) Ensure that all employees and contractors are properly informed and trained on how to properly install and maintain erosion control BMPs. Contractors shall require all employees and contractors responsible for supervising the installation and maintenance of BMPs and those responsible for the actual installation and maintenance to receive training in proper installation and maintenance techniques. g) Project scheduling will include efficient staging of the construction that minimizes the extent of disturbed and destabilized work area, and reduces the amount of soil exposed and the duration of its exposure to wind, rain, and vehicle tracking. h) The use of a schedule or flow chart will be incorporated to lay out the construction plan and will allow proposed CVSC improvements to proceed in a manner that keep water quality control measures synchronized with site disturbance, paving and other construction activities. i) The sequencing and time frame for the initiation and completion of tasks, such as site clearing, grading, excavation, concrete lining and other construction, shall be planned in advance to ensure minimization of potential impacts.		

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Hydrology and Water Quality	Less Than Significant	HYD-5: Petroleum BMPs To prevent petroleum products from contaminating soils and water bodies in the channel, the following BMPs shall be implemented: a) Construction equipment and vehicles shall be properly maintained to prevent leakage of petroleum products. b) Vehicle maintenance fluids and petroleum products shall be stored, and/or changed in staging areas established at least 100 feet from delineated streams and other drainages. These products must be discarded at disposal sites in accordance with state and federal laws, rules, and regulations. c) Drip pans and tarps or other containment systems shall be used when changing oil or other vehicle/equipment fluids. d) Areas where discharge material, overburden, fuel, and equipment are stored shall be designed and established at least 100 vegetated (permeable) feet from the edge of delineated streams. e) Any contaminated soils or materials shall be disposed of off-site in proper receptacles at an approved disposal facility. f) All erosion control measures shall be inspected and repaired after each rainfall event that results in overland runoff. The project contractor shall be prepared year round to deploy and maintain erosion control BMPs associated with the project. g) Existing culverts shall be carefully maintained in place in order to ensure that they function properly. Considerations include: maintenance of inlet and outlet elevations, grade, adequate compacted material cover, and inlet/outlet protection.	CVWD, Project Contractor	Prior to finalizing engineering plans
Land Use	Less Than Significant	LU-1: Construction Staging Construction activities shall be staged at least 100 yards from residential land uses. Construction activities that have the potential to affect safety, privacy, structures or landscaping, are to be minimized to the greatest degree practicable through standard Best Management Practices.	CVWD, Project Contractor	Prior to finalizing project plans.
Noise	Less Than Significant	N-1: Construction Hours Project construction activities shall only occur between the permitted hours of each local jurisdiction's Municipal Code. The project construction supervisor shall ensure compliance.	CVWD, Project Contractor	All phases of project construction.

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Noise	Less Than Significant	N-2: Equipment Noise Reducing Measures During all project site construction, all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction supervisor shall place all stationary construction equipment so that emitted noise is directed away from the noise-sensitive receivers nearest the construction zone.	CVWD, Project Contractor	All phases of project construction.
	Less Than Significant	N-3: Equipment Staging The construction supervisor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receivers nearest the project site (i.e., at the planned staging areas or farther from nearby sensitive receiver locations if possible) during all project construction.	CVWD, Project Contractor	Prior to issuance of any grading or building permits or authorizations to proceed.
	Significant and Unavoidable	N-4: Sensitive Land Uses The use of large bulldozers and compacting equipment within 100 feet of nearby sensitive land uses (residences) shall be minimized and avoided where possible.	CVWD, Project Contractor	All phases of project construction.
	Less Than Significant	N-5: Truck Deliveries The construction supervisor shall limit haul truck deliveries to the same hours specified for construction equipment by each local jurisdiction's Municipal Code.	CVWD, Project Contractor	All phases of project construction.
	Less Than Significant	N-6: IID Notification At least seven days prior to the initiation of power pole foundation drilling on the west and east sides of the channel at Airport Boulevard, IID shall notify nearby residents, including all of those within the adjoining mobile home park on the west bank, of the drilling and related construction activity.	IID	Prior to construction
Traffic and Circulation	Less Than Significant	TRA-1: Standard Requirements – Construction Management and Traffic Control Plan The Construction Contractor shall provide written assurance to CVWD that traffic-related construction activities shall be conducted in compliance with all applicable federal, state, county and local statutory and regulatory requirements for public safety. In order to minimize or avoid accessibility issues for adjacent properties, the Construction Contractor shall implement construction management strategies and traffic control and operations plans that maximize the efficiency of construction and minimize the disruption of traffic flow on adjoining streets. Traffic control plans shall be approved by CVWD and shall include requirements that on public streets at least one travel lane remain open in each direction; that signage be installed for road work and/or detours, as necessary; and that emergency vehicle access is not affected.	CVWD, Project Contractor	Prior to finalizing engineering plans.

Resource Topic	Level of Impact After Mitigation	Mitigation Measures	Responsible Party/ Monitoring Party	Implementation Timing
Traffic and Circulation	Less Than Significant	TRA-2: Plan, Permits, and Approvals All necessary plans, permits or approvals, including but not limited to traffic control plans, encroachment or other permits from Caltrans, Union Pacific Railroad, Imperial Irrigation District and others, shall be prepared by the Construction Contractor for and approved by CVWD prior to the initiation of site disturbance such as grading, excavation, hauling, paving and other construction activities where public streets may be affected. Prior to the initiation of site development, CVWD shall confer with the appropriate Coachella Public Works Department, County Transportation Department, Caltrans and the Union Pacific Railroad to ensure that construction activities and traffic control are carried out in a manner that causes minimal disruption to traffic on adjoining facilities.	CVWD, Project Contractor	Prior to the initiation of site disturbance.
	Less Than Significant	TRA-3: Maintenance of Existing Roads The Construction Manager shall be required to identify and promptly repair any project-related damage to existing public roads. Upon completion of the construction activities such repairs shall be made permanent. The contractor shall monitor the condition of these routes throughout the construction process and, in the event of an accidental load spill, to arrange for the immediate cleanup of any spilled material with street sweeping or other procedures, as needed	CVWD, Project Contractor	All phases of construction.
	Less Than Significant	TRA-4: Construction Access and Staging The final location and design of channel construction staging and access shall comply with any applicable City and/or County access and design standards, and be reviewed by the Project Engineer. CVWD shall submit traffic control plans to the City and County prior to the issuance of grading and/or construction permits.	CVWD, Project Contractor	Prior to issuance of grading and/or construction permits.
	Less Than Significant	TRA-5: Construction Staging Lighting Properly designed and maintained staging and access area lighting shall be provided along the channel as identified in the final plans, to facilitate the safe movement of vehicular, pedestrian and bicycle traffic through the project area, and to ensure good visibility under both daylight and nighttime conditions.	CVWD, Project Contractor	All phases of construction.

Coachella Valley Stormwater Channel Improvement Project Avenue 54 to Thermal Drop Structure DRAFT ENVIRONMENTAL IMPACT REPORT

1.0 INTRODUCTION AND PROJECT DESCRIPTION

Lead Agency

The Coachella Valley Water District (CVWD) is the Lead Agency responsible for the preparation of this Draft Environmental Impact Report (EIR) pursuant to the California Public Resources Code Sections 21000-21189.57, and the 2017 California Environmental Quality Act (CEQA) Guidelines Sections 15000-15387.

CEQA defines "Lead Agency" as the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment (State CEQA Guidelines Section 15367). The proposed action evaluated in this EIR constitutes a "project", as defined by Section 15378 of the State CEQA Guidelines.

The Lead Agency contact person and mailing address regarding this project is: William Patterson, Environmental Supervisor, Coachella Valley Water District, 75515 Hovley Lane East, Palm Desert, California 92211. The CVWD phone number is: (760) 398-2651; Email: WPatterson@cvwd.org.

Introduction

CVWD has prepared this EIR to evaluate the potential environmental impacts associated with implementation of the Coachella Valley Stormwater Channel (CVSC) Improvement Project–Avenue 54 to Thermal Drop Structure (Project). The Project, which involves improvements to existing channel facilities, is required to: 1) restore channel flow conditions (cfs) for the 100-year flood, and 2) remove the existing threat of flooding during a 100-year storm event to the parcels within the area of benefit.[1]

The project study area is a portion of the engineered extension of the Whitewater River Stormwater Channel (WWRSC). The WWRSC/CVSC functions as a conveyance channel for regional stormwater runoff, agricultural irrigation return water, and treated wastewater.

The CVSC extends approximately 25 miles from the Washington Street bridge in La Quinta, California to the Salton Sea. The channel was built in the 1970s to convey a Standard Project Flood (SPF), or a flow of approximately 82,000 cubic feet per second (cfs) which is greater than the 100-year flood peak flow of 39,000 cfs. The 100-Year Flood is the design standard for the Project per CVWD Ordinance 1234.2.

[1] This refers to the adjacent areas that are mapped within special flood hazard areas with an effective date of March 6, 2018.

The *Coachella Valley Stormwater Channel Hydraulic Analysis: Existing Conditions Hydraulic Study* (NHC 2012) determined that portions of the existing channel have insufficient capacity for conveying the 100-year flood or the SPF. Existing, planned and permissible development in this part of the Coachella Valley is therefore subject to a flooding threat in the event of a 100-year flood in the subject reach of the CVSC. The Proposed Project is designed to convey the 100-year flood flow through the subject channel reach and provide a 100-year flood protection to adjacent and downstream lands.

Background and Project Summary

The Project is focused on the CVSC including the existing unlined trapezoidal channel, banks, and levees, and small sections of riprap slope protection at the Highway 111 and railroad bridges. Existing bridges that cross the subject channel reach include Airport Boulevard (Avenue 56), State Highway 111, and two Union Pacific Railroad (UPRR) rail lines. Project bridges are pinch points along the subject channel reach, restricting the wide and limiting the channel right-of-way at these locations. See Exhibits 1-4, which show the project's location and the referenced channel bridge crossings (also see Section 1.1 Project Location and Limits). As discussed in Section 1.10 below, these bridges and their abutments narrow the channel at these locations and are significant constraints affecting the design of the subject channel improvements.

The channel top width ranges from 430± to 530± feet wide upstream of Airport Boulevard, between 300± to 350± feet between Airport Boulevard and the Highway 111 bridge, and 450± to 550± feet downstream of the Highway 111 bridge. The depth of the channel below the top levee (or top of bank in reaches where levees are not present) ranges from about 18 feet to 35 feet. A natural gas line, electric transmission lines, and an irrigation water line occur within the Project area and will need to be relocated as a part of this Project.

In August 2014, CVWD prepared the CVSC Master Plan Alternative Study, part of the Stormwater Master Plan for the Eastern Coachella Valley Stormwater Channel. The purpose of the Master Plan study was to evaluate conceptual channel improvements that would convey the 100-Year Flood and the Standard Project Flood (SPF) with adequate freeboard. The Master Plan study area included the CVSC from Avenue 52 downstream to the Salton Sea. Six (6) alternatives were considered to improve flood conveyance and reduce hazards on the adjacent properties for the feasibility analysis within the Master Plan Alternative Study. This Project is the first phase of the improvement program analyzed in the CVSC Master Plan Alternatives Study.[2]

The project alternatives described below have been developed for analysis in the CEQA and National Environmental Policy Act (NEPA) environmental documents (see Section 1.5 and 1.6 for CEQA and NEPA Requirements). The range of alternatives presents construction scenarios that show varying impacts on jurisdictional waters in the CVSC. The bases for these alternatives are the design objectives of the overall channel improvement necessary to protect life and property from the 100-Year flood event.

Primary engineering elements considered include channel geometry, bridge modifications, widening portions of the existing channel, channel lining, vegetation and roughness, and lowering of the existing channel invert. These elements not only affect channel design, but also have a direct bearing on flood conveyance capacity and associated environmental impacts. As noted above, the project bridges constrict flows and limit options for increasing channel capacity at these locations.

This project includes a description and assessment for the relocation of existing utility facilities and infrastructure, including an irrigation lateral, natural gas line, and power distribution/transmission poles. Surrounding land and development are also important considerations discussed within this EIR. Section 1.10 describes each Proposed Project alternative.

[2] Tetra Tech. 2014 Coachella Valley Water District, Riverside County, California, Eastern Coachella Valley Stormwater Master Drainage Plan.

1.1 Project Location and Limits

The Project extends from approximately 130 feet north of Avenue 54 to approximately 300 feet south of the Thermal Drop Structure, which is located between Avenues 57 and 58. The Project occurs within the City of Coachella corporate limits and in the unincorporated community of Thermal, Riverside County, California. The Project area is generally bounded by Avenue 54 on the north, Avenue 58 on the south, State Highway 86 on the east, and the community of Thermal and City of Coachella on the west. The project occurs in portions of Section 15, 22 and 27 of Township 6 South, Range 8 East, as shown on the United States Geological Survey (USGS) 7.5-minute Indio and Mecca, California quadrangles. Also, please see Exhibits 1-1: Regional Location Map, 1-2: Area Location Map, 1-3: Project Vicinity and 1-4: Project Planning Area.

Assessor's Parcels involved in the project include the following:
757-070-008; -015; -020; -022; -031; -035; -037; -044; -047; - 049;
757-080-011; -016; -018; -019;
757-090-009; -012; -013; -014; -015; -016;
763-320-022;
763-330-006; -013; -017; -018;
763-340-009;
763-350-013

No additional channel right-of-way will be acquired for the Project; however, temporary construction easements and a limited amount of additional right-of-way on the east side of the channel will be required for relocation of the irrigation lateral that currently crosses the channel located at Avenue 57 (see Exhibit 1-6A).

1.2 Purpose and Need

The purpose of the Proposed Project is to design and construct channel improvements to restore conveyance capacity in the Project reach to the 100-Year flow, meet current CVWD design standards for regional stormwater management facilities, and to protect lands within the area of benefit from the existing threat of flooding during a 100-year storm event.

The CVSC reach (area) that is analyzed in this EIR extends from just north of Avenue 54 to southerly of the Thermal Drop Structure. The existing CVSC does not meet FEMA's 100-Year design standard or CVWD's design standard per Ordinance 1234.2, which is a conveyance capacity to 39,000 cfs. CVWD standards also require an additional foot of freeboard. During major storm events, floodwaters, silt and other debris could impact a wide area of prime agricultural land, as well as developing communities. Documented flooding in the Project area dates back to 1927 and 1939 events that inundated Thermal and resulted in property damage and left major roads and highways impassable. The majority of the surrounding development is agricultural but will transition into urban uses as development increases. Increased population density and property values will require the development of infrastructure improvements to adequately protect lives and property.

1.3 Statement of Project Objectives

CEQA Guidelines Section 15126.6 states that an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly attain most of the project's basic objectives, but that would avoid or substantially lessen any identified significant adverse environmental effects of the project. The EIR should also evaluate the comparative merits of the project. Specifically, Section 15126.6 sets forth criteria for selecting and evaluating alternatives. A Draft EIR supports a determination of No Significant Impacts from implementation of the Preferred Alternative with the implementation of mitigation measures set forth in this EIR.

Pursuant to CEQA Guidelines Section 15124(b), the project description includes a statement of objectives. The purpose of the objectives is to assist the District in developing a reasonable range of alternatives to evaluate in this EIR. These objectives are intended to explain the purpose of the project, and to aid the decision-makers in preparing findings or a statement of overriding considerations, if necessary.

The project objectives identify the purpose of the Project. CVWD has identified the following list of criteria as the objectives for the Project.

- Provide protection to life and property during the 100-year flood events.
- Restore channel capacity to safely convey the 100-year flood flows within the project area.
- Provide stormwater capture opportunities and perpetuate the natural drainage pattern of the area to the maximum extent practicable.
- Provide the most economical combination of facilities considering environmental constraints, right-of-way acquisition, construction, and maintenance costs.
- Allow CVWD to continue to meet government regulatory standards for stormwater protection.
- Improve the subject reach of the CVSC to meet current CVWD criteria for stormwater management facilities.
- Reduce flood hazards and revise FEMA Flood Insurance Rate Maps to reflect the benefit of the project to the adjacent property owners and/or community.





RIVERSIDE COUNTY

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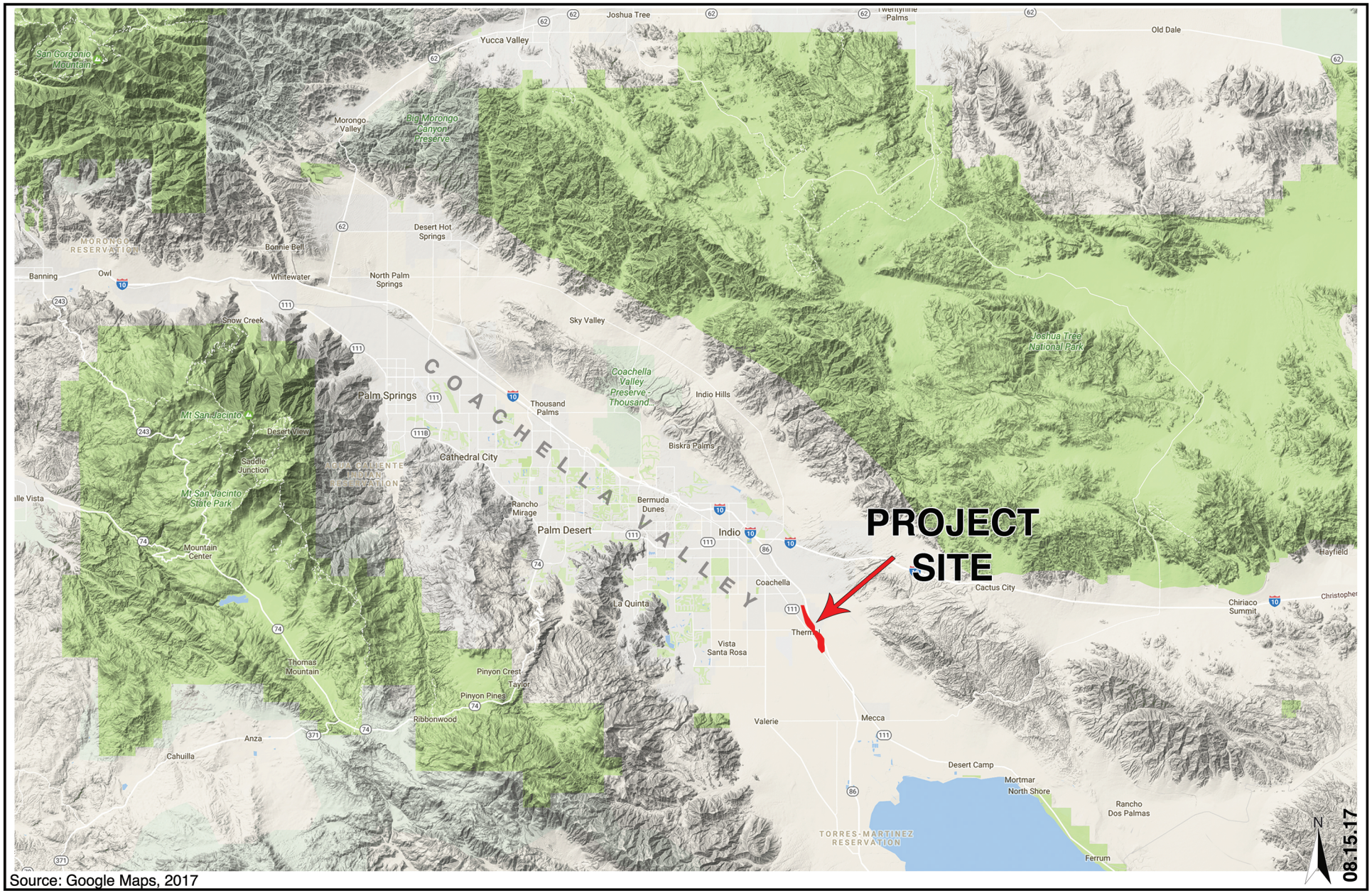
Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Regional Location Map
Coachella Valley Water District

WATER DISTRICT

Exhibit

1-1



Source: Google Maps, 2017

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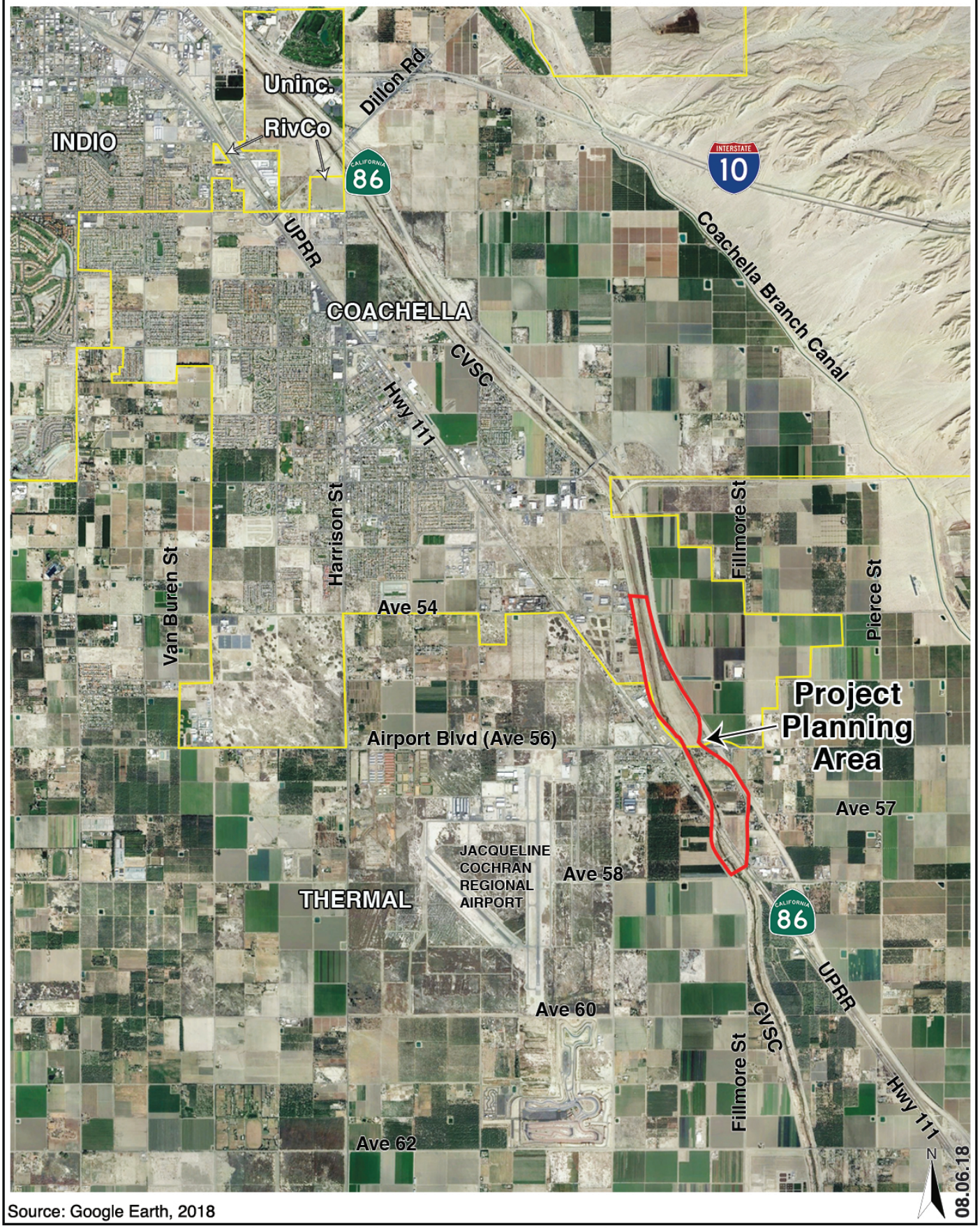
Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Area Location Map
Coachella Valley Water District

Exhibit
1-2



Source: Google Earth, 2018

Coachella Valley Stormwater Channel Improvement
Avenue 54 to Thermal Drop Structure
Project Vicinity Aerial
Coachella Valley Water District

TERRA NOVA®
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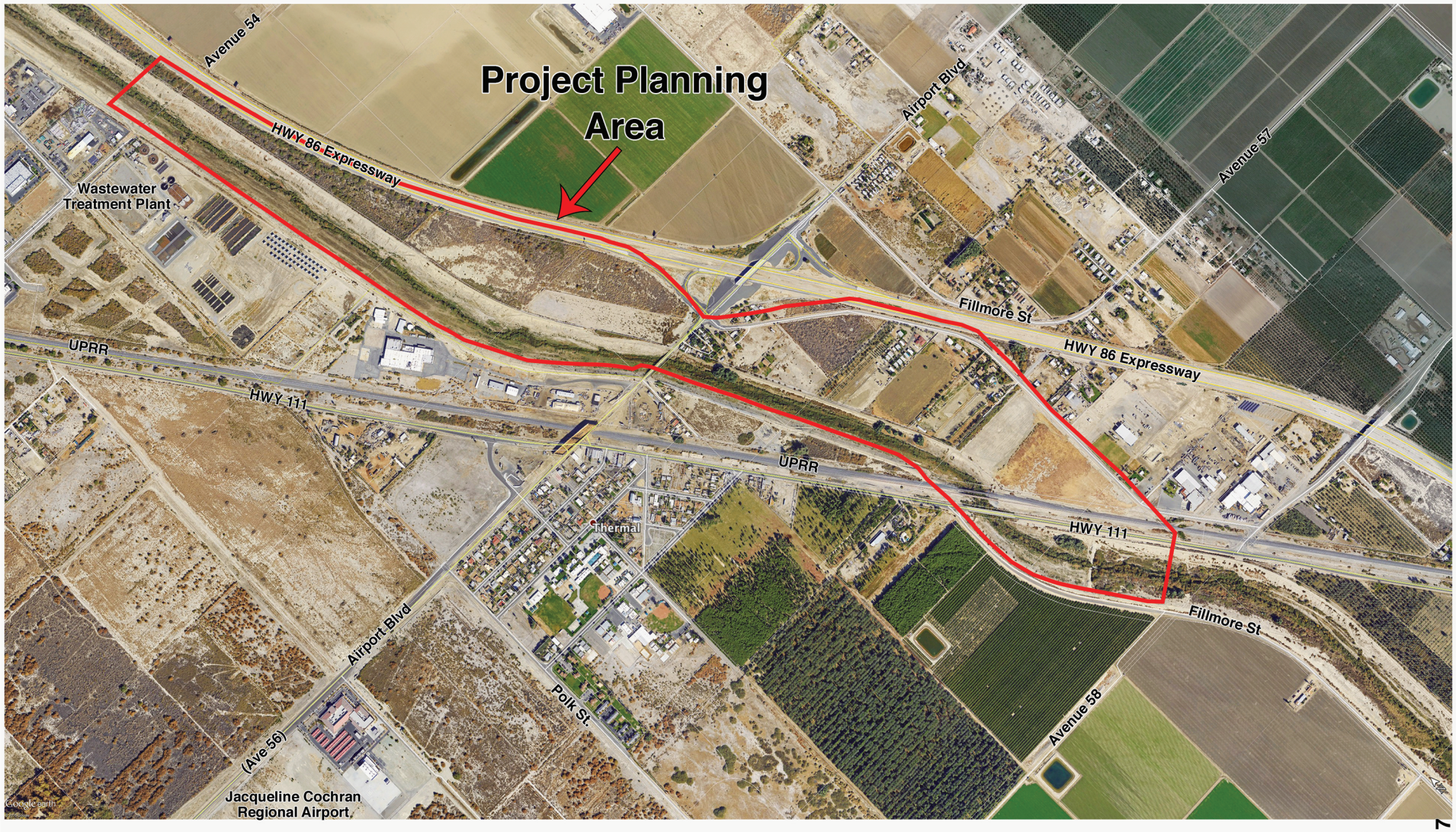
WATER DISTRICT

Exhibit
1-3



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08.16.17

Source: Google Earth, 2015

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Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Project Planning Area
Coachella Valley Water District

WATER DISTRICT

Exhibit

1-4

1.4 CEQA Process

California Environmental Quality Act

In accordance with Sections 15063, 15064 and 15065 of the State CEQA Guidelines, CVWD prepared an Initial Study (2015) to identify potentially significant impacts associated with the proposed CVSC Improvement Project. Based on the preliminary assessment, CVWD determined that an EIR should be prepared to evaluate the potential environmental effects associated with the implementation of the Project. (Refer to Appendix A).

The EIR has been prepared in accordance with CEQA (as amended), pursuant to State CEQA Guidelines §15121 (Informational Document):

- *An EIR is an informational document which will inform public agency decision makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency.*
- *While the information in the EIR does not control the agency's ultimate discretion on the project, the agency must respond to each significant effect identified in the EIR by making findings under Section 15091 and if necessary by making a statement of overriding consideration under Section 15093.*
- *The information in an EIR may constitute substantial evidence in the record to support the agency's action on the project if its decision is later challenged in court.*

Under State CEQA Guidelines §15123, this section presents a summary of the Proposed Project and project alternatives evaluated in this Draft EIR, including those that would avoid potentially significant effects; issues of concern/areas of controversy known to the Lead Agency; and issues to be resolved, including the choice among alternatives and how best to mitigate the potentially significant effects.

The reader should review, but not rely exclusively on the Executive Summary as the sole basis for judgment of the Proposed Project and alternatives. The complete DEIR should be consulted for specific information about the potential environmental effects and mitigation measures to address those effects.

1.4.1 Notice of Preparation and Public Scoping Meeting

The process of determining the appropriate scope, focus, and content of an EIR is known as "scoping" (Public Resources Code 21083.9 and CEQA Guidelines Section 15082). The first step in the scoping process is conducting a preliminary assessment of the project and the issuance of a Notice of Preparation (NOP) of an Environmental Impact Report to solicit input from agencies and other parties of interest, including the general public.

CVWD held a Public Scoping Meeting from 6:00 p.m. to 8:00 p.m. on December 9, 2015 in its Coachella Office, 51501 Tyler Street, in the City of Coachella, California. This meeting was held specifically to comply with CEQA requirements to conduct a public scoping meeting after release of a NOP to prepare an EIR. The NOP was released on November 22, 2015, and the 30-day public review period concluded on December 23, 2015. The public meeting also served the purpose of educating and informing the public about the proposed Coachella Valley Stormwater Channel Improvement Project, addressing public questions and concerns, and collecting input on the CEQA process. The first part of the scoping meeting

was an open house, come-and-go format where the public was able to review project exhibits and discuss the environmental review process with project team members. The meeting concluded with a 25-minute Power Point presentation and then opened up to a Q&A session at the end. The meeting was also videotaped by CVWD. Public input was verbal, and positive support for the project was expressed. No specific areas of concern were identified through the NOP review or public scoping process.

The NOP (see Appendix A) was submitted to the Riverside County Clerk for 30-day posting. The NOP was also submitted to the State of California Governor's Office of Planning and Research, State Clearinghouse (SCH), which circulated the NOP to state agencies for a 30-day review and comment period. A public notice was also published in a newspaper of local circulation, and notices were also mailed directly to surrounding property owners in English and Spanish. Three (3) comment letters were received from the South Coast Air Quality Management District (SCAQMD), Imperial Irrigation District (IID), and the U.S. Fish and Wildlife Service (USFWS) (see Appendix A). In general, comments were limited to requesting that further detail be provided in the subsequent EIR, and immediate responses were not required. The three agencies/districts who provided comments will receive proper notification and Draft EIR materials during the public comment period process.

1.4.2 Draft EIR

This Draft EIR is being circulated along with the Notice of Availability and Notice of Completion for public review for a 45-day review period, in accordance with State CEQA Guidelines Section 15085.

1.4.3 Final EIR

Following the public review and comment period, CVWD will prepare written responses to the written comments received on the Draft EIR. Where necessary, the Draft EIR may be revised, as appropriate, and together with the Response to Comments, will constitute the Final EIR. In accordance with State CEQA Guidelines Sections15090-15097, CVWD's Board of Directors will then consider certifying the Final EIR during a noticed public hearing.

Following Final EIR certification, CVWD may proceed with consideration of project approval actions, such as selection of the final design, issuance of construction bid documents, acquisition of easements and encroachment permits, and other project actions. CEQA also requires the adoption of findings prior to approval of a project where a certified Final EIR identifies significant unmitigated environmental effects that would be caused by implementation of a project.

If the project that is approved would result in the occurrence of significant unmitigated effects that are identified in the Final EIR and that cannot be avoided or substantially lessened, CVWD shall so state in writing in a "statement of overriding considerations" the specific reasons to support its action based on the Final EIR and/or other information in the record. If the project is approved, CVWD would file a Notice of Determination (NOD) with the County Clerk and State Clearinghouse within five working days following project approval.

1.4.4 Mitigation Monitoring and Reporting

CEQA requires lead agencies to adopt a Mitigation Monitoring and Reporting Program (MMRP) at the same time the Final EIR is certified. The MMRP is a verification tool for use by the Lead Agency that lists the mitigation program task, entity responsible for implementation, timing of compliance, and record of date of compliance. Once the Final EIR and MMRP are certified, the mitigation measures become conditions of the project.

1.4.5 Organization of the Draft EIR

The organization of the Draft EIR is as follows:

Environmental Matrix - Summary of Project Impacts and Mitigation

Section 1 – Introduction and Project Description. The section includes a description of the Proposed Project and Project Alternatives, and summarizes construction and operational characteristics of the proposed channel improvements. Alternatives that would reduce or avoid the significant impacts are summarized. Areas of controversy are also identified. This section describes the CEQA process and the organization of this document.

Section 2 – Environmental Setting, Impacts and Mitigation Measures. The environmental setting discussion provides important background data and information on all CEQA analysis categories on a regional and area-wide basis. This section of the EIR serves to establish the physical context within which the project is being considered and analyzed. It also presents the physical and regulatory setting by environmental resource category, identifies impact significance criteria, and analyzes potential impacts of the project, including potential cumulative impacts. Mitigation measures and monitoring and reporting programs are identified, where applicable. Section 2 analyzes the following resource areas:

- Introduction (Section 2.1)
- Summary of Environmental Impact Analysis (Section 2.2)
- Aesthetics (Section 2.3)
- Agriculture and Forest Resources (Section 2.4)
- Air Quality (Section 2.5)
- Biological Resources (Section 2.6)
- Cultural and Tribal Cultural Resources (Section 2.7)
- Geology and Soils (Section 2.8)
- Greenhouse Gas Emissions (Section 2.9)
- Hazards and Hazardous Materials (Section 2.10)
- Hydrology and Water Quality (Section 2.11)
- Land Use and Planning (Section 2.12)
- Mineral and Energy Resources (Section 2.13)
- Noise (Section 2.14)
- Population, Housing and Socio-Economic Resources (Section 2.15)
- Public Services (Section 2.16)
- Recreational Resources (Section 2.17)
- Transportation and Traffic (Section 2.18)
- Utilities and Service Systems (Section 2.19)

Section 3 – Project Alternatives Analysis. This section describes alternatives to the Proposed Project and compares their impacts to those of the project. This section also identifies which alternative is environmentally superior on a categorical basis and overall.

Section 4 – Unavoidable Significant Impacts. This section discusses significant environmental effects that cannot be avoided if the project is implemented, and significant irreversible environmental changes associated with the project. This section also provides a summary of cumulative impacts that are discussed in the resource sections.

Section 5 – Irreversible and Irretrievable Commitment of Resources. This section evaluates the project's effects on natural resources, including energy and water, and the level of commitment of these resources associated with the project.

Section 6 – Growth Inducing Impacts. This section discusses the project's potential to induce growth both locally and regionally.

Section 7 – Organizations, Persons and Documents Consulted. This section describes and lists the various parties, agencies, documents and other resources used in preparing the subject EIR.

Technical Appendices - provide information in support of the above sections and are identified in the Table of Contents.

1.5 NEPA Process

National Environmental Policy Act

Requirements for environmental review and analysis on the Federal level are established by NEPA of 1969, which is administered by the Council of Environmental Quality (CEQ). The implementation of the Federal environmental review process is further set forth in the CEQ regulations (40 CFR 1500-1508).

Due to the Project's Federal permit nexus (see Section 1.7 Permits, Approvals, Easements), a separate environmental assessment/decision document (Memorandum of Record) was prepared to evaluate the Project's potential environmental impacts in accordance with NEPA. Specifically, the Project is required to apply for a Section 404 Clean Water Act (CWA) Permit through the United States Army Corps of Engineers (USACE).

In July 2019, the USACE issued a *Provisional Initial Proffered Standard Individual Permit* for this Project.

The USACE regulates the discharge of dredged or fill material into waters of the United States (WOTUS) pursuant to Section 404 of the CWA. CWA regulations (33 CFR 328.3(a)) define WOTUS as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. The territorial seas;
4. All impoundments of waters otherwise defined as WOTUS under the definition;
5. Tributaries of waters described in 1-3;
6. All waters adjacent to waters identified above (1-5), including wetlands, ponds, lakes, oxbows, impoundments and similar waters;
7. All waters in i-v, below, where they are determined, on a case-specific basis, to have a significant nexus to a water identified in 1-3, above. The waters identified below are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in 1-3. Waters identified in this paragraph shall not be combined with waters identified in item 6, above, when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under item 6, they are an adjacent water and no case-specific significant nexus analysis is required.
    i. Prairie potholes. Prairie potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest.
    ii. Carolina bays and Delmarva bays. Carolina bays and Delmarva bays are ponded, depressional wetlands that occur along the Atlantic coastal plain.

iii. Pocosins. Pocosins are evergreen shrub and tree dominated wetlands found predominantly along the Central Atlantic coastal plain.
iv. Western vernal pools. Western vernal pools are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers.
v. Texas coastal prairie wetlands. Texas coastal prairie wetlands are freshwater wetlands that occur as a mosaic of depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.

8. All waters located within the 100-year floodplain of a water identified in 1-3 above, and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in 1-5 where they are determined on a case-specific basis to have a significant nexus to a water identified in 1-3. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in 1-3 or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph shall not be combined with waters identified in item 6 above when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under item 6, they are an adjacent water and no case-specific significant nexus analysis is required.

The USACE delineates non-wetland waters in the Arid West Region by identifying the ordinary high water mark (OHWM) in ephemeral and intermittent channels (USACE, 2008a). The OHWM is defined in 33 CFR 328.3(e):

> "…that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

Identification of OHWM involves assessments of stream geomorphology and vegetation response to the dominant stream discharge. Determining whether any non-wetland water is a jurisdictional WUS involves further assessment in accordance with the regulations, case law, and clarifying guidance are further discussed in Section 2.6 Biological Resources of this EIR.

1.6 Responsible and Cooperating Agencies

Under both CEQA and NEPA, provision is made for state and federal agencies to act as "Responsible" or "Cooperating" Agencies, respectively. Per California Public Resources Code Section 21069, a "Responsible Agency" is a public agency, other than the Lead Agency, which has responsibility for carrying out or approving a project. The authority of responsible agencies that may have responsibility for carrying out or approving a project and for complying with CEQA is limited to that part of the project that they will be called upon to carry out or approve (Public Resources Code Sections 21140(c), 21153(c); CEQA Guidelines Sections 15041(b), 15042).

NEPA (40 CFR § 1508.5) provides for a "Cooperating Agency". Cooperating Agencies are any agencies other than the Lead Agency, which has jurisdiction by law or special expertise and responsibilities for managing resources potentially affected by the proposed action.

Among others, the California Department of Fish and Wildlife and the California Regional Water Quality Control Board (Colorado River Basin) are CEQA Responsible Agencies and will issue permits and approvals for project modifications within the stormwater channel. The California Department of Transportation (Caltrans), the County of Riverside, the Southern California Gas Company (SCG), and Imperial Irrigation District (IID) may also serve as Responsible Agencies under CEQA and may rely on the subject EIR for issuance of encroachment permits or other permitting or regulatory actions.

1.7 Project's Relationship to Other Plans

CVWD's Eastern Coachella Valley Stormwater Master Plan (Master Plan), identifies conceptual locations, alignments, and sizes for primary stormwater facilities within a 167 square mile Study Area (107,471.4 acres). The Master Plan is a long-term planning guide for locating and sizing regional stormwater and drainage facilities. The Master Plan has been designed to be inherently flexible to allow CVWD to respond to changes in physical, environmental, regulatory, and economic conditions.

Other Regional Plans

The CVSC improvement project is related to or must accommodate other plans developed in the Coachella Valley. These include the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), the South Coast Air Quality Management District (AQMD) Air Quality Management Plan, and the Coachella Valley PM10 State Implementation Plan.

Local Plans

Local plans also taken into consideration include the Riverside County General Plan, including the Eastern Coachella Valley Area Plan, as well as the City of Coachella General Plan.

1.8 Permits, Approvals, Easements

CVWD serves as the project proponent and the CEQA Lead Agency. CVWD is empowered with planning and implementing flood control plans and management strategies under its authority as the regional flood control agency. Nonetheless, CVWD will need to secure permits, easements, and other clearances from other agencies in order to implement the project, including those listed on Table 1-1 below.

Table 1-1
Required Permits, Approvals, and Easements

Agency	Permit/Action Required
U.S. Army Corps of Engineers	CWA Section 404 Individual Permit
California Regional Water Quality Control Board	CWA Section 401 Water Quality Certification
California Department of Fish and Wildlife	CFG Code Section 1602 Lake and Streambed Alteration Agreement
California Department of Transportation	Project coordination / improvements / encroachment permits, as necessary
City of Coachella, County of Riverside	Encroachment permits, as necessary
Union Pacific Railroad	Encroachment permit
Imperial Irrigation District	Relocation of existing infrastructure / project coordination / improvements as necessary
The Gas Company	Relocation of existing infrastructure / project coordination / improvements as necessary

1.9 Project Alternatives

Introduction

Section 3: Project Alternatives Analysis, of this DEIR presents the alternatives analysis for the Proposed Project. CEQA Guidelines Section 15126.6 requires that an EIR describe and evaluate the comparative merits of a range of alternatives to the project that could feasibly attain most of the objectives of the project, but would avoid or substantially lessen any significant adverse effects of the project. An EIR is not required to consider every conceivable alternative to a project; rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. The CEQA Guidelines further state that the specific alternative of "no project" shall also be evaluated. The alternatives evaluated in this DEIR were identified based on input from CVWD's engineering, environmental, and facilities maintenance staff, and identification of the project's significant environmental impact. The alternatives were selected in consideration of one or more of the following factors:

- Extent to which the alternative would accomplish most of the basic objectives of the project;
- Extent to which the alternative would avoid or lessen any of the identified significant adverse environmental effects of the project;
- Feasibility of the alternative, taking into account site/geographic suitability, economic viability, constructability, and consistency with regulatory requirements; and
- Appropriateness of the alternative in contributing to a reasonable range of alternatives necessary to permit a reasoned choice by decision-makers.

Throughout the descriptions of project alternatives, reference is made to two different levels of vegetation maintenance in the channel. Vegetation in the channel creates an obstruction to flow that varies depending upon the extent of growth and density of the vegetation.

CVWD currently maintains the channel utilizing regular above-ground controlling of vegetation. The area maintained excludes the pilot channel and the channel beneath the bridges. In Winter 2016, CVWD conducted a pilot vegetation management program, which included above-ground trimming vegetation in the pilot channel and under the bridges. The pilot program included Project channel from about 500 feet upstream of UPRR bridge to the downstream limit of the Project. CVWD intends to continue regular mowing outside the pilot channel (including under the bridges), and conduct pilot-channel-trimming activity as needed.

Two levels of channel vegetation maintenance were used in the alternatives analyses:

1. Maintained – vegetation density similar to conditions after the Winter 2016 CVWD pilot brush mowing/trimming program; and
2. Unmaintained - vegetation density similar to conditions before the Winter 2016 CVWD pilot brush mowing/trimming program.

The alternatives analyzed in the EIR include areas of channel bottom at each of the two levels of vegetation maintenance. Exceptions include the "Fully-Lined Channel" alternative, in which all vegetation is permanently removed, and the "Slope Protection without Vegetation Maintenance" alternative, in which all areas of soft-bottom channel are kept in the "Unmaintained" condition. In consideration of the above factors, the following alternatives were selected for analysis in this DEIR:

A. Slope Protection with Maintained Bottom Vegetation;
B. Fully-Lined Channel;
C. Slope Lining and Channel Widening; and
D. No Project

Alternative A – Proposed Project - Slope Protection with Maintained Bottom Vegetation

Alternative A proposes to improve the subject CVSC with reinforced concrete-lined side slope protection extending from 130± feet upstream of Avenue 54 to 300± feet downstream of the Thermal Drop Structure. In addition, the invert elevation of the channel will be lowered to increase channel conveyance capacity. See Exhibits 1-5A and 1-5B.

This alternative assumes a maintained soft-bottom channel, which requires vegetation to be periodically trimmed from portions of the channel to maintain capacity. Scour protection and conveyance capacity require channel bottom lining under the Airport Boulevard bridge approximately 250 feet upstream and approximately 200 feet downstream of this bridge. Channel lining is also planned from approximately 600 feet upstream of the northernmost UPRR bridge to approximately 500 feet downstream of the Highway 111 bridge. This alternative can pass the 100-Year flow and provide four feet of freeboard to meet the minimum requirement per the Federal Emergency Management Agency (FEMA) and/or CVWD design standards.

Approximately 200 feet upstream of the Airport Boulevard Bridge, at the same point that the concrete lining extending under the bridge will start, the channel invert will be lowered approximately five feet. This lowered invert will extend to the location of the existing Thermal Drop Structure, a total distance of about 5,000 feet. The Thermal Drop Structure will be demolished and removed from the channel. Exhibit 1-5A and I-5B show the current and proposed channel improvements and invert elevations.

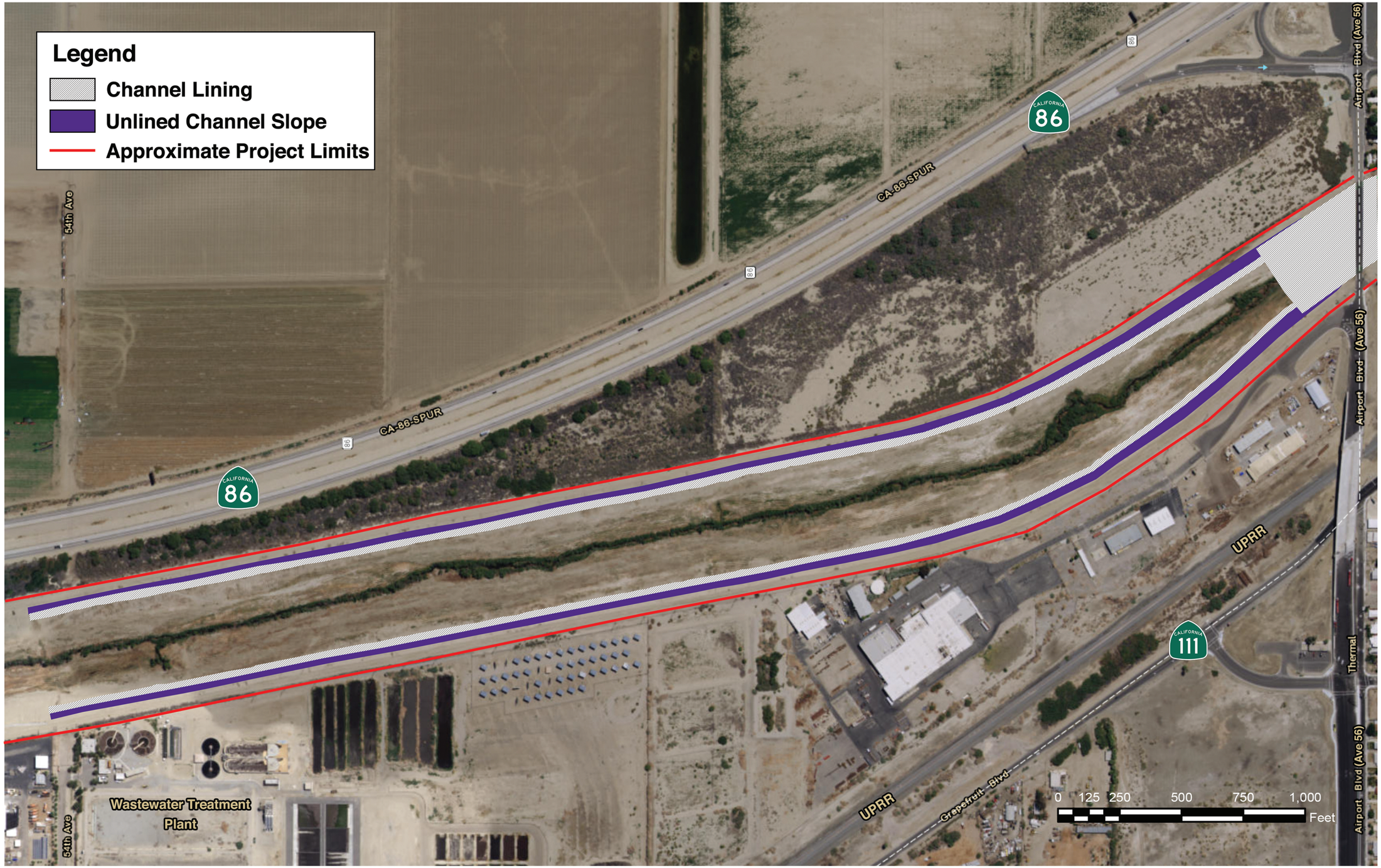
This alternative maximizes a "soft-bottom" design with minimum concrete lining of the channel bottom but would still be able to convey the 100-Year Flood and meet CVWD and FEMA freeboard criteria. Minor adjustments may be made during detailed design to maximize conveyance capacity and to minimize environmental impacts construction costs, and O&M costs. Concrete lining underneath the bridges helps to protect the bridge foundations from scour and erosion.

Table 1-2
Alternative A –Proposed Project
Slope Protection with Maintained Bottom Vegetation

Geometry	Lower channel invert by approximately five feet from 250 feet upstream of the Airport Boulevard bridge to the location of the existing Thermal Drop Structure. Elsewhere invert will be near original grade.
Slope Protection	Concrete-Line channel side slopes from approx. 130 feet upstream of Ave. 54 to about 300 feet downstream of the existing Thermal Drop Structure.
Channel Bottom	Fully line channel beneath bridges at Airport Boulevard, UPRR and Highway 111 to increase conveyance capacity, protect bridges from scour, and control vegetation at critical points.
Airport Boulevard Bridge	Fully line channel beneath bridge. Channel cross section under bridge will be increased by lowering channel invert (see "Geometry" above).
North UPRR Bridge	Fully line channel beneath bridge. Flow area under bridge will be increased by lowering channel invert (see "Geometry" above). Potential extension of pile cross bracing and side curtains by UPRR.
South UPRR Bridge	Fully line channel beneath bridge. Flow area under bridge will be increased by lowering channel invert (see "Geometry" above). Potential extension of pile cross bracing and side curtains by UPRR.
HWY 111 Bridge	Fully line channel beneath bridge. Flow area under bridge will be increased by lowering channel invert (see "Geometry" above).

Table 1-2
Alternative A –Proposed Project
Slope Protection with Maintained Bottom Vegetation

Channel Vegetation	Channel vegetation MAINTAINED for entire Project reach. Highly-maintained areas outside of the pilot channel assumed to have a Manning's "n" (roughness) value of 0.028. Pilot channel area, where vegetation will be maintained to a lesser degree, assumed to have a Manning's "n" value of 0.060 based on periodically mowed vegetation.
Target Flow Rate:	100-year flood (39,000 cfs)
Hydraulic Criteria Met	FEMA 100-Year, CVWD 100-Year
Maintenance Issues	Vegetation maintenance required.
ROW Acquisition	None; revised USBR easement for irrigation lateral.
Relocation Required	No
Area/Percentage of Lined Channel Bottom	Area: 21.12 acres; Percentage: 18 %
Total Import/Export	Import: 26,000 CY aggregate base, 54,000 CY concrete, 4,500 tons reinforcing steel; Export: 370,000 CY excess soil
Impacts to CDFW Waters (Acres)	Temporary Impacts: 85.24 acres; Permanent Impacts: 22.85 acres
Impacts to Waters of the US (Acres)	Temporary Impacts: 59.61 acres; Permanent Impacts: 9.45 acres



Source: ESRI, WPS, 2017

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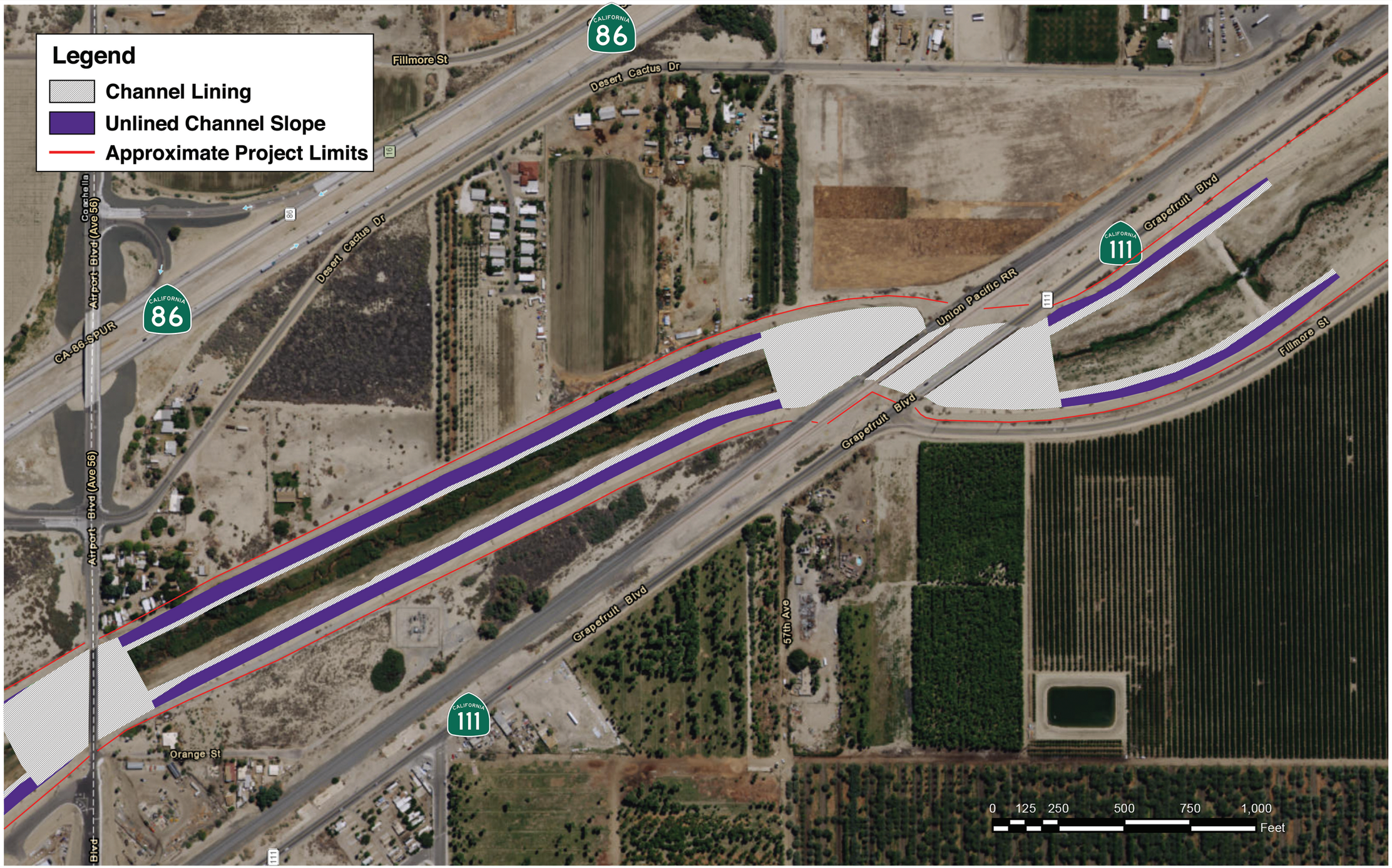
Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Alternative A: Proposed Project (Sheet 1)
Coachella Valley Water District

WATER DISTRICT

Exhibit
1-5A



Source: ESRI, WPS, 2017

08.22.19

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Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Alternative A: Proposed Project (Sheet 2)
Coachella Valley Water District

WATER DISTRICT

Exhibit
1-5B

Utility Projects Common to All Build Alternatives
In addition to the above-mentioned channel and related improvements, four utility relocation projects are common to all build alternatives, including Alternative A.

Irrigation Lateral 99.8 Relocation
All build alternatives will require the relocation of Irrigation Lateral 99.8 east and west of the channel (see Exhibit 1-6A). The portion of the irrigation lateral that extends from the top of the western levee to approximately 100 feet east of the eastern levee (approximately 520 feet in length) will be relocated with a new lateral segment to be installed underground approximately 75 feet north of its current location within the channel. A proposed 72-inch pipe casing will connect to the existing irrigation lateral.

SCG 8-Inch Gas Line Relocation
Southern California Gas Company (SCG) currently has an existing 4-inch natural gas pipeline located on the Highway 111 bridge and an 8-inch natural gas pipeline buried beneath and lying within the right of way of the Coachella Valley Stormwater Channel. The 4-inch line will not be disturbed. However, the 8-inch high pressure line located approximately 30± feet downstream (southwest) of the Highway 111 bridge crossing the channel must be relocated due to its conflict with the proposed channel improvements. The new 8-inch pipeline will be placed at a deeper depth than the existing line, i.e. below the proposed improvements. Within the channel, the existing 8-inch pipeline will be removed during channel work and the remainder will be abandoned in place.

As shown on Exhibit 1-6B, a drill rig will set up on the northwest side of the channel along Highway 111 at a location approximately 600 feet northwest of the Filmore Street center line where it intersects with Highway 111. The drill rig staging area will be located within Highway 111 right-of-way and will drill in a southeasterly direction along and parallel to the paved section of the Highway 111. Three 3'x3'x5' bore holes will be spaced along the drill route to ensure that drilling does not impact other utilities along the route.

The drilling will terminate on the southeast side of the channel approximately 300± feet from the channel. Immediately southeast of this drilling exit point, SCG will stage the assembled pipeline (pipeline string) 1,500± feet along, parallel to and within the right of way of Highway 111. The assembled pipeline will then be attached to rigging at the end of the drill rig, which will pull the assemble line back through the new bore hole where it will be joined to the existing line.

IID Power Pole Relocation (North) – Airport Boulevard
Imperial Irrigation District has an electrical power line crossing the Coachella Valley Stormwater Channel just south of the Airport Boulevard Bridge. The line is currently supported by three wood poles, one on the west side of the channel, one within the channel, and one on the east side of the channel. See Exhibit 1-6C. The pole within the channel must be removed, as it is an obstruction to flow in the channel and flood flows in the channel could potentially damage the pole and the electrical line. In addition, the western pole is currently supported by three cable down guys, which end at ground anchors located within the limits of the proposed reinforced concrete lining to be constructed beneath the Airport Blvd. Bridge.

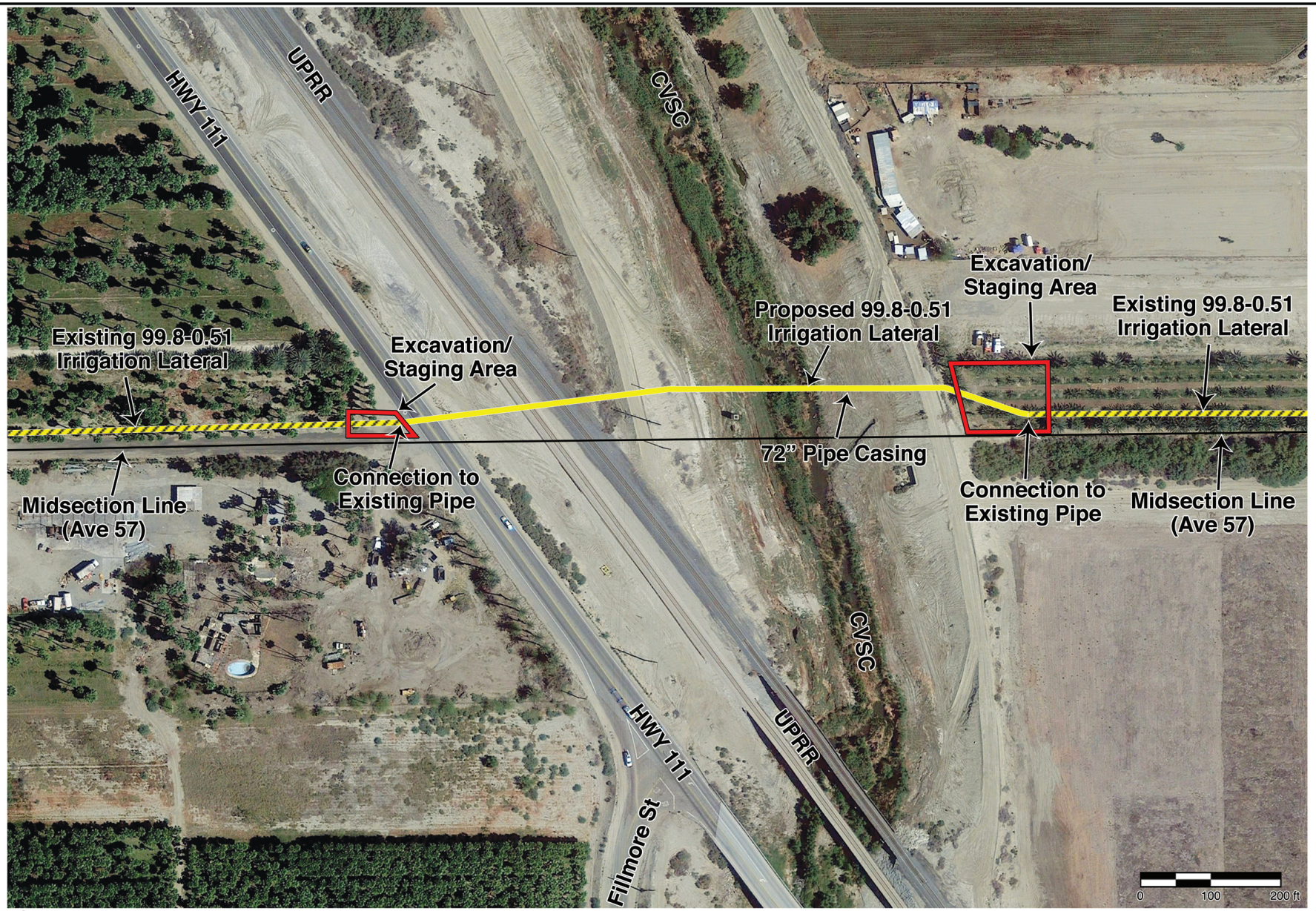
The pole within the channel and the three down guys with anchors within the proposed channel limits will be removed as part of the project. On the west, a new steel guy pole will be installed to take the place of the three down guys to be removed, and new wood poles will be installed on both the east and west side of the channel to carry the electrical line over the channel. Existing and proposed pole heights above ground are shown on Exhibit 1-6C. The poles to be installed as part of the project are all lower in height than the existing power pole on the west side of the channel, which will remain in place.

Power Line Relocation (South) at Lateral 99.8-0.51

Imperial Irrigation District (IID) has an electrical power line running along the west side of the Coachella Valley Stormwater Channel (channel) in the vicinity of CVWD's Irrigation Lateral 99.8-0.51 pipeline (pipeline) and the Union Pacific Railroad tracks. As described above, the Project requires relocation of the irrigation lateral where it crosses the channel, and some of IID's power poles on the west side of the channel must be relocated in order to complete the irrigation lateral relocation.

The power line currently makes a change in direction as shown on Exhibit 1-6D. Three existing poles support this change in direction - one wood angle pole and two wood guy poles. These three poles will be removed and replaced with two new poles as shown on Exhibit 1-6D to accomplish the same change in direction at approximately the same location. Instead of a single angle point of approximately 30 degrees, the line will make the change in direction with two angles of approximately 120 degrees and 90 degrees.

In addition, an existing wood pole north of the change in direction will be replaced with a new wood pole as shown on Exhibit 1-6D. The approximate heights above ground of existing and proposed poles affected by the project are also shown on this exhibit. The tallest existing poles have a height of approximately 63 feet above ground. The tallest proposed poles will be approximately 67 feet tall. No poles will be placed inside Union Pacific Railroad right-of-way.



Source: Google Earth, 2017

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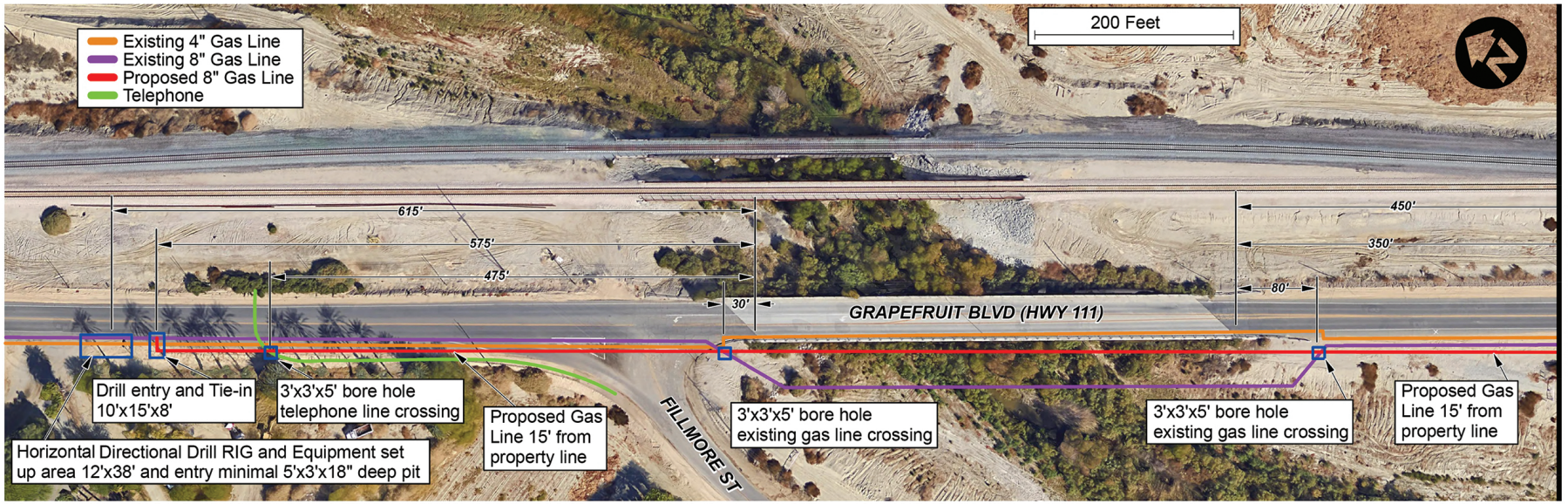
Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Lateral 99.8-0.51 Relocation
Coachella Valley Water District

WATER DISTRICT

Exhibit
1-6A





Source: SoCal Gas, 2019

08.08.19

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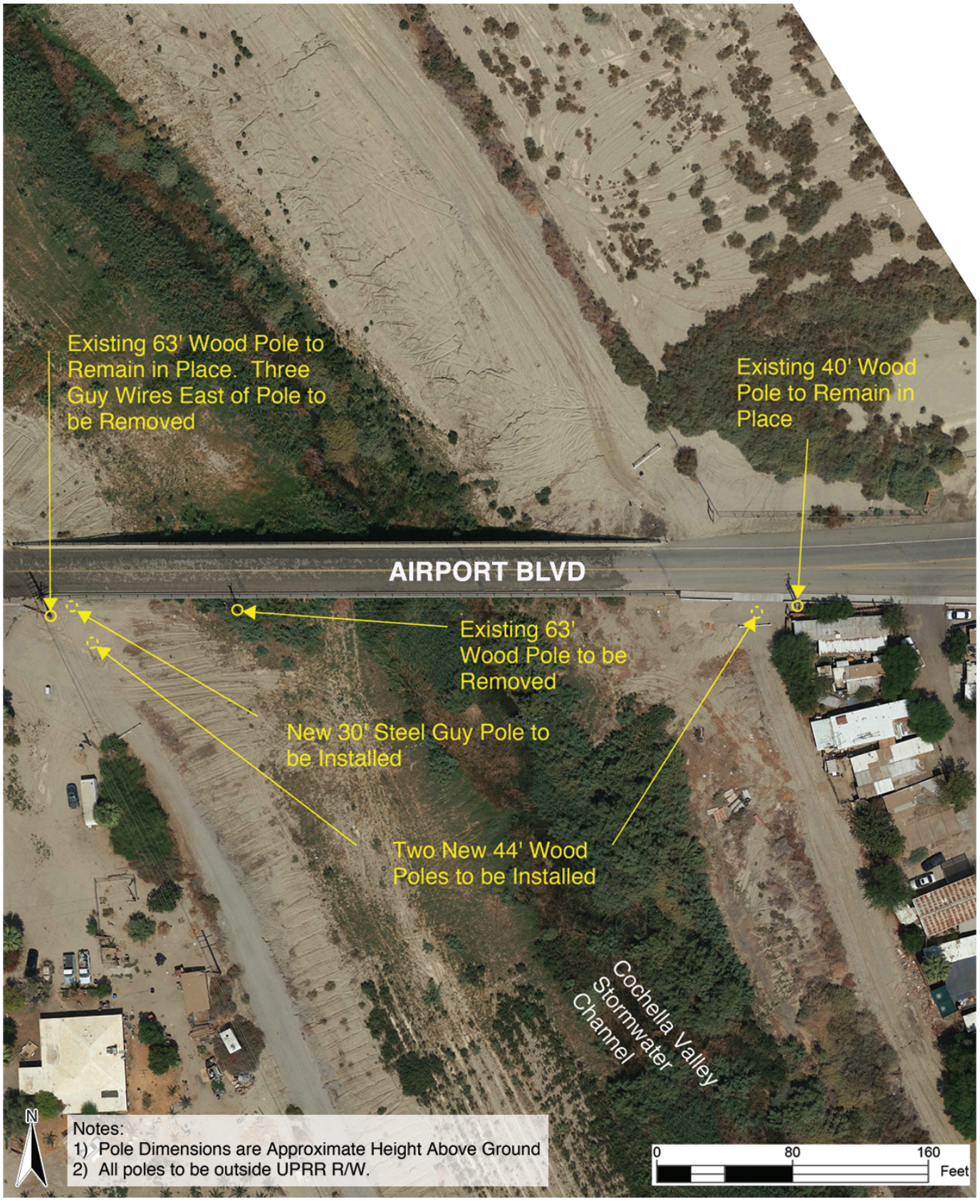
Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Southern California Gas Line Relocation
Coachella Valley Water District

WATER DISTRICT

Exhibit
1-6B



Source: WSP USA, 2019

08.08.19

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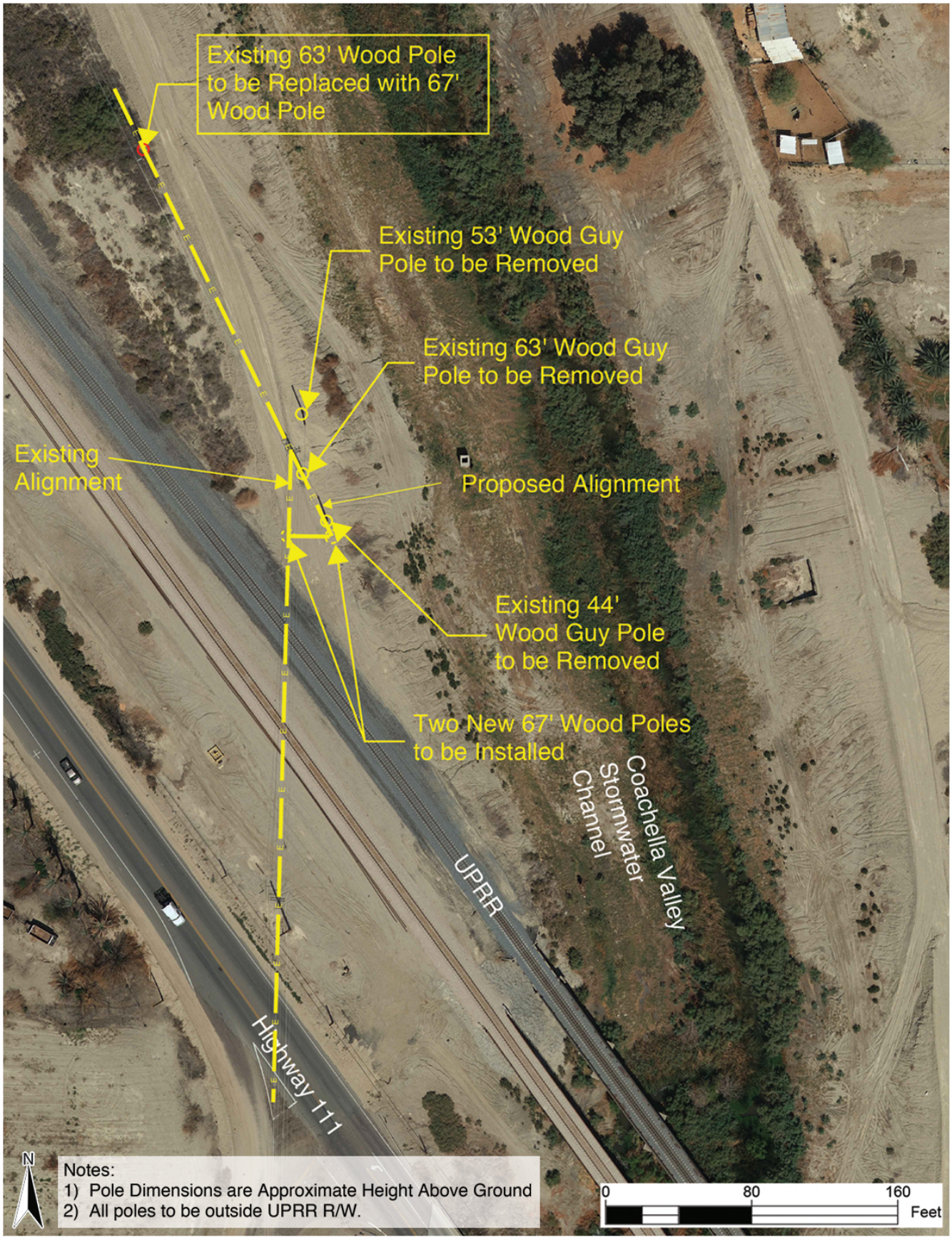
Coachella Valley Stormwater Channel Improvement
Avenue 54 to Thermal Drop Structure
IID Pole Relocation - North
Coachella Valley Water District

WATER DISTRICT

Exhibit

1-6C



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Coachella Valley Stormwater Channel Improvement
Avenue 54 to Thermal Drop Structure
IID Pole Relocation - South
Coachella Valley Water District

WATER DISTRICT

Exhibit
1-6D

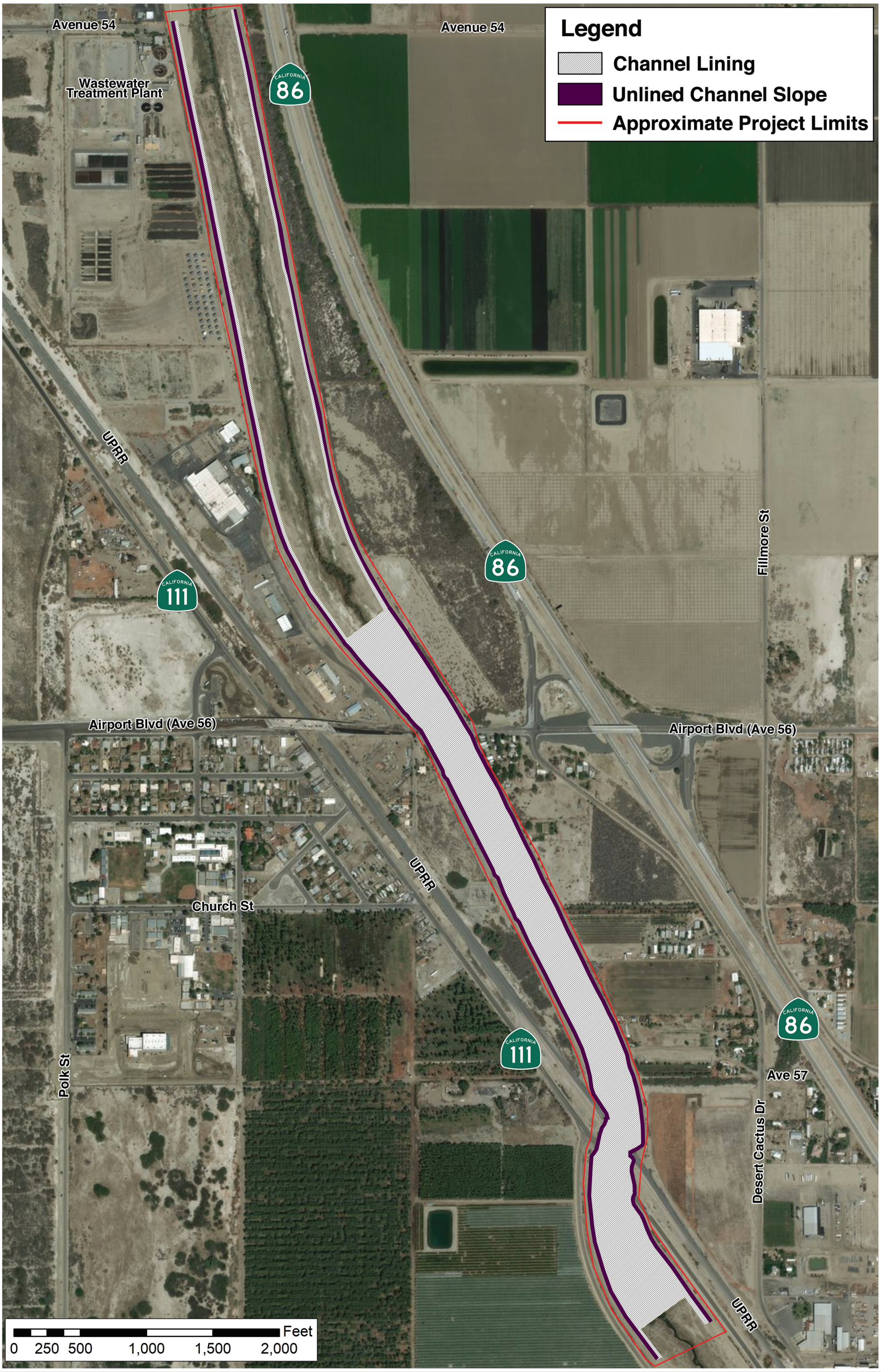
Alternative B – Fully Lined Channel

Alternative B proposes to fully line the channel cross section (sides and bottom) with reinforced concrete from approximately 1,000 feet upstream of Airport Boulevard downstream to the Thermal Drop Structure. Upstream of the fully lined section, only slope protection would be constructed. The channel invert would be lowered approximately five feet over the same extents as full lining construction. See Exhibit 1-7. Alternative B will also require relocation of Irrigation Lateral 99.8 east and west of the channel (Exhibit 1-6A), relocation of the SCG 8-inch natural gas line (Exhibit 1-6B), and removal and relocation of several IID power poles (Exhibits 1-6C and 6D).

This alternative can pass the 100-Year flow and provide four feet of freeboard. The concrete lining would reduce the resistance to flow sufficiently to convey the design flow and eliminate the need to maintain vegetation in the fully-lined portion of the channel. Reinforcement or other upgrades comparable to those associated with Alternative A will be required at bridge piers and substructures. These upgrades may take the form of extending existing bridge pile cross bracing and side curtains to provide supplemental support and protection of bridge supports. In addition, this alternative would increase the channel cross-section by steepening channel side slopes. Any widening of the channel would be restricted to the existing CVWD rights-of-way.

Table 1-3
Alternative B – Fully-Lined Channel

Geometry	Lower invert approx. five feet from approx. 1,000 feet upstream of Airport Boulevard to the Thermal Drop Structure.
Slope Protection	Side slope lining from Ave. 54 to Thermal Drop.
Channel Bottom	Fully lined channel from approx. 1,000 ft. upstream of Airport Boulevard to Thermal Drop.
Airport Boulevard Bridge	Flow area under bridge will be increased by lowering channel invert (see "Geometry" above).
North UPRR Bridge	Flow area under bridge will be increased by lowering channel invert (see "Geometry" above). Potential extension of pile cross bracing and side curtains by UPRR.
South UPRR Bridge	Flow area under bridge will be increased by lowering channel invert (see "Geometry" above). Potential extension of pile cross bracing and side curtains by UPRR.
HWY 111 Bridge	Flow area under bridge will be increased by lowering channel invert (see "Geometry" above).
Channel Vegetation	Maintained channel vegetation from Ave 54 south to 1,000 feet north of Airport Boulevard
Target Flow Rate:	100-year (39,000 cfs)
Hydraulic Design Criteria Met (FEMA 100-Year, CVWD 100-Year)	FEMA 100-Year, CVWD 100-Year
Maintenance Issues	Periodic mowing of vegetation north of fully lined channel reach.
ROW Acquisition	No; revised USBR easement for irrigation lateral.
Relocation Required	No
Area/Percentage of Lined Channel Bottom	Area: 47.65 acres; Percentage: 41 %
Total Import/Export	Import: 124,303 CY aggregate/concrete/steel; Export: 319,000 CY excess soil; Net Import/Export: 194,697 CY
Impacts to CDFW Waters (Acres)	Temporary Impacts: 59.06 acres; Permanent Impacts: 49.09 acres
Impacts to Waters of the US (Acres)	Temporary Impacts: 37.82 acres; Permanent Impacts: 31.26 acres



Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Alternative B - Fully Lined Channel
Coachella Valley Water District

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WATER DISTRICT

Exhibit
1-7

Alternative C – Slope Lining and Channel Widening

Alternative C would provide slope protection along the entire length of the Project channel reach. The existing channel bottom would be unlined except at the bridges, and a soft bottom along most of the channel where vegetation will be permitted with minimal maintenance. This alternative widens the eastern portion of the channel between Airport Boulevard and UPRR bridges; CVWD will periodically mow vegetation in this new portion of unlined channel bottom to maintain channel capacity. The channel would be widened to the east between the mobile home park at Airport Boulevard downstream to the northernmost UPRR bridge. In summary, vegetation in the existing channel would largely be unmaintained. Vegetation in the widened portion of the channel would be regularly maintained. See Exhibit 1-8. The channel invert would be lowered approximately five feet from about 1,000 feet upstream of the Airport Boulevard Bridge to the Thermal Drop Structure. Lining would be constructed beneath the bridges similar to Alternative A. Alternative C will also require relocation of Irrigation Lateral 99.8 east and west of the channel (Exhibit 1-6A), relocation of the SCG 8-inch natural gas line (Exhibit 1-6B), and removal and relocation of several IID power poles (Exhibits 1-6C and 6D).

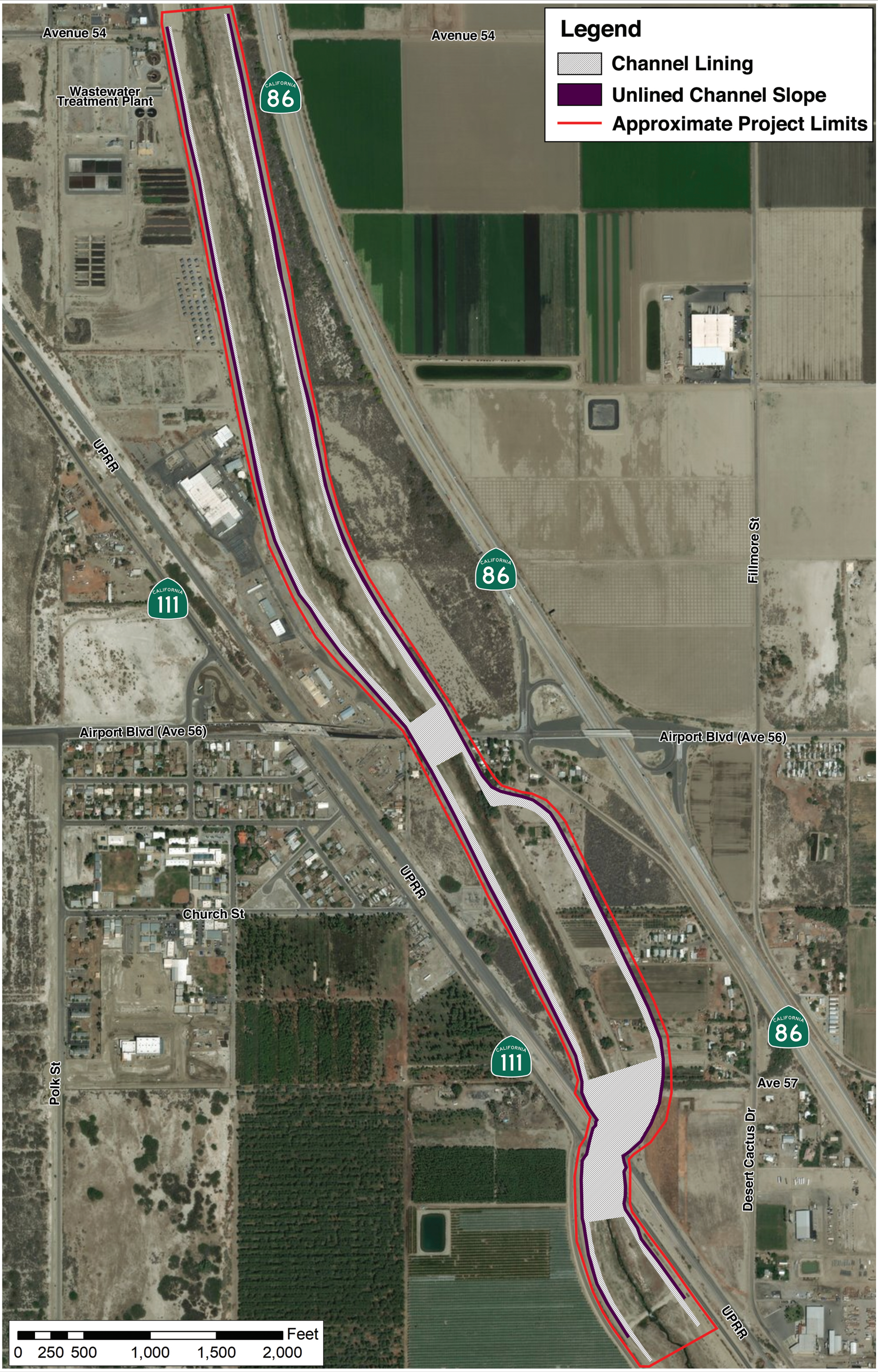
This alternative would convey the 100-Year Flood, while allowing vegetation in the existing channel bottom to be relatively undisturbed. Periodic clearing of vegetation would be required in the widened (easterly) portion of the channel bottom.

Table 1-4
Alternative C – Slope Lining and Channel Widening

Geometry	Lower invert approx. five feet from about 1,000 feet upstream of Airport Boulevard to the Thermal Drop Structure. Widen channel by up to 400 feet between Airport Boulevard and the northernmost UPRR bridge.
Slope Protection	Line sides from Ave. 54 to Thermal Drop.
Channel Bottom	Line beneath Airport Boulevard Bridge and from UPRR bridges to Thermal Drop Structure to protect bridges and control vegetation at critical points.
Airport Boulevard Bridge	Lining beneath bridge. Flow area under bridge will be increased by lowering channel invert (see "Geometry" above).
North UPRR Bridge	Lining beneath bridge. Flow area under bridge will be increased by lowering channel invert (see "Geometry" above). Potential extension of pile cross bracing and side curtains by UPRR.
South UPRR Bridge	Lining beneath bridge. Flow area under bridge will be increased by lowering channel invert (see "Geometry" above). Potential extension of pile cross bracing and side curtains by UPRR.
HWY 111 Bridge	Flow area under bridge will be increased by lowering channel invert (see "Geometry" above).
Channel Vegetation	Channel vegetation NOT MAINTAINED on existing channel bottom. Vegetation MAINTAINED in widened portion. Existing channel assumed to have a Manning's "n" (roughness) value of 0.060, and the widened area assumed to have a Manning's "n" (roughness) value of 0.035.
Target Flow Rate:	100-year (39,000 cfs)
Hydraulic Design Criteria Met (FEMA 100-Year, CVWD 100-Year)	FEMA 100-Year, CVWD 100-Year
Maintenance Issues	Vegetation maintenance required in widened portion.
ROW Acquisition	Yes. Additional 400± feet wide along eastern side of channel and a length of approximately 2,800 feet between Airport Boulevard and the UPRR bridges. Revised USBR easement for irrigation lateral.

Table 1-4
Alternative C – Slope Lining and Channel Widening

Relocation Required	Yes
Area/Percentage of Lined Channel Bottom	Area: 25.13 acres; Percentage: 19 %
Total Import/Export	Import: 86,500 CY aggregate/concrete/steel; Export: 772,333 CY excess soil; Net Import/Export: 733,357 CY
Impacts to CDFW Waters (Acres)	Temporary Impacts: 86.08 acres; Permanent Impacts: 22.07 acres
Impacts to Waters of the US (Acres)	Temporary Impacts: 59.61 acres; Permanent Impacts: 9.45 acres



Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Alternative C - Slope Lining and Channel Widening
Coachella Valley Water District

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WATER DISTRICT

Exhibit
1-8

Alternative D – No Project Alternative

Alternative D, the No Project Alternative, would result in no improvements to the existing channel. However, the channel cannot currently convey the 100-year flow and does not meet FEMA nor CVWD design criteria. The area at risk of flooding (Special Flood Hazard Area (SFHA)) under the No-Project Alternative is shown on the current Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (Figure 3-10). Within this SFHA, FEMA's floodplain management regulations must be enforced, and flood insurance is mandatory.

The No Project alternative would avoid the effects associated with the Proposed Project's construction and operation, and would therefore not permanently affect the site. However, an aggressive vegetation removal/maintenance regime would be required to maximize existing channel capacity, understanding that the projected 100-year flooding could worsen without this maintenance.

Without channel improvements, the No Project Alternative would leave a wide area south of Airport Boulevard and the community (southward) subject to one to three feet of flooding in a 100-Year flood, risking both life and property. It also leaves the areas to be permanently mapped as special flood hazard area (within the 100-Year Flood Zone) with increased costs of flood insurance premiums for the community.

Table 1-5
Alternative D – No Project Alternative

Geometry	No change.
Slope Protection	No additional channel side slope lining.
Channel Bottom	No channel bottom lining under bridges or elsewhere along channel reach.
Airport Boulevard Bridge	No change.
North UPRR Bridge	No change.
South UPRR Bridge	No change.
HWY 111 Bridge	No change.
Channel Vegetation	No change in vegetation management.
Target Flow Rate:	100-year (39,000 cfs); not met by current channel.
Hydraulic Design Criteria Met (FEMA 100-Year, CVWD 100-Year)	Not met by current channel
Maintenance Issues	Aggressive vegetation maintenance required.
ROW Acquisition	NA
Relocation Required	NA
Area/Percentage of Lined Channel Bottom	Area: 0.00 acres; Percentage: 0.00 %
Total Import/Export	Import: 0.00 CY; Export: 0.00 CY; Net Import/Export: 0.00 CY
Impacts to CDFW Waters (Acres)	Temporary Impacts: 0.00 acres; Permanent Impacts: 0.00 acres
Impacts to Waters of the US (Acres)	Temporary Impacts: 0.00 acres; Permanent Impacts: 0.00 acres

1.10 Other Alternatives Considered But Not Further Analyzed

The following project alternatives were considered by CVWD, but were not further analyzed because it was determined they would not meet one or more of the project objectives described in Section 1.4.

Slope Protection without Vegetation Maintenance
This alternative is similar to Alternative B with the exception that the channel bottom vegetation would remain largely unmaintained. Scheduled and approved vegetation maintenance to preserve the design capacity of the channel would continue to occur. The channel side slopes from Avenue 54 to approximately 300 feet downstream of the Thermal Drop Structure would be concrete-lined.

The channel invert from the Airport Boulevard bridge to the northernmost UPRR bridge would be lowered by 2.5± feet, and the channel invert from the northernmost UPRR bridge to the Thermal Drop Structure would be lowered an additional 2.5± feet. The crest of the Thermal Drop Structure would be lowered a total of approximately 5 feet. In order to create sufficient flow area under the Airport Boulevard bridge, the invert was lowered an additional 2.5 feet in the immediate vicinity of the bridge. This "local depression" at the Airport Boulevard bridge would likely fill with sediment over time and require regular cleaning to maintain the necessary cross section.

The Airport Boulevard bridge, Highway 111 bridge, and the two UPRR bridge would be reinforced at the piers to provide additional scour protection. The channel bottom under the Airport Boulevard bridge would be lined, as would the channel reach from the upstream UPRR bridge downstream to the Thermal Drop Structure.

Due to friction from unmaintained vegetation and insufficient channel cross section between Airport Boulevard and the northernmost UPRR bridge, this alternative would not meet FEMA and CVWD design criteria to pass the 100-Year Storm flow with necessary freeboard. The purpose of investigating this alternative was to identify a feasible "soft-bottom" alternative that works for the 100-Year flood with 4-feet of freeboard. Channel and bridge configurations are otherwise similar to Alternative A (Proposed Project). With the improvements and management strategies associated with this alternative; nonetheless, the 100-Year flood will not pass with this alternative.

Channel Slope Lining and Maintained Vegetation with a Lengthened Upstream UPRR Bridge
The northernmost UPRR bridge is the single biggest obstruction to flow in the Project channel reach. Under this alternative, the upstream UPRR bridge would be extended eastward to increase the cross-sectional area under the bridge and create a straighter channel alignment between the two UPRR bridges. This alternative was developed to determine whether extending the bridge could result in a "soft-bottom" alternative that would not extensively alter the channel geometry, and have lower overall Project cost and reduced environmental impact compared to other alternatives

Similar to other alternatives, this alternative would include slope protection on both banks for the entire length of the project, vegetation maintenance, and lining beneath the bridges. However, the invert of the channel would not be lowered between Airport Boulevard Bridge and Thermal Drop as is the case in other alternatives.

Extension of the bridge would be very costly, would not fully eliminate the need to lower the channel invert and channel vegetation would need to be maintained similar to other alternatives. Therefore, this alternative was not considered superior to the preferred alternative.

Coachella Valley Stormwater Channel Improvement Project Avenue 54 to Thermal Drop Structure DRAFT ENVIRONMENTAL IMPACT REPORT

2.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

2.1 Introduction

This section of the EIR provides an overview of the regional environmental setting in which the proposed CVSC Improvement Project is located, with particular emphasis on the environmental constraints and resources most likely to be affected by implementation of the Proposed Project and provides detailed analysis of the effects the Proposed Project will have on the environment. As prescribed by CEQA, the analysis is conducted on a categorical basis. Each discussion includes a description of the thresholds of significance considered in the analysis, the regulatory framework, description of the impacts the Proposed Project would have on the environment and identifies the anticipated level of impact. If the impacts are expected to be potentially significant, mitigation measures are provided. Finally, the level of impact after the imposition of these mitigation measures is determined (residual impact), and cumulative impacts are addressed.

2.2 Summary of Environmental Impact Analysis

This following resource topics are assessed for potential impacts associated with the Proposed Project:

- Aesthetics in Section 2.3
- Agriculture and Forestry Resources in Section 2.4
- Air Quality in Section 2.5
- Biological Resources in Section 2.6
- Cultural and Tribal Cultural Resources in Section 2.7
- Geology and Soils in Section 2.8
- Greenhouse Gas Emissions in Section 2.9
- Hazards and Hazardous Materials in Section 2.10
- Hydrology and Water Quality in Section 2.11
- Land Use and Planning in Section 2.12
- Mineral and Energy Resources in Section 2.13
- Noise in Section 2.14
- Population, Housing and Socio-Economic Resources in Section 2.15
- Public Services in Section 2.16

- Recreational Resources in Section 2.17
- Transportation and Traffic in Section 2.18
- Utilities and Service Systems in Section 2.19

Threshold of Significance: This subsection cites the applicable CEQA thresholds that are applicable to the resource topic and the project.

Regulatory Framework: This subsection provides a brief discussion of federal, State, and local regulations and policies that are applicable to the resource topic and the project.

Environmental Setting: This subsection provides an overview of the regional environmental setting in which the proposed CVSC Improvement Project is located, with particular emphasis on the environmental constraints and resources most likely to be affected by implementation of the Proposed Project.

Existing Conditions: This subsection presents a description of the existing physical environmental conditions at and in the immediate vicinity of the project site with respect to each resource area, and at an appropriate level of detail to understand the impact analysis.

Project Impacts and Mitigation Measures: This subsection evaluates the potential for the project to affect the physical environment. Significance criteria for evaluation of environmental impacts are defined in the beginning of the impact analysis section, including an explanation of how the significance criteria are used in the evaluation of impacts for the Proposed Project. This subsection includes a discussion of the approach to the analysis, including identification of the significance criteria applicable to the Proposed Project. Potential impacts are identified and characterized. Where feasible, mitigation measures are identified to avoid or reduce identified significant impacts to a less-than-significant level.

The Impacts and Mitigation Measures subsection in each resource discussion includes an impact statement followed by the evaluation of the impact for the relevant facility components, and a conclusion regarding the impact for the project as a whole. When applicable, mitigation is included in the evaluation and applied to the relevant components as indicated in the text of the mitigation.

No Impact: This determination is made if a resource is absent or if a resource exists within the project area or area of potential effect, but there is no potential that the project could affect the resource.

Less than Significant: This determination applies if there is a potential for some limited impact on a resource, but the impact is not significant under the significance criterion.

Less than Significant with Mitigation: This determination applies if it is certain that the project would result in an adverse effect that meets the significance criteria, but mitigation is available to reduce the impact to a less than significant level.

Significant and Unavoidable: This determination applies if the Proposed Project would result in a significant adverse effect in accordance with the significance criterion and there is some mitigation available to lessen the impact, but the residual effect after implementation of the mitigation would remain significant.

Significance after Mitigation: This subsection identifies the level of significance of impacts after mitigation measures are implemented.

Cumulative Impacts: Cumulative impacts are discussed in each environmental resource section following the description of project-specific impacts and mitigation measures. CEQA requires that an EIR contain an assessment of the cumulative impacts of a project when the project's incremental effect may be cumulatively considerable. As defined in State CEQA Guidelines §15065(a)(3), "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. The nature of the Proposed Project lends itself to a cumulative impact analysis based on the regional plan approach., specifically the Eastern Coachella Valley Stormwater Master Plan. Guidance for cumulative impact analysis is provided in State CEQA Guidelines §15130:

- An EIR shall discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable" (i.e., the incremental effects of an individual project are considerable when viewed in connection with the effects of past, current, and probable future projects, including those outside the control of the agency, if necessary).
- An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.
- A project's contribution is less than cumulatively considerable, and thus not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.
- The discussion of impact severity and likelihood of occurrence need not be as detailed as for effects attributable to the project alone.

The focus of analysis is the cumulative impact to which the identified other projects contribute, rather than on attributes of the other projects that do not contribute to the cumulative impact.

2.3 Aesthetics

2.3.1 Introduction

Existing visual resources in the vicinity are described in this section. Potential impacts on visual resources from implementation of CVSC improvement project are assessed and mitigation measures are set forth to reduce potential impacts where appropriate. Regional-scale planning and environmental documents, as well as documentation on existing and approved development projects in the vicinity, have been reviewed to obtain data and information used in this analysis and to evaluate the project's potential effects.

2.3.2 Thresholds of Significance

Based on Appendix G of the 2018 State CEQA Guidelines, impacts related to aesthetics would be significant if the Proposed Project would:

a) Have a substantial adverse effect on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

c) Substantially degrade the existing visual character or quality of site and its surroundings.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

2.3.3 Regulatory Framework

Federal

The National Environmental Policy Act of 1969 states that it is the responsibility of the federal government to "ensure all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings … and to attain the widest range of beneficial uses in the environment with degradation, risk to health or safety, or other undesirable and unintended consequences."[1]

The Federal Highway Administration (FHWA) in its implementation of NEPA[2] dictates that final decisions regarding projects are to be implemented according to the best overall public interest, taking into consideration the adverse environmental impacts, including the destruction or disruption of aesthetic values that would occur as result of a Proposed Project. As noted below, there are no "scenic highways" or other aesthetic or cultural resources that would be impacted by the Proposed Project.

State

California Scenic Highway Program

In 1963, the State of California established the Scenic Highway Program to develop a system of State roadways whose adjacent corridors contained scenic resources worthy of protection and enhancement. Sections 260 through 263 of the State Streets and Highways Code establish the Scenic Highways Program and require local government agencies to take the following actions to protect the scenic appearance of a scenic corridor:

- Regulate land use and density of development,
- Provide detailed land and site planning,
- Prohibit off-site outdoor advertising and control on-site outdoor advertising,
- Pay careful attention to and control earthmoving and landscaping, and
- Scrutinize the design and appearance of structures and equipment.

The Proposed Project is not located near any road segment designated a State Scenic Highway.

Regional/Local

No regional or local regulations regarding aesthetics are applicable to the Proposed Project. The Proposed Project is not located near any road segment designated a State Scenic Highway. Applicable County policies (RivCo ECVAP Policy 15.1) reference scenic highways, which do not occur in the project area. The Coachella General Plan cites aesthetic issues within the context of land use compatibility (Coachella GP Citywide Utilities Policy 1.9), directing public utility facilities to be designed in an aesthetically pleasing manner.

2.3.4 Environmental Setting

The Coachella Valley and the Proposed Project area are distinguished by the low-lying desert valley floor surrounded by the high terrain of the San Jacinto, San Bernardino, Little San Bernardino, and Santa Rosa Mountains. These contrasting viewsheds result in an exceptional display of open space and mountain scenery that is a major component of the aesthetic quality of the area. The mountainous areas that ring the Coachella Valley are comprised of a variety of rock formations including darkly varnished rock that contrasts with large expanses of light gray granite, and a diversity of vegetation. Views of the mountain ranges and the expansive desert floor that are visible within the project planning area are highly valued.

1 National Environmental Policy Act of 1969 (Section 101 42 USC Section 4331 [b] [2])
2 Ibid. (USC Section 109 [h])

The two highest peaks associated with the region are San Jacinto Peak in the San Jacinto Mountains located to the northwest and rising to an elevation of 10,804 feet, and San Gorgonio Peak in the San Bernardino Mountains with an elevation of 11,502 feet. The rise of Mt. San Jacinto, from the desert floor to the peak, is the steepest gradient in North America. The Santa Rosa Mountains are located west and southwest of the planning area, with highest peaks being Toro Peak at 8,717 and Santa Rosa Peak at about 8,000 feet.

To the north and northeast of the subject property are the Indio Hills and Mecca Hills, with elevations rising to about 1,600 feet, with the Little San Bernardino Mountains bounding the valley to the northeast. The lowest portions of the project area are also a result of tectonic forces associated with the San Andreas Fault Zone. The Coachella Valley is the northwestern extension of a fault-controlled spreading zone, which extends from the Gulf of California. The spreading and subsidence has created a terminal lake, the Salton Sea, which has no outlet and currently stands at a surface elevation of 228± feet below mean sea level.

The proposed channel improvement alignment is surrounded by natural vistas including the surrounding mountains and the expanse of cultivated fields and native desert lands. The aesthetic experience along the channel alignment is also enhanced by perennial vegetation in the channel.

2.3.5 Existing Conditions

The Coachella Valley is a low desert basin surrounded by dramatic mountainous terrain created by the active geology that is characteristic of Southern California. The overall gradient of the Valley is from northwest to southeast, gently sloping from the San Gorgonio Pass, at approximately 2,600 feet above mean sea, level to the Salton Sea, which has an average 2018 surface elevation of approximately 236 feet below mean sea level.

The valley and the Salton Sea are located within the Salton Trough, a fault-controlled valley formed by the San Andreas Fault Zone. The Salton Trough is located within the Colorado Desert Geomorphic Province, which is bounded to the southwest by the Peninsular Ranges province, to the north by the eastern Transverse Ranges province, and to the northeast by the southeastern portion of the Mojave Desert province. The surrounding provinces contain some of the highest mountain peaks in the state and the region.

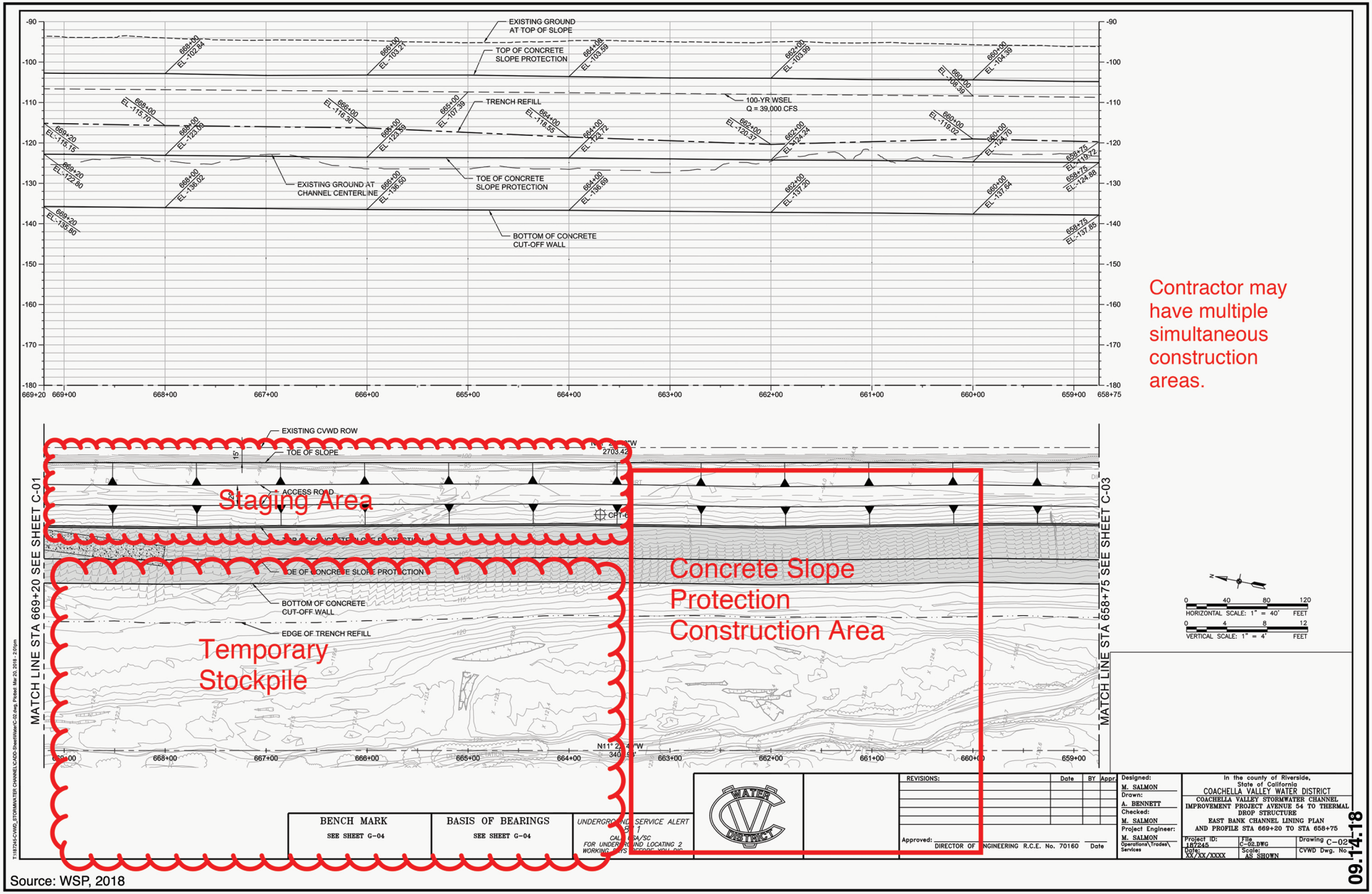
Surrounding mountains include the San Jacinto Mountains, the foothills and slopes of which ascend from the Valley floor. At its peak, Mount San Jacinto rises to an elevation of 10,834 feet above mean sea level. To the west and southwest are the Santa Rosa Mountains, with Toro Peak at an elevation of 8,715 feet above mean sea level. Visual resources to the east include the colorful Mecca Hills, the Cottonwood Mountains and the Chocolate Mountains to the southeast. To the north and northeast of the valley are the Little San Bernardino Mountains, which are visible from the project area. In addition to cultivated fields on the valley floor, alluvial fans, wind and lake deposits have accumulated over time and are prominent features within the valley floor. Emanating from the mountain canyons are numerous alluvial fans, such as the Mecca Hills located east of the planning area.

Concepts and Terminology

The following section describes the terms used in this aesthetics evaluation. For analysis purposes, a potential staging area location has been included (See Exhibit 2-1)[3].

Aesthetics resources are typically defined as both the natural and built environments of the surrounding landscapes that influence the public's enjoyment and appreciation of the environment. A visual or aesthetic impact may occur depending on the extent to which a project's presence would alter the visual character of the area in which it is located.

[3] The project is two miles in length and has access limitations associated with adjoining land uses and traffic on public streets, as well as limitations imposed by State Highway 111 and UPRR lines and bridges. Therefore, it is anticipated that construction staging areas will be located at multiple locations as construction moves along the subject channel reach. Staging areas will be located at and in proximity of existing channel access ramps, several of which are located along the subject channel reach. Equipment parking and materials laydown areas will be located along the existing channel service roads and access ramps. Equipment service areas will be discrete work areas with appropriate BMPs to avoid and minimize any release and ensure the capture of petroleum or other materials that could potentially contaminate soils, or surface or groundwater. Staging areas will not occur within the channel and will not encroach into or interfere with the low-flow channel.



Contractor may have multiple simultaneous construction areas.

Source: WSP, 2018

TERRA NOVA®
PLANNING & RESEARCH, INC.

Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Construction Staging Areas
Coachella Valley Water District

Exhibit 2-1

Visual Character
Visual character includes attributes such as form, line, color, and texture, and is used to describe, not evaluate; that is, these attributes are neither considered good nor bad. However, a change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character can be identified by how visually compatible a proposed project would be with the existing condition by using visual character attributes as an indicator. For this project, the following attributes were considered:

Dominance is position, size, or contrast;
Scale is apparent size as it related to the surroundings;
Form is visual mass or shape;
Color is reflective brightness (light, dark) and hue (red, green); and
Continuity is uninterrupted flow of form, line, color, or textural pattern.

Visual Quality
Visual quality is evaluated by identifying the vividness, intactness, and unity present in the project corridor. Public attitudes validate the assessed level of quality and predict how changes to the project corridor can affect these attitudes. This process helps identify specific methods for addressing each impact that may occur as a result of the project. The three criteria for evaluating visual quality are defined below:

Vividness is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
Intactness is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
Unity is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

Affected Viewers
Travelers and project neighbors are people who have views *to* the improved channel. For this project, the following project neighbors include roadway travelers especially those crossing the channel on Airport Boulevard or Highway 111. Local residents with existing views of the channel will also be affected viewers, as will those who work at adjoining agricultural lands and businesses.

Visual Sensitivity
Visual sensitivity is a measure of the viewer's recognition of a particular object. It has three attributes: activity, awareness, and local values. Activity relates to the preoccupation of viewers – are they preoccupied, thinking of something else, or are they truly engaged in observing their surroundings. The more they are actually observing their surroundings; the greater the sensitivity the viewer will have of changes to visual resources. Awareness relates to the focus of the view – the focus is wide, and the view is general, or the focus is narrow and the view specific. The more specific the awareness, the more sensitive a viewer is to change.

Existing Visual Environment

City of Coachella
The northern portion of the CVSC project is located within or adjacent to the Coachella city limits and is bordered by a mix of agricultural-related industrial land uses and associated farmland, and a wastewater treatment plant. Existing channel vegetation and surrounding agricultural fields with distant mountain views dominate the views enjoyed by the surrounding public.

County of Riverside

Most of the subject channel improvements will occur within unincorporated areas and these lands bounding the project planning area are comprised of a mix of active and fallow agricultural lands, ag-industrial uses, an IID substation, a small mobile home park, and scattered single family residences. Existing channel vegetation, especially between Airport Boulevard and the Highway 111 bridge, provides some "green relief" from the predominant earth colors of agricultural and undeveloped lands. (See Exhibit 1-3 Vicinity Map).

2.3.6 Project Impacts

The following discussion analyzes the temporary (construction-related) and permanent (operation and use) impacts on scenic resources, scenic vistas, and the overall visual quality and character of the surrounding areas. The visual setting is characterized by the natural and built landscape features that may be viewed from publicly accessible vantage points. For analysis purposes, scenic resources are categorized as the built or natural environment that contributes to a scenic public setting. This includes but is not limited to trees and rock outcroppings. Scenic vistas are considered any publicly accessible viewpoints that provide expansive views of a highly valued landscape view.

The use of construction staging areas, grading activities, and construction equipment could create temporary impacts on aesthetics. Permanent impacts will be those associated with the operation and maintenance of the stormwater channel. The analysis of temporary visual impacts during construction is determined by activities that would substantially degrade the existing visual character or quality of the project planning area and the total duration.

Permanent impacts from the proposed CVSC improvement project are assessed based on the project's potential to have a substantial adverse effect on scenic vistas, substantially damage scenic resources, or substantially degrade the existing visual character or overall quality of the site and its surroundings, including through the potential creation of light and glare.

CEQA requires this analysis to determine the level of visual impacts by assessing changes to the visual resources and predicting viewer response to these changes. Impacts can be classified as either beneficial or detrimental.

The substantial majority of the proposed channel improvements are widening and installation of flat work, including aggregate and concrete channel pavement, and associated service road improvements. No new vertical structures are planned, excepting smaller structures such as pressure relief vales and lateral lines entering the channel; project improvements will not significantly block views or affect scenic viewsheds. The development of the Proposed Project would be consistent with existing conditions and the developed nature of the planning area.

The sensitivity of residents adjacent to and near the project is expected to range from low to moderate. For residents who live along the channel, including residents of the mobile home park at the southeast corner of the channel and Airport Boulevard and a single-family home bordering the west side of the channel, sensitivity would be greatest. Through the appropriate location of staging and channel access areas the majority of channel construction and maintenance will be minimally visually intrusive to residents.

The following discusses the channel improvement project in the context of applicable thresholds of significance. The responses to these threshold questions are based upon the channel improvement plans and extensive analysis of existing visual resources. The analysis considers several key locations where components of the project will have the potential to affect the aesthetic value of the area, as defined above.

a) Have a substantial adverse effect on a scenic vista.

Less than Significant with Mitigation: Scenic vistas may be designated by local planning documents, including the city of Coachella and Riverside County General Plans, or by the Caltrans scenic highway program, or they can be informal, for instance mountain peaks or expansive views. The City, County and state have no designated or eligible "scenic highways" in the vicinity of the project. The planning area is located along the central axis of the valley and removed from the steepest terrain to the west. Nonetheless, viewers within the planning area enjoy dramatic views of surrounding agricultural lands, undisturbed desert and mountain views. In the planning area, these visual resources are somewhat compromised by existing development, including unscreened industrial lands, wastewater treatment plant, unscreened outdoor storage, residential and other development, and major transportation infrastructure.

Project improvements include channel lining, four utility relocation projects, temporary reduction in channel vegetation, channel access roads and associated structures. These improvements may add context to the views without creating a substantial adverse effect since they will be limited in scope and their effects on the surrounding lands and viewsheds will also be limited. The Proposed Project will result in the construction of channel slope lining along the entire 2±-mile project length. It will also include channel bottom lining under and in proximity to the four bridges that cross the channel through this reach. In these areas, the extent of a vegetated soft channel bottom will be reduced but will not be entirely eliminated, as periodic stormflows and associated debris transport will result in coverage of portions of the subject bottom lining that may support limited vegetation until maintained.

An important consideration is the covering of the channel lining [concrete] with soil to prevent graffiti, which will relieve the visual effect of the concrete slope lining. The placement of soil on top of the slope lining would return aesthetics to pre-project conditions. On the lined portions of the channel bottom periodic storm flows are expected to cover most of the planned bottom lining with sand and gravel being transported along the channel. The intended slope lining and incidental soil deposition on the channel bottom will serve to restore the channel's appearance to a state comparable to the current condition.

An additional essential consideration is that the channel and the proposed improvements will occur in an area of topographic depression (sub-grade channel). The visual effects of the Proposed Project will only be evident from vantage points where viewers can see directly into the channel, including primarily viewers atop the channel service road and those traveling on bridges that cross the channel within the planning area.

Construction Impacts

Construction of the Proposed Project will result in temporary impacts to scenic vistas from the use of construction equipment in the channel and its storage outside of the channel; and therefore mitigation measure AES-1 Screening is provided to reduce aesthetic impact during construction. Staging areas will be located at and in proximity to existing channel access ramps and utility relocation sites, several of which are located along the subject channel reach. Equipment parking and materials laydown areas will be located along the existing channel service roads and access ramps, which could potentially (but temporarily) be visible from surrounding roadways. Staging areas will not occur within the channel and will not encroach into or interfere with the low-flow channel. Potential staging areas are shown on Exhibit 2-1.

It is anticipated that construction will take approximately one year to complete. Construction activities would not significantly impact scenic vistas, because the views of equipment would be short term, and would not affect long-range views for the traveling public.

Utility Projects

With regard to utility relocations, the irrigation lateral and SCG gas line will be buried upon completion and therefore will have no permanent impact on surrounding views of scenic vistas. Temporary impacts will be short-lived and less than significant.

As discussed in Section 1.10 of this EIR, project improvements will also require the relocation of several IID power poles at two locations. Power pole relocations in proximity to Airport Boulevard will result in a new 30' steel guy pole and the removal of three ground-anchored guy wires. New 44' wood power poles will be added on the western eastern banks of the channel (see Exhibit 1-6C). An existing 63±' wood power pole will be removed from within the channel, and an existing 40' wood power pole on the eastern bank would remain. Power pole relocations in proximity to the UPRR bridge will result in two new 67' wood power poles, the removal of a 44' power pole and 53' guy pole, and removal of two 63' wood power poles (see Exhibit 1-6D). With the addition of some poles and removal of others, impacts from IID facility relocations will be less than significant.

As noted, visual resources in the planning area are somewhat compromised by existing development, including unscreened industrial lands, wastewater treatment plant, unscreened outdoor storage, residential, existing power poles, and major transportation infrastructure. Therefore, visual impacts associated with the relocated IID power poles are expected to be comparable to the existing condition and will therefore be less than significant.

With the implementation of mitigation measure AES-1 (Screening) in Section 2.3.7 below, impacts associated with construction staging of the Proposed Project will be less than significant.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcropping, and historic buildings within a state scenic highway?

No Impact. Substantial damage to a scenic resource occurs when a project adversely degrades one or more of the aesthetic qualities that contribute to a scenic setting. This includes damages to trees, rock outcroppings, and historic buildings within a state scenic highway. No segment of the proposed channel improvement project located within a State Scenic Highway or one eligible for such designation; and therefore, there will be no impact as a result of the project to this criterion.

Utility Projects
Relocation of the irrigation lateral, SCG gas line, and IID power poles will have no impact on scenic resources within a State Scenic Highway because the proposed improvements are not located within a State Scenic Highway or one eligible for such designation; and therefore, there will be no impact as a result of the project to this criterion.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant. A project is classified as "substantially degrading" to the visual character or quality of the site if it would create a negative effect to the public's appreciation and experience of the visual environment. For this reason, visual changes are considered in the full context of a site or locale's visual sensitivity.

The Proposed Project's impacts to visual changes were evaluated in terms of potential damage to, or removal of features of the natural or built environment that create a scenic setting. The level of change to a visual resource also takes into consideration the degree of permanence.

Construction Impacts
Given the substantial amount of earthwork associated with the project there will be temporary construction-related impacts on the visual character of the project planning area. Direct views of the channel work and construction staging areas would be available from roadways and adjoining residences. These include the approved but not yet built CV Link multi-modal path, which is planned for construction atop the west bank channel service road in the northern portion of the project area and extending south to Airport Boulevard.

Construction equipment may be visible on service roads and will progressively move along the channel reach as construction progresses. The construction of the proposed improvements will be carried out in segments commencing in the vicinity of Avenue 54 and moving south (downstream) to the Thermal Drop Structure. Impacts associated with construction will be short term and will not result in any significant permanent alteration of the visual character of any portion of the channel.

Long-Term Impacts
The long-term potential to impact the visual character of the area is limited by the nature of the project, the channel's sub-grade location with respect to surrounding lands, the planned covering of most of the slope lining with soil, and optimizing the amount of soft bottom channel where managed and maintained vegetation will be permitted to grow. Therefore, visual impacts of the project area are expected to be comparable to the existing condition and will therefore be less than significant.

Utility Project
The following discusses the potential impacts associated with the required relocation of irrigation lateral 99.8, SCG 8-inch gas line, and IID power poles, as discussed in Section 1.10 of this EIR. Similar to other components of project improvements, construction equipment may be visible from the relocation sites and service roads. Impacts associated with relocation and construction of the utility projects will be short term and will not result in any significant permanent alteration of the visual character of the project area.

At buildout, the irrigation lateral and SCG gas line will be buried, and will not alter the existing visual character of the project. Visual resources in the planning area are somewhat compromised by existing development, including existing power poles. Therefore, visual impacts of the project area are expected to be comparable to the existing condition and will therefore be less than significant.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Less than Significant with Mitigation: The proposed channel improvements will not generate a permanent source of light or glare. Staging and equipment storage areas may be equipped with security lighting; however, such lighting will be temporary. In the event, nighttime security lighting is required, the project would adhere to MM AES-2 Security Lighting; whereas, temporary construction and staging area lighting shall be shielded to preclude spillage onto adjoining roadways, residential properties or other sensitive receptors. There will be no permanent lighting associated with the Proposed Project.

Utility Projects
The proposed utility relocations will not generate a permanent source of light or glare. Staging and equipment storage areas may be equipped with security lighting; however, such lighting will be temporary. In the event, nighttime security lighting is required, the utility projects would adhere to MM AES-2 Security Lighting; whereas, temporary construction and staging area lighting shall be shielded to preclude spillage onto adjoining roadways, residential properties or other sensitive receptors. There will be no permanent lighting associated with the utility relocation projects.

2.3.7 Mitigation Measures

AES-1: Screening.
To the extent practicable, project construction staging areas (Exhibit 2-1 Construction Staging Areas) shall be located a minimum of 100 feet from any public right-of-way, or screened from public view. Any necessary screening should consist of a perimeter chain-link fence with fabric or other material that provides a view screen. When a staging area's use is ended, the land shall be restored to its original condition.

AES-2: Security Lighting.
Any work area, staging or other lighting plans shall be shielded to preclude spillage onto adjoining roadways, residential properties or other sensitive receptors.

2.3.8 Significance After Mitigation

With adherence to the mitigation measures, construction-related (temporary) impacts from staging areas and security lighting are expected to be less than significant. Channel improvements associated with the Proposed Project will not significantly affect the appearance of the channel or project area.

2.3.9 Cumulative Impacts

Both County and City of Coachella visual resources were analyzed to determine the extent of the impacts the channel improvement project would have on the resources. Given that channel improvements constitute a regional project the cumulative impacts are based on the regional impacts, and the scope of the analysis was based on each jurisdictions' General Plan and Zoning policies and standards relating to visual resources and lighting. The construction and use activities associated with this channel improvement project will be minimally visible to residents and the traveling public, whose views shall also be maintained because the project does not propose structures introducing new visual clutter or obstructions to views.

Cumulative impacts are those resulting from past, present, and reasonably foreseeable future actions, combined with the potential visual impacts of this project. The channel improvement project is located within areas of existing industrial, agricultural activity and limited residential use, and other development and light sources. The construction activities will not significantly change the scenic vistas or visual character of the areas where it occurs. Because of the limited new construction proposed, channel improvements and utility relocations will not contribute to cumulative increases in visual effects in the project area. Aesthetic impacts associated with the implementation of the Proposed Project will be less than cumulatively considerable.

2.4 Agricultural and Forestry Resources

2.4.1 Introduction and Background

The project planning area has soils and topography well suited for agricultural production. The Riverside County Important Farmland Map of 2016 has designated areas within the Planning Area as being Prime Farmland[4]. Currently, however, farming in the east valley is scattered, and much of the lands remain vacant or fallow (Google Earth 2018). This section assesses impacts on agricultural and forestry resources resulting from the proposed channel improvement project.

2.4.2 Thresholds of Significance

Article 5, Section 15064 of the CEQA Guidelines provides guidance for determining the significance of the environmental effects caused by a project. Appendix G of the CEQA Guidelines provides a list of environmental factors that potentially may be affected by completion of a project. The CVSC improvement project would have a significant effect on Agricultural Resources if it is determined the it would:

[4] Prime Farmland has the best combimation of phusical and chemical feautres able to sustain long-term agricultural production. This land has the soil quality, growing seasons, and moisture supply needed to produce sustained high yeilds. Defined Prime Farmland must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

d) Result in the loss of forest land or conversion of forest land to non-forest use?

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

2.4.3 Regulatory Framework

Federal

Farmland Protection Policy Act
The Farmland Protection Policy (FPPA) requires an evaluation of the relative value of farmland that could be affected by decisions sponsored in whole or part by the federal government. The FPPA is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that, to the extent possible, federal programs are administered to be compatible with State, local units of government, and private programs and policies to protect farmland (U.S. Department of Agriculture, 2015). For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements includes forestland, pastureland, cropland, or other land. As discussed below, the Proposed Project has the potential to impact farmlands. Mitigation measures are set forth to ensure impacts to farmlands remain at less than significant levels.

State

California Land Conservation Act
As noted in Section 4.3.2.1 above, the California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is the State's primary program aimed at conserving private land for agricultural and open space use. It is a voluntary, locally administered program that offers reduced property taxes on lands whose owners place enforceable restrictions on land use through contracts between the individual landowners and local governments. There are no lands in the study area that are enrolled in the Williamson Act program. Therefore, land use restrictions imposed by the Williamson Act are not applicable to the Proposed Project.

State Farmland Designations[5]

Prime Farmland: Prime Farmland is defined as land with quality soil and moisture supply that allows for production of high yield crops when managed by modern farming methods. These lands are best suited for producing food crops, feed, forage, fiber, and oilseed crops. The best use of the land is for cropland, pastureland, rangeland, and forestland, however urban uses are not recommended.

[5] Riverside County Important Farmland 2008", prepared by California Department of Conservation, Division of Land Resource Protection, prepared September 2009

Farmland of Local Importance: Farmlands of Local Importance have the soil quality and characteristics of Prime Farmland or Statewide Important Farmlands, but lack available irrigation water. These lands may produce crops important to Riverside County, but are not listed as Unique Farmland Crops.

Unique Farmlands: This type of farmland has reduced soil quality or characteristics from Prime Farmland or Statewide Important Farmlands, but can still be used for high value food and fiber crops. These lands are capable of producing crops such as citrus, olives, and avocados.

Statewide Important Farmlands: These lands are similar to Prime Farmlands, however do not exhibit as good soil as Prime Farmland. Statewide Important Farmland still has a good combination of physical and biological characteristics for producing similar crops as Prime Farmlands, and is available for cropland, pastureland, rangeland, or forestland.

Regional and Local

Riverside County General Plan/Eastern Coachella Valley Area Plan
The Proposed Project is located within the Riverside County *Eastern Coachella Valley Area Plan* (ECVAP), which is a sub-area of the Riverside County General Plan and Vision Statement (Riverside County 2015). The Vision Statement details the physical, environmental, and economic characteristics that the County aspires to achieve by the year 2035. Using the Vision Statement as the primary foundation, the General Plan establishes policies to guide development and conservation within the entire unincorporated County territory, while the Area Plan details standards and policy direction specifically for Eastern Coachella. The ECVAP is located within the southeast portion of the Coachella Valley, south and east of the City of Indio, and east of the City of La Quinta and the Santa Rosa Mountains, stretching to the Imperial County line on the south.

The ECVAP Land Use Plan depicts the geographic distribution of land uses within the plan area. These land uses derive from the five General Plan Foundation Component land uses: Open Space, Agriculture, Rural, Rural Community and Community Development. The Plan recognizes the importance of preserving the Valley's agricultural resources for their economic, cultural and scenic values and contains the following policies relative to agriculture preservation:

- **ECVAP 5.1:** Retain and protect agricultural lands through adherence to the policies contained in the Agriculture section of the General Plan Land Use Element.
- **ECVAP 8.2:** Discourage industrial uses that may conflict with agricultural or residential land uses either directly or indirectly within the Eastern Coachella Valley Area Plan.

Riverside County Land Use Ordinance
The Riverside County Land Use Ordinance (Ordinance 348.4802) provides for land use planning and zoning regulations and related functions of Riverside County. The Land Use Ordinance establishes zoning districts, standards, and regulations to guide development within the County. According to Ordinance Article XIV, Section 14.2, water works facilities, both public and private, intended primarily for the production and distribution of water for irrigation purposes are permitted within this district, as are public utility facilities.

City of Coachella General Plan
The City of Coachella General Plan recognizes that much of the agricultural lands in the city and vicinity are in transition toward urban use. The Plan does give consideration to a type of urbanization that still integrates and may to some degree preserve the agricultural heritage of the community and east valley. General Plan goals relevant to the subject CVSC improvement project include the following:

- **Policy 12.3 Agriculture.** Recognize and maintain agriculture and related uses as a key component of the City's long-term economic development strategy. Prioritize the preservation of date groves, citrus groves and vineyards.

- **Community Goal:** Strong local food production and ample opportunities to eat locally grown food. Agriculture is a fundamental part of Coachella's historic and current economy and culture. Residents want a larger portion of their food to come from neighboring farms as well as the opportunity to grow their own food on a smaller scale. In addition to increasing community food security, it is important that children understand the community's connection with agriculture by growing healthy fruits and vegetables themselves.

2.4.4 Environmental Setting

Agricultural lands occur along and in proximity to the project area. Agriculture was the first large-scale land use to occur in the Coachella Valley dating back to the early 20th century. Early crops favored by farmers included dates, citrus and even cotton were cultivated, and valley growers have since expanded to make the Coachella Valley a major producer of table grapes and truck crops[6]. While agriculture constituted the largest conversion of wild lands in the valley, over time land values have increased with continuing development pressure.

From 1948 to 1999, the number of irrigated acres increased from about 23,000 to 72,800 acres.[7] The growth in agriculture was, at least in part, facilitated by the completion of the Coachella Branch of the All-American Canal by the U.S. Bureau of Reclamation in 1949. The canal delivered imported Colorado River water to the eastern Coachella Valley for irrigation purposes, and this supplemental water source made additional agricultural activity possible and relieved pressure on the lower valley aquifer. In 1999, agriculture in the Coachella Valley used 333,300 acre-feet of water for crop irrigation and other agricultural purposes.

More than 2/3rds of local farmland is irrigated in part with Colorado River water delivered via the Coachella Canal. CVWD delivered 280,000 acre-feet to 66,431 acres in 2014, with a gross production value of $730,487 with irrigable lands in the Coachella Valley totaling 76,354 acres.[8] Agriculture remains the third largest employment sector in the region and represents a mainstay of the broader Riverside County economy, ranking in the top ten among California counties in total value of agricultural production.

Riverside County's leading agricultural products are fruit and nut crops, livestock products, and vegetable products[9]. Major Coachella Valley products include dates, grapes, citrus, and a variety of other fruits and vegetables. Agricultural lands are designated by the State's Department of Conservation as "prime farmland," "statewide important farmland," "unique farmland," and "local important farmland," based on their soil characteristics, climatic conditions, water supplies, and suitability for production.

In the project vicinity, lands are being cultivated for citrus, ornamental landscape plants, and truck crops. Not all of surrounding or nearby agricultural lands are in cultivation, and these lands are interspersed with small residential enclaves and ag-related industrial lands (packing sheds, irrigation services, etc.). Farm equipment providers, packinghouses and transportation/distribution centers are major land uses and employers in the project vicinity.

There are no forestry resources in proximity to the project area, the nearest such resources being in the San Jacinto Mountains.

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6 "Truck crops" refers to the horticultural practice of growing one or more vegetable crops on a large scale for shipment to distant markets.

7 "Coachella Valley Water Management Plan," Coachella Valley Water District, November 2002.

8 Coachella Valley Water District 2014 Crop Report.

9 Summary of County Agricultural Commissioners' Reports, Gross Values by Commodity Groups, California 1995-2000, as compiled and tabulated by the Southern California Association of Governments (SCAG). Does not include all crops/products produced.

2.4.5 Existing Conditions

Agriculture has been a major source of economic activity in the Coachella Valley since the turn of the 20th century. The Coachella Valley provides excellent soils, flat topography, abundant sunshine, and available water resources, making it a contributor to the State's agricultural production. The date palm was introduced to the Coachella Valley, and has historically been a staple crop for the region. Other crops, such as grapes, citrus, vegetables, turf production and ornamentals have also been farmed in the region. Land available for agricultural production continues to be threatened by increased urbanization.[10]

The project site is located in the eastern Coachella Valley, which is one of California's most important agricultural production areas and contains a substantial amount of farmland. The Project planning area is located within the Coachella city limits and in the unincorporated community of Thermal. Farmlands in this area are designated as "*Urban and Built-up Land*", "*Prime Farmland*" and "*Other Land*" (CA Department of Conservation). The subject channel is designated as "Other Land" by the Riverside County Farmland Mapping and Monitoring Program (2016).

Existing Agricultural Land Uses in the Planning Area

The CVSC planning area is partially bounded by farmlands both fallow and in active cultivation. Between Avenue 54 and Airport Boulevard (Ave 56) the west side of the channel project area is bounded by State Highway 86 and intervening lands designated "*Other Land*" with farmlands designated as "*Prime Farmland*" occurring farther to the east. Most of the lands to the west are designated as "*Urban and Built-Up Lands*", with a small area designated as "*Prime Farmland*" none of which is currently in cultivation (as of spring 2018).

South of Airport Boulevard, active and fallow farmlands bound the project on both the east and west sides of the channel. Small-scale cultivation occurs on the east, while on the west agricultural lands between State Highway 111 and the channel are limited in size and are in a fallow state. West of Highway 111 larger scale agriculture includes ornamental landscape materials, and date palms and citrus are dominant.

Williamson Act Lands

Lands under the Williamson Act, or California Land Conservation Act, are agricultural lands that allow special tax assessment. These lands are taxed on the basis of agricultural production rather than market value. The goal of the Williamson Act is to protect agricultural land from being sold for development. There are no lands under Williamson Act contracts that would be impacted by the project.

2.4.6 Project Impacts

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

Less than Significant with Mitigation. Construction of the Proposed Project and associated utility relocations will have a limited impact on designated agricultural lands and/or lands that are in cultivation due to the proximity of agricultural lands. The potential impact is limited to a 0.34±-acres parcel located on the east and west sides and outside of the channel and upstream of the UPRR bridges, where an existing CVWD irrigation lateral is to be relocated as a part of the channel improvement project (see Exhibit 1-6A). Once the lateral has been relocated the excavation and staging areas will be returned to their original state.

[10] California Farmland Conversion Report 2015, prepared by the California Natural Resources Agency/Department of Conservation. September 2015.

The agricultural lands that could be impacted are partially cultivated with date palm interspersed with fallow lands. Additional or altered easements may be required of the Proposed Project; however, disturbance to existing agricultural activities at this location will be limited, temporary and less than significant with implementation of mitigation measure AG-1 Irrigation Lateral Relocation.

Utility Projects
Relocation of the CVWD irrigation lateral will have a temporary impact on agricultural lands currently cultivated with date palms while the underground pipeline is relocated; however, these impacts will be mitigated to less than significant levels with implementation of mitigation measure AG-1.

Relocation impacts associated with the SCG gas line and IID power poles will not occur within agricultural lands. Impacts will be limited to existing service roads, the channel, and street rights-of-way. Therefore, there will be no impact to agricultural farmlands.

b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract.

No Impact. Zoning designations are based upon General Plan land use designations and are intended to be consistent. Within the City of Coachella and on the west side of the channel, lands adjoining the CVSC project area are mostly designated *Industrial*, which reflects the current uses in this area, with a small portion also designated *Public Facilities* reflecting the municipal wastewater treatment plant at this location. All of the City lands on the eastside of the channel are designated *Industrial*. Therefore, the Proposed project does not conflict with planned land uses in the City of Coachella.

Within unincorporated County lands, those adjoining the CVSC project area are designated a mix of *Light Industrial*, *Low-Density Residential*, and *Agriculture*. The Proposed Project will occur almost entirely within the existing CVWD channel rights-of-way and only a small area of agricultural lands on the east side of the channel, approximately 0.34± acres, may be impacted. The Proposed Project will require a relocation of an existing CVWD irrigation lateral that may affect a few scattered date palms but will not have a significant impact on agricultural activities on these lands. The Proposed Project will not conflict with agriculturally designated lands in either the City of Coachella or Riverside County.

The Williamson Act program is voluntary, and landowners enter contracts with initial term of up to ten years. Based on the acreage currently in non-renewal, the general trend in the region has been to remove lands from Williamson Act contracts. None of the agricultural lands in the planning area are under a Williamson Act contract. The Proposed Project will have no impact on any lands under a Williamson Act contract.

Utility Projects
As previously discussed above, none of the agricultural lands in the planning area are under a Williamson Act contract. Therefore, the proposed utility relocation projects will have no impact on any lands under a Williamson Act contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact: See response to Section 2.4.5b, above.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The proposed CVSC improvement project will provide thousands of acres south of Avenue 54, including extensive agricultural lands, with protection from flooding in a 100-year storm event. The planned channel improvements will not result in the conversion of any forest or agricultural lands to non-agricultural/forest lands, nor will it have the effect of inducing such conversions.

Utility Projects
The relocation of the irrigation lateral, SCG gas line, and IID poles will not result in the conversion of any forest or agricultural lands to non-agricultural/forest lands, nor will it have the effect of inducing such conversions.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact: See response to Section 2.4.5d, above.

2.4.7 Mitigation Measures

The Proposed Project will not directly require conversion of farmland to non-agricultural uses, and no new indirect pressures are created by the project that might encourage agricultural landowners to sell or develop agricultural lands. Nonetheless, limited impacts to a few date palms could result from the relocation of an irrigation lateral, the potential impacts from loss of 0.34-acre palm grove would be minimized by the implementation of AG-1.

AG-1: Irrigation Lateral Relocation
Prior to the selection of the final route for the relocation of CVWD's irrigation lateral 99.8, the alignment, construction activities, and timeframe shall be refined in a manner that minimizes impacts to the 0.34 acre of agricultural assets to the greatest extent practicable.

2.4.8 Significance After Mitigation

Construction nor the operation of the improved stormwater channel and utility relocations will have a significant impact on important agricultural lands (Prime Farmland) or resources in the planning area. The project will result in a less than significant conversion of prime farmlands, it will not conflict with local land use/zoning or any Williamson Act contract, will have no effect on forestlands, and will not involve other changes that due to their location or nature would result in significant conversion of agricultural lands. Residual impact to agricultural resources would be negligible.

2.4.9 Cumulative Impacts

There are no forest resources in the project study area. Therefore, the channel improvement project and associated utility projects would not contribute to any cumulative projects related to forest resources.

The geographic scope for cumulative impact analysis related to agricultural resources consists of Riverside County and all agricultural land located within the CVWD service area. Although the relocation of the aforementioned irrigation lateral could affect a very limited amount of land in cultivation, this impact is expected to amount to less than one acre. Therefore, no agricultural land conversion would occur, and the Proposed Project would not contribute to any cumulatively considerable impacts related to agricultural resources.

2.5 Air Quality

2.5.1 Introduction

The following section describes the existing air quality in the Coachella Valley, and analyzes the potential impacts associated with the CVSC improvement project. A variety of local and regional data and information, ranging from research and analysis conducted for the project site, to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects on air quality. An Air Quality and Greenhouse Gas Report was prepared for the project and is provided in Appendix B of this EIR.

2.5.2 Thresholds of Significance

The following significant thresholds or criteria are not strictly those recommended in §15064.7 of the CEQA Guidelines; rather, they are derived from Appendix G of the Guidelines, and are used to determine if and to what extent a project may have a potentially significant impact on air quality. The project would have a significant effect to air quality if the Proposed Project would:

a) Conflict with or obstruct implementation of the applicable air quality plan.

b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).

d) Expose sensitive receptors to substantial pollutant concentrations.

e) Create objectionable odors affecting a substantial number of people.

2.5.3 Regulatory Framework

Federal and state agencies have adopted air quality standards for a variety of pollutants. In 1971, the USEPA established the National Ambient Air Quality Standards (NAAQS) for managing criteria pollutants. The California Clean Air Act (CCAA) became effective on January 1, 1989 and mandated health-based air quality standards at the state level. The California Air Resources Board (CARB) is responsible for enforcing state standards, which are generally more stringent than federal standards. One of the ways standards are applied is through State Implementation Plans (SIP), which are prepared to assist regional air quality management districts in meeting the federal and state ambient air quality standards in accordance with the deadlines specified in the Federal Clean Air Act (CAA) and emission reduction targets of the California Clean Air Act.

Regional and local agencies have also assumed some responsibility for assuring that state and federal air quality standards are achieved. For the Coachella Valley, the South Coast Air Quality Management District (SCAQMD) is responsible for establishing air quality measurement criteria and relevant management policies for the Salton Sea Air Basin (SSAB).

The 2003 PM_{10} Coachella Valley State Implementation Plan (CVSIP) was jointly developed by the SCAQMD, Coachella Valley Association of Governments (CVAG) and its member cities and was approved by the USEPA. The 2003 PM_{10} CVSIP updated the 1990 plan, which was drafted as a requirement of the federal Clean Air Act to demonstrate expeditious attainment of PM_{10} standards.[11] On April 18, 2003, USEPA approved the updated CVSIP.

[11] 2003 Coachella Valley PM_{10} State Implementation Plan, August 1, 2003.

The SSAB, including the Coachella Valley, is subject to the provisions of the SCAQMD Rule Book,[12] which sets forth policies and other measures designed to meet federal and state ambient air quality standards. These rules, along with SCAQMD's 2016 Air Quality Management Plan are intended to satisfy the planning requirements of both the federal and state Clean Air Acts. The SCAQMD also monitors daily pollutant levels and meteorological conditions throughout the District.

Air Quality Standards

Federal and state air quality standards established for specific pollutants, which are called "criteria pollutants," are designed to protect the general population and especially that segment of the population that is most susceptible to respiratory distress or infection, including the elderly, children, asthmatics, or those weak from disease or illness. The following air pollutants are collectively known as criteria air pollutants and are defined as those pollutants for which established air quality standards have been adopted by federal and state governments:

Ozone (O_3) is a pungent, colorless, toxic gas, and a component of photochemical smog. It is formed when byproducts of combustion react in the presence of ultraviolet sunlight. This process takes place in the atmosphere where oxides of nitrogen combine with reactive organic gases, such as hydrocarbons. Exposure to ozone can result in diminished breathing capacity, increased sensitivity to infections, and inflammation of the lung tissue. Children and people with pre-existing lung disease are most susceptible to the effects of ozone.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas and a byproduct from the partial combustion of fossil fuels, most notably from automobiles and other motor vehicles. Carbon monoxide passes through the lungs directly into the blood stream and reduces the amount of oxygen reaching the vital organs, such as the heart, brain and tissues. In high concentrations, carbon monoxide can contribute to the development of heart disease, anemia, and impaired psychological behavior. Individuals that have heart and blood diseases, smokers, babies in utero, and people with chronic hypoxemia are most susceptible to the effects of CO. The SSAB is in non-attainment for the federal 8-hour O_3 standard.

Nitrogen Oxide (NO_x) includes Nitric oxide (NO) and Nitrogen dioxide (NO_2), which are the primary oxides of nitrogen, and combined are known as nitrogen oxides. These oxides are produced at high temperatures during combustion as byproducts of motor vehicles, power plants, and off-road equipment. NOx contributes to the formation of ozone serving as the primary receptor of ultraviolet light and initiating the photochemical reaction. Short-term exposure to nitrogen dioxide can result in airway constriction, diminished lung capacity, and is highly toxic by inhalation. Populations living near roadways are more likely to experience effects of nitrogen oxides due to elevated exposure to motor vehicle exhaust. The SSAB is in attainment for NO_2.

Sulfur Dioxide (SO_2) results from the combustion of high-sulfur content fuels, such as coal and petroleum. Sources include motor vehicle fuel combustion, chemical manufacturing plants, and sulfur recovery plants. Sulfur dioxide is a colorless, pungent, extremely irritating gas that can cause airway constriction and severe breathing difficulties in asthmatics. High levels of exposure can cause fluid accumulation in the lungs, damage to lung tissue, and sloughing off of cells lining the respiratory tract. The SSAB is in attainment for SO_2.

Particulate Matter (PM_{10} and $PM_{2.5}$) consist of fine suspended particles of ten microns or smaller in diameter, and are the byproducts of road dust, sand, diesel soot, windstorms, and the abrasion of tires and brakes. The elderly, children and adults with pre-existing respiratory or cardiovascular disease are most susceptible to the effects of PM. Elevated PM_{10} and $PM_{2.5}$ levels are also associated with an increase in mortality rates, respiratory infections, occurrences and severity of asthma attacks and hospital admissions. The SSAB is a non- attainment area for PM_{10} and is classified as attainment/unclassifiable for $PM_{2.5}$.

[12] South Coast Air Quality Management District Rules and Regulations, Adopted February 4, 1977.

Volatile Organic Compounds (VOC) are also known as Reactive Organic Gas (ROG). This class of pollutants has no state or federal ambient air quality standards and is not classified as criteria pollutants; however, they are regulated because they are responsible for contributing to the formation of ozone. They also contribute to higher PM_{10} levels because they transform into organic aerosols when released into the atmosphere. VOCs pose a health threat when people are exposed to high concentrations. Benzene, for example, is a hydrogen component of VOC emissions known to be a carcinogen.

Lead (Pb) occurs in the atmosphere as particulate matter resulting from the manufacturing of batteries, paint, ink, and ammunition. Exposure to lead can result in anemia, kidney disease, gastrointestinal dysfunction, and neuromuscular and neurological disorders. Babies in utero, infants, and children are especially susceptible to health risks associated with exposure to lead by impacting the central nervous system and cause learning disorders. The SSAB is in attainment for lead.

The air quality of a particular locale is considered to be in attainment if the measured ambient air pollutant levels for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, and PM_{10} and $PM_{2.5}$ are not exceeded and all other standards are not equaled or exceeded at any time in any consecutive three-year period. Attainment also assumes the national standards (other than O_3, PM_{10}, and those based on annual averages or arithmetic mean) are not exceeded more than once per year. The O_3 standard is in attainment when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

The following table shows the state and national ambient air quality standards for criteria pollutants.

Table 2-1
State and National Ambient Air Quality Standards

Pollutant	State Standards		National Standards**	
	Averaging Time	Concentration	Averaging Time	Concentration
Ozone (O_3)	1-hour 8-hour	0.09 ppm 0.07 ppm	1-hour 8-hour	 0.070 ppm
Carbon Monoxide (CO)	1-hour 8-hour	20.0 ppm 9.0 ppm	1-hour 8-hour	35.0 ppm 9.0 ppm
Nitrogen Dioxide (NO_2)	1-hour AAM	0.18 ppm 0.030 ppm	 AAM	0.10 ppm* 0.053 ppm
Sulfur Dioxide (SO_2)	1-hour 24-hour	0.25 ppm 0.04 ppm	1 & 24 hour AAM	.075ppm**
Particulate Matter (PM_{10})	24-hour AAM	50 µg/m^3 20 µg/m^3	24-hour AAM	150 µg/m^3
Particulate Matter ($PM_{2.5}$)	AAM 24-hour	12 µg/m^3 35 µg/m^3	AAM 24-hour	12 µg/m^3 35 µg/m^3
Lead	30 day Avg.	1.5 µg/m^3	3 month Avg.	0.15 µg/m^3
Visibility Reducing Particles	8-hour	No standard	No federal Standard	No federal Standard
Sulfates	24-hour	25µg/m^3	No federal Standard	No federal Standard
Hydrogen Sulfide	1-hour	0.03 ppm	No federal Standard	No federal Standard
Vinyl Chloride	24-hour	0.01 ppm	No federal Standard	No federal Standard

Source: California Air Resources Board, 5/4/16.
Notes: ppm = parts per million; ppb= parts per billion; µg/ m^3 = micrograms per cubic meter of air;
AAM = Annual Arithmetic Mean; * Note that this standard became effective as of January 22, 2010.
** Final rule signed June 2, 2010, effective as of August 23, 2010

Regional Air Quality Monitoring

The South Coast Air Quality Management District operates and maintains three air quality monitoring stations within Source Receptor Area (SRA) 30 (Coachella Valley). SR 30 includes the Indio, Palm Springs and Mecca monitoring stations, which have been operational since 1985, 1987, and 2013, respectively. Both Indio and Palm Springs stations monitor for ozone, PM_{10} and $PM_{2.5}$. The Mecca station monitors for PM_{10}.

The following tables show the maximum concentration and number of days annual that state and federal standards for ozone and particulate matter (PM_{10} and $PM_{2.5}$) were exceeded between 2010 and 2017 in the Coachella Valley.

Table 2-2 shows that the federal 24-hour standard for PM_{10} was exceeded more frequently at the Indio station between 2010 and 2017. Limited 24-hour state data has been provided from all three stations the past several years, however it is assumed that PM_{10} levels continue to exceed state standards until otherwise reported.

Table 2-2
PM_{10} Monitoring Data for the Coachella Valley

Monitoring Station	Year	Maximum Concentration (µg/m³/24 hours) **	No. Days Exceeding 24-hr. Standards		Annual Average (µg/m³)
			Federal[1]	State[2]	AAM[3]
Palm Springs	2010	144.8	0.0	0.0	19.4
	2011	396.9	2.0	0.0	21.7
	2012	143.4	0.0	0.0	19.9
	2013	185.8	1.0	13.1	23.1
	2014	313.8	1.1	*	25.4
	2015	199.0	1.0	*	20.9
	2016	447.2	1.1	*	23.1
	2017	105.6	0.0	*	22.1
Indio	2010	107.0	0.0	23.9	28.8
	2011	375.9	2.0	18.6	32.6
	2012	270.6	N/A	43.2	33.6
	2013	255.2	3.0	85.2	37.5
	2014	322.3	6.1	94.9	43.5
	2015	381.0	*	*	44.0
	2016	393.2	*	*	37.0
	2017	198.6	1.0	*	34.8
Mecca	2014	*	*	*	*
	2015	306.4	5.0	*	44.2
	2016	468.9	*	*	41.1
	2017	477.6	*	81.5	47.5

Source: Annual air quality site monitoring reports per ARB. http://www.arb.ca.gov/adam/ Accessed January 2018.
1 = > 150 µg/m3 in 24 hour period; 2 = > 50 µg/m3 in 24 hour period; 3 Federal Annual Average Standard AAM > 50µg/m3 revoked December 17, 2006. State standard is AAM > 20µg/m³
4 State Annual Average Standard = AGM > 20µg/m3
* There are insufficient (or no) data available to determine the value.
** Data may include exceptional events.

Table 2-3 shows that both the federal 24 hour $PM_{2.5}$ standard and the AAM state standard of >12 µg/m³ have not been exceeded at either monitoring station from 2010 to 2017.

Table 2-3
$PM_{2.5}$ Monitoring Data for the Coachella Valley

Monitoring Station	Year	Max Concentration ($\mu g/m^3$/24 hours)	No. Days Exceeding 24-hr. Federal[a] Standards	Annual Average ($\mu g/m^3$) AAM [b, c]
Palm Springs	2010	12.8	0.0	5.9
	2011	26.3	0.0	6.0
	2012	15.5	0.0	6.5
	2013	18.5	0.0	6.5
	2014	15.5	**	**
	2015	22.7	**	**
	2016	14.7	0	5.4
	2017	14.5	0	6.0
Indio	2010	16.0	0.0	6.8
	2011	35.4	0.0	7.2
	2012	18.4	0.0	7.6
	2013	25.8	0.0	8.3
	2014	18.3	**	**
	2015	24.6	**	**
	2016	25.8	0	7.6
	2017	18.8	*	*

Source: Annual air quality site monitoring reports, ARB. http://www.arb.ca.gov/adam/ Accessed January 2018.
a = > 35 $\mu g/m^3$ in 24 hour period, Federal standard as of December 17, 2006.
b Federal Annual Average Standard = AAM > 15$\mu g/m^3$
c State Annual Average Standard = AAM > 12$\mu g/m^3$ as of July 5, 2003.
** There was insufficient (or no) data available to determine the value.

Table 2-4 shows that the Palm Springs monitoring station exceeds the 8-hour federal and state ozone standards more frequently than the Indio site. This exceedance is attributable to the Palm Springs station's location closer to the San Gorgonio Pass where ozone is imported into the SSAB from air basins to the west.

Table 2-4
Ozone Monitoring Data for the Coachella Valley

Monitoring Station	Year	Max. Concentration		No. Days Standard Exceeded		
				Federal[1]	State[2]	
		1 Hour ppm	8 Hour ppm	8 Hour	1 Hour	8 Hour
Palm Springs	2010	0.114	0.099	76	20	78
	2011	0.124	0.099	66	21	69
	2012	0.126	0.101	76	17	79
	2013	0.113	0.104	76	10	82
	2014	0.108	0.093	55	9	61
	2015	0.102	0.092	47	3	51
	2016	0.103	0.092	46	6	48
	2017	0.113	0.097	57	18	63
Indio	2010	0.100	0.087	45	6	45
	2011	0.099	0.090	40	3	42
	2012	0.102	0.089	43	2	45
	2013	0.105	0.087	35	2	38
	2014	0.095	0.091	24	2	30
	2015	0.093	0.085	11	0	12
	2016	0.099	0.089	27	3	29
	2017	0.107	0.093	44	8	47

Source: ARB Annual Air Quality Data Tables. http://www.arb.ca.gov/adam/ Accessed January 2018.
1 = > 0.070 parts per million for the 8 hour standard.
2 = > 0.09 and 0.070 parts per million in 1 hour and 8 hour respectively.

Criteria Air Pollutant Summary

Air quality in the SSAB exceeds state and federal standards for fugitive dust (PM_{10}) and ozone (O_3), and is in attainment/unclassified for $PM_{2.5}$. Ambient air quality in the SSAB, including the project area, does not exceed state and federal standards for carbon monoxide, nitrogen dioxides, sulfur dioxide, lead, sulfates, hydrogen sulfide, or Vinyl Chloride. The following table shows the basin's federal and state attainment status for criteria pollutants.

Table 2-5
Salton Sea Air Basin Designation Status

Criteria Pollutants	Federal Designation	State Designation
Ozone - 8 hour standard	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
PM_{10}	Nonattainment	Nonattainment
$PM_{2.5}$	Unclassified/Attainment	Unclassified/Attainment
Source: CARB Air Quality Planning Branch, June 2013. This information has been cross-checked with the U.S. EPA Green Book in January 2018, last updated October 18, 2017.		

2.5.4 Environmental Setting

Air pollution is any chemical, physical or biological process that modifies the chemistry and other characteristics of the atmosphere. The primary contributor to air pollution is the production of byproducts from the combustion of fossil fuels containing a number air polluting substances. These emissions are responsible for the poor air quality that is evident in industrial centers and elsewhere worldwide.

Topographic or geomorphic conditions in the Coachella Valley have had a profound effect on and are an integral part of climate and the diverse environments encompassed in the Coachella Valley. The mountains create a "rain shadow", effectively isolating the valley from the prevailing cooler and wetter marine conditions along the coast, and creating a dry, subtropical desert environment. The area is subject to daily temperature extremes ranging from approximately 30°F to 80°F in winter and summer daytime temperatures that range between 75°F and 120°F. In the surrounding mountains, temperatures are generally cooler than those on the valley floor, with an approximate 5°F decrease per 1,000 feet of elevation increase. In general, the Valley floor is characterized by low humidity and rainfall, and a high percentage of days of sunshine.

Winter brings the majority of rainfall, although occasional intense storms occur in late summer or early fall that can make substantial contributions to annual rainfall. These are sometimes intense storms that result in rainfall on surrounding mountain slopes rather than on the Valley floor. Mean annual rainfall averages between 2 to 4 inches on the upper desert floor and about fifteen (15) inches in the nearby mountains.

When the desert floor heats up and the Valley air mass rises, the resulting thermal low pressure draws in cooler, denser marine air from the west that is funneled through the narrow San Gorgonio Pass. This effect produces strong and sustained winds, which constitute a major influence on the Valley's climate. As they pass through the valley, these winds often lift and transport large quantities of sand and dust, impacting visibility and air quality.

Air inversions can become a layer of stagnant air is trapped near the ground that is loaded with pollutants from motor vehicles and other sources. Inversions occasionally occur in the Coachella Valley due to local geological and climatic conditions. Inversions create conditions of haziness caused by suspended water vapor, dust, and a variety of chemical aerosols. Due to local climactic conditions, inversion layers generally form 6,000 to 8,000 feet above the desert floor.

The Coachella Valley, including the project planning area, is located within the Salton Sea Air Basin (SSAB), which is monitored and regulated by the South Coast Air Quality Management District (SCAQMD). Monitoring stations within the SSAB are located in Indio and Palm Springs and have provided a record of air quality conditions for the region since 1985 and 1987, respectively. Historically, air quality in the SSAB has not exceeded state or federal standards for carbon monoxide (CO_2), nitrogen dioxides (NO_2), sulfur dioxide (SO_2), reactive organic gases (ROG) or lead (Pb).

Pollutants of primary concern in the Coachella Valley are ozone (O_3) and particulate matter (PM_{10}). The SSAB is in non-attainment for ozone (O_3) and PM_{10}, and is unclassifiable for $PM_{2.5}$. For national area designations, the Coachella Valley is in non-attainment (Severe-15) for the federal 8-hour ozone standard, and serious non-attainment for the federal 24-hour PM_{10} standard.

State standards for the Coachella Valley similarly designate a non-attainment status for ozone and PM_{10}. These pollutants pose the most significant threat to public health and may result in diminished breathing capacity, increased sensitivity to lung infections, inflammation of the lung tissue, and other respiratory distress.

2.5.5 Existing Conditions

The proposed CVSC improvement project is located within the Salton Sea Air Basin (SSAB) and is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). Air quality in the Salton Sea Air Basin has been impacted by emissions associated with increased development, population growth, and vehicle emissions. Although air pollution is emitted locally from various sources, some of the degradation of air quality within the Salton Sea Air Basin can be attributed to sources tributary to, but located outside of the basin. In the project area, air quality is regulated by the SCAQMD, as well as federal and state policy.

Meteorological conditions of the Coachella Valley portion of the SSAB, including the project area, are largely attributable to the low desert geographic setting and the mountains surrounding the region that isolate the Coachella Valley from moderating coastal influences and create a hot and dry low-lying desert condition. As the desert heats up, a large area of thermal low pressure develops, which draws dense, cooler coastal air through the narrow San Gorgonio Pass and into the Valley, generating strong winds that cross the most active fluvial (water-related) erosion zones in the Valley. These strong winds sweep up, suspend and transport large quantities of sand and dust, reducing visibility, damaging property, and constituting a significant health threat. The region is also subject to seasonal northeasterly Santa Ana winds that are associated with high pressure over Nevada and the four corners region.

Air inversions, where a layer of stagnant air is trapped near the ground and is loaded with pollutants from motor vehicles and other sources, occasionally occur in the Coachella Valley due to local geological and climatic conditions. Inversions create conditions of haziness caused by suspended water vapor, dust, and a variety of chemical aerosols. Due to local climactic conditions, inversion layers generally from 6,000 to 8,000 feet above the desert floor.

2.5.6 Project Impacts

The CVSC improvement project will involve extensive channel grading, excavation and hauling of excess cut (of earthen material) associated with increasing channel capacity in the subject reach of the channel. Construction activities will also include extensive channel slope and bottom lining with concrete.

This analysis also addresses potential impacts associated with the limited ground disturbance outside the channel associated with the relocation of several utilities, including a CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles (see Exhibits 1-6A through 1-6D). For air quality analysis purposes, construction of the Proposed Project is anticipated to occur over a one-year period starting in 2020 with buildout in 2021.

Construction-related emissions that could affect air quality are temporary and will end once construction is complete. Construction emissions are assumed to be continuous across the one-year buildout period. This approach results in conservative projections of maximum daily emissions with potential for multiple segments to be under construction at one time.

a) Conflict with or obstruct implementation of the applicable air quality plan.

Less than Significant with Mitigation. The Proposed Project is located within the SSAB, which is governed by the SCAQMD. SCAQMD is responsible for monitoring criteria air pollutant concentrations and establishing management policies for the SSAB. All development within the SSAB, including the Proposed Project, is subject to the current SCAQMD Air Quality Management Plan and 2003 PM_{10} Coachella Valley State Implementation Plan. These comprehensive plans establish control strategies and guidance on regional emission reductions for air pollutants.

The construction of project channel improvements and relocation of utility facilities discussed in Section 1.10 would be implemented in accordance with all applicable air quality management plans to ensure impacts to air quality are reduced to the greatest extent possible. Actions include, but are not limited to the preparation of a standard dust control management plan in compliance with the CVSIP, and the enforcement of mitigation measures in the event that criteria pollutant thresholds are exceeded during construction activities.

Although construction of the Proposed Project would not prevent the SCAQMD from implementing actions set forth in the air quality plans, thus resulting in a less than significant impact under this threshold (a), the project will result in significant impacts associated with criteria pollutants. As demonstrated below (under threshold (b)), and Section 2.5.8 Significance after Mitigation, the CVSC improvement project will not exceed the SCAQMD thresholds of significance after mitigation. Therefore, the Proposed Project will result in a less than significant impact after mitigation.

b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation.

Less than Significant with Mitigation: The CVSC improvement project will result in the direct and indirect generation and emission of air pollutants during project construction, and to a very limited degree during ongoing operations and maintenance. Criteria air pollutant emissions from earthwork, hauling and construction will be temporary.

Due to the excess cut associated with the project, construction will require an average of 108 hauling trips per day to export channel materials and to import concrete, steel and other construction materials. It is estimated that the Proposed Project will require approximately 54,000 cubic yards of concrete (import), 26,000 cubic yards of aggregate base, 4,500 tons of reinforcing steel (import), and result in an export of 370,000 cubic yards of surplus soil. It is assumed that each haul round trip[13] will be approximately 6-10 miles[14] based upon an average haul load of 20 tons (or 16 cubic yards)[15].

[13] CalEEMod generates the number of "haul trips" and associated hauling emissions based on the quantity/weight of material being hauled and the distance to the haul site. The number of haul trips generated in CalEEMod provides an equivelent emissions projection based on haul load assumptions programmed into the software. Based on project haul data, CalEEMod assumes that the project will require 46,250 material haul trips over a 430 day period (site preparation and grading), resulting in an average of 108 haul trips per day.

[14] Excess soil will be exported to CVWD WRP-4 (3.5 miles from project site), concrete, aggragate and other construction materials will be delivered from suppliers that are less than six miles from the project site.

[15] The air emission modeling software, CalEEMod, assumes each haul load is approximately 20 tons. This assumption is programmed into the model.

Construction Emission Impacts

The Proposed Project length is approximately two miles and will involve extensive excavation and grading along this entire reach, the removal or major modification to the Thermal drop structure, soil over-excavation and re-compaction, importing aggregate base, and installation of rebar and concrete lining and related facilities. The Proposed Project would result in a total project area of 116± acres of possible disturbance. The following table provides unmitigated construction-related air quality impacts for project construction.

Table 2-6
Unmitigated Construction Emissions Summary
Maximum Daily Emissions (lbs./day)

	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Max. Daily Emissions	239.29	369.20	33.51	0.53	20.57	15.87
SCAQMD Threshold*	**550.00**	**100.00**	**75.00**	**150.00**	**150.00**	**55.00**
Exceeds Threshold	**No**	**Yes**	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.2. See Appendix B of this DEIR for detailed tables. Value shown represents the average unmitigated emissions from summer and winter.
* Source: "SCAQMD Air Quality Significance Thresholds" prepared by SCAQMD, March 2015.

As shown in the table above, SCAQMD daily thresholds for CO, ROG, SOx, PM_{10} and $PM_{2.5}$ will not be exceeded during construction of any phase of project development. However, NOx emissions have the potential to exceed SCAQMD thresholds due to simultaneous use of construction equipment and material hauling. To reduce NOx emissions and overall project impacts, mitigation measures AQ-1 through AQ-3 are provided in Section 2.5.7. Results of the implementation of these measures and mitigated conditions are provided in section 2.5.8 below.

Operational Emission Impacts

There will be no new operational impacts associated with the Proposed Project. Existing on-going channel maintenance, including periodic vegetation removal and other CVWD services, will continue after project completion. There will be no impacts.

Utility Projects

For analysis purposes, impacts associated with relocation of the irrigation lateral, SCG gas pipeline, and IID power poles were included in the overall Project impact analysis, above. As shown in Table 2-6, impacts associated with construction emissions would potentially be significant due to high NOx emissions. To reduce NOx emissions and overall project impacts, mitigation measures AQ-1 through AQ-3 are provided in Section 2.5.7. As shown in Section 2.5.8, impacts would be less than significant after mitigation.

There will be no new operational impacts associated with the utility relocations. Existing on-going service maintenance to the lateral, gas lines, and power poles will continue after project completion. There will be no operational impacts.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).

Less than Significant with Mitigation. See Section 2.5.9 Cumulative Impacts, below.

d) Expose sensitive receptors to substantial pollutant concentrations.

Less than Significant: The purpose of analyzing Localized Significance Thresholds (LST) is to determine whether a project may generate significant adverse localized air quality impacts in relation to the nearest exposed individual, or sensitive receptor. Land uses that are air quality sensitive receptors include, but are not limited to, schools, churches, residences, hospitals, day care facilities, and elderly care facilities. Sensitive receptors in proximity to the Proposed Project include single-family homes and mobile homes. Neither schools nor parks or other public open space are expected to be impacted by the Proposed Project.

Use of LSTs by a local government is voluntary and are designed for projects that are less than or equal to five acres. The maximum area of disturbance associated with buildout of the Proposed Project is approximately 116± acres and it is assumed that buildout would occur over the course of one year. Although the total project area is greater than five-acres, the area of daily disturbance (for purposes of LST analysis only) is limited to five acres or less per day at any given location.[16] As such, the five-acre look up table is appropriate under the SCAQMD's methodology to screen for potential localized air quality impacts.[17]

The Mass Rate Look-Up tables for LSTs were used to determine if the Proposed Project would have the potential to generate significant adverse localized air quality impacts during construction. The LST for Source Receptor Area (SRA) 30 (Coachella Valley) was used to determine LST emission thresholds. The distance from the emission source and the maximum daily site disturbance also determines emission thresholds. For analysis purposes, the worst-case scenario of a sensitive receptor being within 25 meters was used and is representative of the residential development in proximity of the planning area.

Results show that LST thresholds are not expected to be exceeded for any of the four criteria pollutants, below. Therefore, impacts to sensitive receptors will be less than significant.

Table 2-7
Unmitigated Localized Significance Thresholds
25 Meters, 5 Acres
(lbs. per day)

	CO	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Max. Onsite Emissions[1]	123.06	174.87	8.72	7.52
LST	**2,292**	**304**	**14**	**8**
Exceed?	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.2 See Appendix B of this DEIR. Emissions show the highest emitting day for all emissions generated onsite during construction.
1. Maximum onsite emissions occur during the grading period in 2020.

16 The equipment specific grading rates are based on the SCAQMD's Fact Sheet for Applying CalEEMod to Localized Significance Thresholds guidance document. Per SCAQMD's guidance, the identified equipment is used to determine the maximum daily soil disturbance area for the purposes of evaluating localized construction impacts and is not an exhaustive list of all equipment that would be used during project construction. Additionally, the acreage identified in this table is used for the purposes of identifying a conservative Localized Significance Threshold (i.e., smaller disturbed areas have lower Localized Significance Thresholds) and does not represent a daily limit on the grading allowed on the site. In summary, then, the LST methodology focuses on the equipment that may be operated and acreage that may be disturbed in areas immediate proximate to potential sensitive receptors, even if other equipment may be operated or other acreage may be disturbed in areas that are farther away from the sensitive receptor.

17 South Coast AQMD, "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds."

Utility Projects
For analysis purposes, impacts associated with relocation of the irrigation lateral, SCG gas line, and IID power poles were included in the overall Project impact analysis, above. As shown in Table 2-7, impacts to sensitive receptors would be less than significant.

e) Create objectionable odors affecting a substantial number of people.

Less than Significant: The Proposed Project is not expected to generate significant objectionable odors during any phase of construction. The Proposed Project has the potential to result in short-term odors associated with excavation and grading, pouring of concrete and other construction activities. However, construction-related odors would be quickly dispersed below detectable levels and as distance from the construction area increases. Therefore, impacts from objectionable odors are expected to be less than significant. There will be no maintenance-related impacts associated with objectionable odors.

Utility Projects
The relocation of the irrigation lateral, SCG gas line, and IID power poles have the potential to result in short-term odors associated with operation of heavy equipment and other construction activities. However, construction-related odors would be quickly dispersed below detectable levels and as distance from the construction area increases. Therefore, impacts from objectionable odors are expected to be less than significant. There will be no maintenance-related impacts associated with objectionable odors.

2.5.7 Mitigation Measures

The following mitigation measures are required during construction to reduce air quality impacts to less than significant levels.

AQ-1 NOx Reduction: Fuels
To reduce particulate matter and NOx emissions construction equipment shall utilize aqueous diesel fuels, diesel particulate filters and diesel oxidation catalyst with a minimum 30% reduction rating during all construction activities.

AQ-2 Dust Control Plan: SCAQMD Rule 403.1
SCAQMD Rule 403 (403.1 specific to the Coachella Valley): A Dust Control Plan shall be prepared and implemented by all contractors during all construction activities, including ground disturbance, grubbing, grading, and materials import and export. Said plan shall include but not be limited to the following best management practices:

- Treated and stabilized soil where activity will cease for at least four consecutive days;
- All construction grading operations and earth moving operations shall cease when winds exceed 25 miles per hour;
- Water site and equipment morning and evening and during all earth-moving operations;
- Operate street-sweepers on impacted paved roads adjacent to site;
- Establish and strictly enforce limits of grading for each phase of construction;
- Wash off trucks as they leave the project site to control fugitive dust emissions
- Cover all transported loads of soils, wet materials prior to transport, provide freeboard (space from the top of the material to the top of the truck) to reduce PM_{10} and deposition of particulate matter during transportation
- Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.

AQ-3 NOx Reduction: Engines
To reduce NOx emissions, construction equipment shall be equipped with Tier 4 engines.

2.5.8 Significance After Mitigation

b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation.

Less than Significant: As shown in the table below, adherence to the above mitigation measures would reduce NOx emissions below SCAQMD thresholds. Therefore, impacts from criteria pollutants during construction of the Project will be less than significant.

Table 2-8
Mitigated Construction Emissions Summary
Maximum Daily Emissions (lbs./day)

	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Max. Daily Emissions	274.40	98.21	12.27	0.53	9.51	4.29
SCAQMD Threshold*	**550.00**	**100.00**	**75.00**	**150.00**	**150.00**	**55.00**
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.2. See Appendix B of this DEIR for detailed tables. Value shown represents the average mitigated emissions from summer and winter.
* Source: "SCAQMD Air Quality Significance Thresholds" prepared by South Coast Air Quality Management District, March 2015.

2.5.9 Cumulative Impacts

Cumulative potential impacts to air quality were assessed on a regional scale and given the dispersing nature of pollutant emissions and aggregate impacts from surrounding jurisdictions and air management districts. Any activity resulting in emissions of PM_{10}, ozone, or ozone precursors will unavoidably contribute, to some degree, to regional non-attainment designations of ozone and PM_{10}. However, the level of cumulative impact a single project may have on regional air quality is difficult to measure.

The Coachella Valley is subject to the SCAQMD 2016 Air Quality Management Plan and the 2003 PM_{10} Coachella Valley State Implementation Plan (CVSIP) to ensure levels of criteria pollutants are regulated and minimized to the best of the region's ability. The 2016 AQMP has set forth attainment deadlines and future emission level projections for criteria pollutants within the project area, which satisfy Section 15130(b)(1)(B) of the CEQA guidelines for analyzing cumulative impacts. These regional plans provide guidelines and rules for achieving state and federal air quality standards, which aid to reduce cumulative impacts, particularly through the enforcement of SCAQMD daily thresholds and implementation of time-sensitive reduction strategies to achieve attainment status.

Upon completion, the maintenance of the Proposed Project will only result in de minimis emissions of new criteria pollutants, and the improved channel and its maintenance may serve to somewhat reduce current emissions of PM_{10} and ozone precursors. Therefore, by providing channel slope and bottom stabilization, and by potentially reducing maintenance, the project could have a positive long-term impact on cumulative air quality conditions. Cumulative air quality impacts are therefore limited to construction emissions. Construction mitigation and minimization measures set forth in this EIR are aimed to reduce the Proposed Project's contribution to any significant cumulative effects related to air quality.

The SSAB is designated as nonattainment under both the CAAQS and the NAAQS for ozone and PM_{10}. Emissions of CO, NOX and ROG that exceed the SCAQMD operational thresholds would contribute to the ozone nonattainment designation, while emissions of PM_{10} that exceed the SCAQMD thresholds would contribute to the PM_{10} nonattainment designation of the SSAB.

Construction activities associated with development of the Proposed Project will not exceed SCAQMD daily thresholds for criteria pollutants under mitigated conditions. However, emissions of CO, NOx, ROG, and PM_{10} during construction of the project are unavoidable and will marginally contribute to regional ozone and PM_{10} non-attainment designations, and on a one-time rather than ongoing basis. The following discussions address cumulative impacts related to ozone and PM_{10}.

Regulation of Ozone

As previously discussed, SCAQMD studies indicate that most ozone is transported to the Salton Sea Air Basin from the upwind sources in the South Coast Air Basin. The amount of ozone contributed from other air basins is difficult to quantify; however, improved air quality in the project area depends upon reduced ozone emissions in the South Coast Air Basin. Therefore, cumulative impacts to ozone are better managed on a multi-regional scale as opposed to single projects. The SCAQMD 2016 AQMP provide current and future measures to reduce both stationary and mobile source ozone emissions. Proposed measures to reduce ozone include emission reductions from coatings and solvents, RECLAIM facilities, early transitions to cleaner mobile technologies, and incentives to adopt net zero and near zero technologies[18].

CalEEMod does not calculate ozone emissions directly and therefore emissions of ozone precursors (CO, NOx, and ROG) were evaluated to determine project-related impacts to ozone. Ozone precursors are the primary pollutants involved in the chemical reaction process that forms ozone. The Proposed Project will not exceed local construction or operational (maintenance) thresholds for the ozone precursors under required mitigated conditions.

Development of Proposed Project will adhere to ozone reduction/mitigation measures set forth in the SCAQMD AQMP and this EIR. Therefore, ozone emissions associated with the project will not be cumulatively considerable.

Regulation of PM_{10}

Similar to ozone, PM_{10} is regulated through the SCAQMD 2016 Air Quality Management Plan and 2003 PM_{10} Coachella Valley State Implementation Plan (CVSIP). Additional PM_{10} reduction measures include applicable state code and AQMD Rules, such as Rule 403 (Fugitive Dust), which enforces fugitive dust compliance for all activities within the SSAB. As shown in the analysis above, the Proposed Project will not exceed local daily thresholds for PM_{10}. Therefore, cumulative impacts to PM_{10} are considered less than significant.

In conclusion, cumulative air quality impacts related to construction and maintenance of the Proposed Project are considered less than significant. Development and operation of the proposed project will not exceed maximum daily thresholds for CO, NOx and PM_{10}, which as criteria pollutants are cumulative thresholds in themselves. In addition, the Proposed Project is consistent with regulatory requirements for ozone and PM_{10} in the Salton Sea Air Basin. Therefore, cumulative impacts related to ozone and PM_{10} emissions will be less than cumulatively considerable.

2.6 Biological Resources

2.6.1 Introduction

The follow provides an overview of the existing biological resource conditions within the project area and surrounding region and an analysis of potential biological resource impacts that would result from implementation of the Proposed Project. The regulatory environment and thresholds of significance are

[18] Final 2016 Air Quality Management Plan, South Coast Air Quality Management District, 2016.

described. The project's potential biological impacts are discussed and where needed, mitigation measures are set forth. The section concludes with a discussion of residual and cumulative impacts. This section is based on the Biological Resource Assessment Report[19] and the Jurisdictional Delineation Report[20] both prepared for the project by AMEC Foster Wheeler. The Biological Resource Assessment Report is appended to this EIR as Appendix C. The Jurisdictional Delineation is provided as Appendix H.

2.6.2 Thresholds of Significance

The following significant thresholds or criteria are not strictly those recommended in §15064.7 of CEQA, rather they are derived from Appendix G of CEQA, which is used to determine if and to what extent a project may have a potentially significant impact on biological resources. The Proposed Project would have a significant effect on biological resources if it is determined that the project will:

a) Have a substantial adverse effect, either directly or indirectly, or through habitat modifications, on any species identified as a candidate, sensitive, or special status species (including species listed as threatened or endangered) in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

f) Conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

2.6.3 Regulatory Framework

Federal

Endangered Species Act (ESA)

The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service are the designated federal agencies accountable for administering the ESA. ESA defines a species as "endangered" or "threatened" and provides regulatory protection at the federal level. Section 9 of the ESA prohibits the "take" of listed (i.e., endangered or threatened) species. The ESA definition of take is "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct."

[19] "Coachella Valley Stormwater Channel Improvement Project, Phase I Biological Resources Assessment & Coachella Valley Multiple Species Habitat Conservation Plan Compliance Report", prepared by AMEC Foster Wheeler, February 3, 2016.

[20] Jurisdictional Delineation Report for the Coachella Valley Stormwater Channel Improevement Project, prepared by AMEC Foster Wheeler, January 26, 2016.

Recognizing that take cannot always be avoided, Section 10(a) includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Specifically, Section 10(a)(1)(A) permits (authorized take permits) are issued for scientific purposes. Section 10(a)(1)(B) permits (incidental take permits) are issued for the incidental take of listed species that does not jeopardize the species. Section 10(a) of the ESA also establishes standards for the content of habitat conservation plans, such as the Coachella Valley Multiple Species Conservation Plan (CVMSHCP).

Section 7 (a)(2) requires federal agencies to evaluate a proposed Project with respect to species currently listed or proposed to be listed, and their respective critical habitat (if applicable). Federal agencies must employ programs for the conservation of listed species and are prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its critical habitat.

As defined by the ESA, "individuals, organizations, states, local governments, and other non-federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit, license, or other authorization, or involve federal funding."

Migratory Bird Treaty Act (MBTA)

Treaties signed by the U.S., Great Britain, Mexico, Japan, and the countries of the former Soviet Union make it unlawful to pursue, capture, kill, or possess, or attempt to engage in any such conduct to any migratory bird, nest, egg or parts thereof listed in this document. The Secretary of the Interior can issue permits for incidental take of migratory bird species. As with the ESA, the MBTA also allows the Secretary of the Interior to grant permits for the incidental take of these protected migratory bird species.

Section 404 of the Clean Water Act

This section of the Clean Water Act (CWA), administered by the US Army Corps of Engineers (USACE), regulates the discharge of dredged and fill material into "Waters of the United States" (WOTUS) The USACE has created a series of nationwide permits that authorize certain activities within waters of the U.S. provided that the proposed activity does not exceed the impact threshold for nationwide permits; takes steps to avoid impacts to wetlands where practicable; minimizes potential impacts to wetlands; and provides compensation for any remaining, unavoidable impacts through activities to restore or create wetlands. For projects that exceed the threshold for nationwide permits, individual permits under Section 404 can be issued. An application for an individual 404 permit has been filed with the USACE.

U.S. Army Corps of Engineers

The USACE regulates the discharge of dredged or fill material in waters of the United States (WOTUS) pursuant to Section 404 of the CWA. CWA regulations (33 CFR 328.3(a)) define WOTUS as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. The territorial seas;
4. All impoundments of waters otherwise defined as WOTUS under the definition;
5. Tributaries of waters described in 1-3;
6. All waters adjacent to waters identified above (1-5), including wetlands, ponds, lakes, oxbows, impoundments and similar waters;
7. All waters in i-v, below, where they are determined, on a case-specific basis, to have a significant nexus to a water identified in 1-3, above. The waters identified below are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in 1-3. Waters identified in this paragraph shall not be combined with waters identified in item 6, above, when performing a significant nexus analysis. If waters

identified in this paragraph are also an adjacent water under item 6, they are an adjacent water and no case-specific significant nexus analysis is required.

i. Prairie potholes. Prairie potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest.
ii. Carolina bays and Delmarva bays. Carolina bays and Delmarva bays are ponded, depressional wetlands that occur along the Atlantic coastal plain.
iii. Pocosins. Pocosins are evergreen shrub and tree dominated wetlands found predominantly along the Central Atlantic coastal plain.
iv. Western vernal pools. Western vernal pools are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers.
v. Texas coastal prairie wetlands. Texas coastal prairie wetlands are freshwater wetlands that occur as a mosaic of depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.

8. All waters located within the 100-year floodplain of a water identified in 1-3 above, and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in 1-5 where they are determined on a case-specific basis to have a significant nexus to a water identified in 1-3. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in 1-3 or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph shall not be combined with waters identified in item 6 above when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under item 6, they are an adjacent water and no case-specific significant nexus analysis is required.

The USACE delineates non-wetland waters in the Arid West Region by identifying the ordinary high water mark (OHWM) in ephemeral and intermittent channels (USACE, 2008a). The OHWM is defined in 33 CFR 328.3(e) as:

> "…that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

Identification of OHWM involves assessments of stream geomorphology and vegetation response to the dominant stream discharge. Determining whether any non-wetland water is a jurisdictional WOTUS involves further assessment in accordance with the regulations, case law, and clarifying guidance as discussed below.

Wetlands and Other Special Aquatic Sites

Wetlands are defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Special aquatic sites are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. Special aquatic sites include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes. They are defined in 40 CFR 230 Subpart E.

State

California Endangered Species Act (CESA)
This legislation is similar to the federal ESA; however, it is administered by the California Department of Fish and Wildlife (CDFW). The CDFW is authorized to enter into "memoranda of understanding" with individuals, public agencies, and other institutions to import, export, take, or possess state-listed species for scientific, educational, or management purposes. CESA prohibits the take of state-listed species except as otherwise provided in state law. Unlike the federal ESA, CESA applies take prohibitions to species currently petitioned for state-listing status (candidate species). State lead agencies are required to consult with CDFW to ensure that actions are not likely to jeopardize the continued existence of any state-listed species or result in the destruction or degradation of occupied habitat.

The Native Plant Protection Act (NPPA)
The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for "rare and endangered" are different from those contained in CESA. However, the list of species afforded protection in accordance with the NPPA includes those listed as rare and endangered under CESA. NPPA provides limitations on take as follows: "no person will import into this state, or take, possess, or sell within this state" any rare or endangered native plants, except in accordance with the provisions outlined in the act. If a landowner is notified by CDFW, pursuant to section 1903.5, that a rare or endangered plant is growing on their property, the landowner shall notify CDFW at least 10 days prior to the changing of land uses to allow CDFW to salvage the plants.

Natural Community Conservation Planning (NCCP) Program
The NCCP, which is managed by the CDFW, is intended to conserve multiple species and their associated habitats, while also providing for compatible use of private lands. Through local planning, the NCCP planning process is designed to provide protection for wildlife and natural habitats before the environment becomes so fragmented or degraded by development that species listing is required under CESA.

Instead of conserving small, often isolated "islands" of habitat for just one listed species, agencies, local jurisdictions, and/or other interested parties have an opportunity through the NCCP to work cooperatively to develop plans that consider broad areas of land for conservation that would provide habitat for many species. Partners enroll in the programs and, by mutual consent, areas considered to have high conservation priorities or values are set aside and protected from development. Partners may also agree to study, monitor, and develop management plans for these high value "reserve" areas. The NCCP provides an avenue for fostering economic growth by allowing approved development in areas with lower conservation value. An NCCP is included as a part of the CVMSHCP.

Sections 1600-1603 of the State Fish and Game Code
The California Fish and Game Code, Sections 1600 through 1603, regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources. Under state code, CDFW jurisdiction is assessed in the field based on one, or a combination, of the following criteria (CDFW 2005b):

- At minimum, intermittent and seasonal flow through a bed or channel with banks and that also supports fish or other aquatic life.
- A watercourse having a surface or subsurface flow regime that supports or that has supported riparian vegetation.
- Hydrogeomorphically distinct top-of-embankment to top-of-embankment limits.
- Outer ground cover and canopy extents of, typically, riparian associated vegetation species that would be sustained by surface and/or subsurface waters of the watercourse.

The CDFW requires that public and private interests apply for a "Streambed Alteration Agreement" for any project that may impact CDFW waters. The CDFW has maintained a "no net loss" policy regarding impacts to streams and waterways and requires replacement of lost habitats on at least a 1:1 ratio.

Section 2081 of the State Fish and Game Code

Under Section 2081 of the California Fish and Game Code, the CDFW authorizes individuals or public agencies to import, export, take, or possess state endangered, threatened, or candidate species in California through permits or memoranda of understanding. These acts, which are otherwise prohibited, may be authorized through permits or "memoranda of understanding" if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question, and (4) the applicant ensures suitable funding to implement the measures required by the CDFW. The CDFW must make this determination based on the best scientific information reasonably available and must include consideration of the species' capability to survive and reproduce.

State Fish and Game Code

Section 3505.5 makes it unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey, i.e.: owls, hawks, eagles, etc.) or to take, possess, or destroy the nest or eggs of any bird-of-prey. Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA.

Regional/Local

Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP)

The Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) is a comprehensive regional plan encompassing a planning area of approximately 1.1 million acres and conserving approximately 240,000 acres of plus public lands already in conservation. In total, when fully implemented the CVMSHCP will conserve approximately 746,100 acres. The Plan addresses the conservation needs of a variety of plant and animal species, and plant communities that occur in the Coachella Valley region.

The Plan was finalized in October 2008 and updated in 2016. It establishes a system of preserves, generally outside of urbanized areas in the Valley in order to protect lands with high conservation value for 27 plant and wildlife species and 27 natural communities. The Plan streamlines development permit processing by providing "Permittees" "incidental take permits" under state and federal endangered species acts. CVWD is a signatory to and participates in the implementation of the CVMSHCP. The CVMSHCP recognizes the importance of maintaining regional flood control facilities and makes provision for such maintenance even in Conservation Areas.[21] The Proposed Project is located outside of a CVMSHCP Conservation Area, the nearest being the CVSC delta Conservation area. However CVWD's maintenance activities including vegetation maintenance , are covered activities in the CVMSHCP which CVWD is obligated to provide mitigation for. As a Permittee under the CVMSHCP, CVWD must comply with all applicable terms and conditions of the CVMSHCP and Implementing Agreement (See Section 13.0 of the CVMSHCP Implementing Agreement).

[21] See Coachella Valley Multiple Species Habitat Conservation Plan, Section 7.3.1.1: Covered Operation, Maintenance, and Safety Activities within Existing Rights-of-Way or Easements. 2016.

2.6.4 Environmental Setting

The Coachella Valley and the project area are located in the Colorado subunit of the Sonoran Desert. The rocky slopes and mountain ranges bordering the valley isolate it from marine moisture to the west. These circumstances contribute to the region's excessively hot and dry climate, and create a unique geomorphic and geographic setting that has shaped the evolution of a variety of plant and wildlife species. The resulting conditions provide an ecological environment that supports diverse and sometimes highly specialized species and natural communities.

The project area within the CVSC consists of a soft, earthen channel bottom bounded by earthen side slopes and levees. Lands outside the CVSC, but in and surrounding the project planning area are a patchwork of commercial buildings and single-family rural residential dwellings, agriculture, and natural lands (undeveloped, some of which have been previously disturbed). Within the channel, habitat includes desert scrub and riparian areas, which are periodically disturbed during channel maintenance.

A wide range of common plant species such as mesquite, smoke tree, desert holly, creosote bush, and palo verde, are supported by the conditions present in the valley, as are a wide range of wildlife species. Channel vegetation is characterized by the occurrence of desert saltbush scrub, tamarisk scrub, arrow weed thickets and Bermuda grass. Birds common to the area include rock pigeon and Eurasian collared-dove, turkey vulture, red-tailed hawk, greater roadrunner, American kestrel, common raven and verdin. Burrowing owls (*Athene cunicularia*) also occur in the area. Common mammals include Audubon's cottontail, coyote, black-tailed jackrabbit, deer mouse and other small mammals, particularly rodents.

CDFW and US jurisdictional waters are present in the project planning area (Jurisdictional Delineation Report, 2016; see Appendix G of this EIR). The project planning area's suitable habitat was assessed based on the presence or absence of habitat components, such as soils, vegetation and topography, characteristic of the potentially occurring special-status biological resources determined by the literature review.

2.6.5 Existing Conditions

Historically, (prior to 1960), large areas of the Coachella Valley and CVSC improvement project area were primarily covered with wind-deposited (aeolian) sands and mesquite hummocks. As agriculture and then urban development expanded throughout the greater Coachella Valley, the flow and deposition of aeolian sand deposits from the west and north has been interrupted and slowed by these manmade impediments. This has resulted in the gradual stabilization and compaction of sands that were once continuous, loose and dynamic.

The CVSC is a man-made channel that tends to follow natural drainage conditions in the vicinity, and has been directly and indirectly impacted by a variety of anthropomorphic influences. The most evident disturbance is the channel's vegetation trimming and maintenance to convey regional storm flows to the Salton Sea. The subject reach of the channel is not lined and there are low-volume perennial stream flows fed by water reclamation plant outflows and agricultural drains that discharge into the channel along or upstream of the subject channel reach. The subject channel alignment is located within an area of the valley with widespread agricultural activities, including cultivation and a wide range of agri-business activities and land uses.

The project area also includes conservation lands that extend approximately 0.5 miles along the channel alignment, immediately east of the project area north and south of Avenue 54. These conservation lands were established as partial mitigation for the loss of natural habitat associated with the construction of the Highway 86 Expressway to the east. This restoration area is isolated from other conservation lands and is designated by Caltrans as an "Environmentally Sensitive Habitat Restoration Mitigation" area that is comprised of a linear basin along the west Highway 86 right of way and extensively planted with honey mesquite.

The entire project planning area is subject to land disturbance associated with cultivation, water treatment plant operations and maintenance, numerous agribusinesses, mobile home park and other residential development. Local ecological conditions have also been affected by the existing State Highway 111 and Airport Boulevard bridges and two bridges of the Union Pacific Railroad, which cross the subject channel reach.

Requisite channel maintenance has periodically included above-ground mowing or trimming of vegetation along the channel bottom to ensure capacity. Surrounding limited undisturbed and ruderal habitats have been fragmented by public roads, operation of off-road vehicles (existing dirt and paved roads and trails), dumping of trash, debris and waste and the presence of domestic animals such as dogs and livestock. All of these onsite and adjacent human-related disturbances have had adverse impacts on the natural environment in the immediate vicinity and have negatively affected the distribution, diversity and abundance of flora and fauna.

Biological Conditions in the Study Area

The following section describes the natural communities associated with the CVSC improvement project area, including vegetation and wildlife communities, aquatic resources, invasive species and habitat connectivity.

Vegetation Communities

Field surveys conducted for the Proposed Project and for other planning activities in the area have determined that the area consists primarily of desert saltbush scrub, tamarisk scrub, arrow weed thickets, Sonoran cottonwood-willow riparian forest, and coastal and valley freshwater marsh vegetation. The predominant plant community is composed of moderate to dense streamside thickets dominated by arrow-weed (*Pluchea sericea*). Cattail (*Typha* [several species, spp]), tule (spp), rushes (spp), and salt grass (*Distichlis spicata*) occur as scattered individuals, especially around the margins. Salt grass is a common ground cover that forms flats within the channel where it forms an alliance in which salt grass is dominant or co-dominant with other herbaceous plants and emergent shrubs.

Arrow-weed scrub replaces willow and cottonwood riparian forests in areas where soils are more saline or alkaline. No saline/alkaline soils are mapped in the project planning area, but saline encrustations were present. Channel vegetation also includes Fremont cottonwood (*Populus fremontii*) but the community is often narrow, and the understory is not always dense, due to extensive tamarisk growth which has outcompeted many native species. As noted above, the Highway 86 habitat restoration area is comprised of a linear basin along the west Highway 86 right of way and extensively planted with honey mesquite (*Prosopis glandulosa*). Project biologists also observed tamarisk scrub intermittently throughout the planning area. Regular maintenance disturbance favors this species, but it has not entirely supplanted natives in any part of the planning area.

Wildlife Communities

Vertebrate wildlife directly observed and/or otherwise detected through presence of sign (e.g., scat, bones, prints, feathers, burrows, etc.) during the field survey included 55 species: one reptile, 48 birds, and at least six mammals. The Biological Resource Assessment contains a complete list of vertebrate species detected. Small, unidentified fish were seen, but not for long enough for identification. Common non-native fish, which may occur in the CVSC, include western mosquitofish (*Gambusia affinis*), sailfin molly (*Poecilia latipinna*), and Mozambique tilapia (*Oreochromis mossambicus*). While only one common reptile was observed (side-blotched lizard (*Uta stansburiana*)), other common species such as, but not limited to, tiger (western) whiptail (*Aspidoscelis tigris*), desert iguana (*Dipsosaurus dorsalis*), desert horned lizard (*Phrynosoma platyrhinos*), gopher snake (*Pituophis catenifer*), and coachwhip (*Coluber flagellum*) may also occur.

Birds comprised the largest group of species observed in the project planning area with at least 48 species identified. Common native species of desert and desert riparian habitats observed included, but were not limited to: the turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), greater roadrunner (*Geococcyx californianus*), American kestrel (*Falco sparverius*), common raven (*Corvus corax*), verdin (*Auriparus flaviceps*), marsh wren (*Cistothorus palustris*), common yellowthroat (*Geothlypis trichas*), and red-winged blackbird (*Agelaius phoeniceus*). Also observed were Wilson's snipe (*Gallinago delicata*), white-winged dove (*Zenaida asiatica*), white-throated swift (*Aeronautes saxatalis*), Anna's hummingbird (*Calypte anna*), barn swallow (*Hirundo rustica*), hooded oriole (*Icterus cucullatus*), and lesser goldfinch (*Spinus psaltria*). Recent burrowing owl sign was found and are further discussed below. Migrants identified include blue-gray gnatcatcher (*Polioptila caerulea*), ruby-crowned kinglet (*Regulus calendula*), yellow-rumped warbler (*Setophaga coronata*), and white-crowned sparrow (*Zonotrichia leucophrys*).

Mammals detected in the planning area included the Audubon's cottontail (*Sylvilagus audubonii*), coyote, (*Canis latrans*), and other small mammals, particularly rodents, as a variety of small mammal burrows and tracks were observed. Other common species that would be expected to occur in the area include black-tailed jackrabbit (*Lepus californicus*), deer mouse (*Peromyscus maniculatus*), and bobcat (*Lynx rufus*).

Three species of bats were found to have records in the vicinity: Townsend’s big-eared bat, spotted bat, and western mastiff bat. One of these, the spotted bat, only has foraging potential in the area. The Townsend’s big-eared bat could roost on the walls and ceilings of bridges, culverts, and other structures in the planning area, but is most often associated with caves or mines. Human disturbance is frequent in the project area, and the low level/lack of suitable roosting habitat may be a limiting factor for this species.

The western mastiff bat prefers roosts in high places such as cliff crevices, but could use trees or structures in the area. Both species may forage in the project vicinity. Although no bats were seen during the biological resource assessment, suitable roosting habitat was seen. Some potential roost sites detected in the project planning area include areas under the UPRR bridges, the Highway 111 Airport Boulevard bridges, and other structures.

Special Status Species

These are species that may be especially sensitive and have been given “special-status” due to declining populations, vulnerability to habitat change, or because they have restricted ranges. Some are listed as threatened or endangered by the USFWS or by the CDFW and are protected by the federal and state Endangered Species Acts and the CNPPA. Others have been identified as sensitive or as special-status species by the USFWS, the CDFW, or by private conservation organizations, including the CNPS. Unlisted sensitive species do not have formal state or federal status, but may nevertheless be considered significant under CEQA.

No special-status plant species have been identified in the planning area and those with at least some potential were determined to be absent. An individual of one sensitive invertebrate species (monarch butterfly (*Danaus plexippus pop. 1*)) was found foraging in the planning area and the cheeseweed owlfly (*Oliarces clara*) was determined to be absent due to limited habitat.

One sensitive species of fish, desert pupfish (*Cyprinodon macularius*) has a very low potential of occurring within the planning area. Pupfish inhabit desert ponds, springs, marshes and streams in southeast California and the nearest recorded occurrence is eight miles to the south in agricultural drains near the Salton Sea. The desert pupfish is listed as “endangered” by the State and federal governments and is a “Covered Species” under the Coachella Valley MSHCP.

Special status amphibians with at least some potential to occur in the planning area include Couch's spadefoot toad (*Scaphiopus couchii*), which occupies temporary desert rain pools with nearby subterranean refuge sites. The potential for this amphibian to occur in the planning area is very low, with the nearest record occurrence being approximately five miles to the southeast.

Special Status Reptiles[22]

The Coachella Valley fringe-toed lizard (*Uma inornata*) and flat-tailed horned lizard are also known to occur in the eastern Coachella Valley. The fringe toed lizard requires fine, loose, windblown sand interspersed with hardpan and widely spaced desert shrubs, which are lacking from the planning area; this lizard is absent from the planning area. The flat-tailed horned lizard is restricted to desert washes and desert flats, and requires vegetative cover, ants, and fine sand, habitat that the planning area does not well provide. This species has not been detected and has a very low probability of occurring in the project area due to a lack of suitable habitat.

Special Status Birds

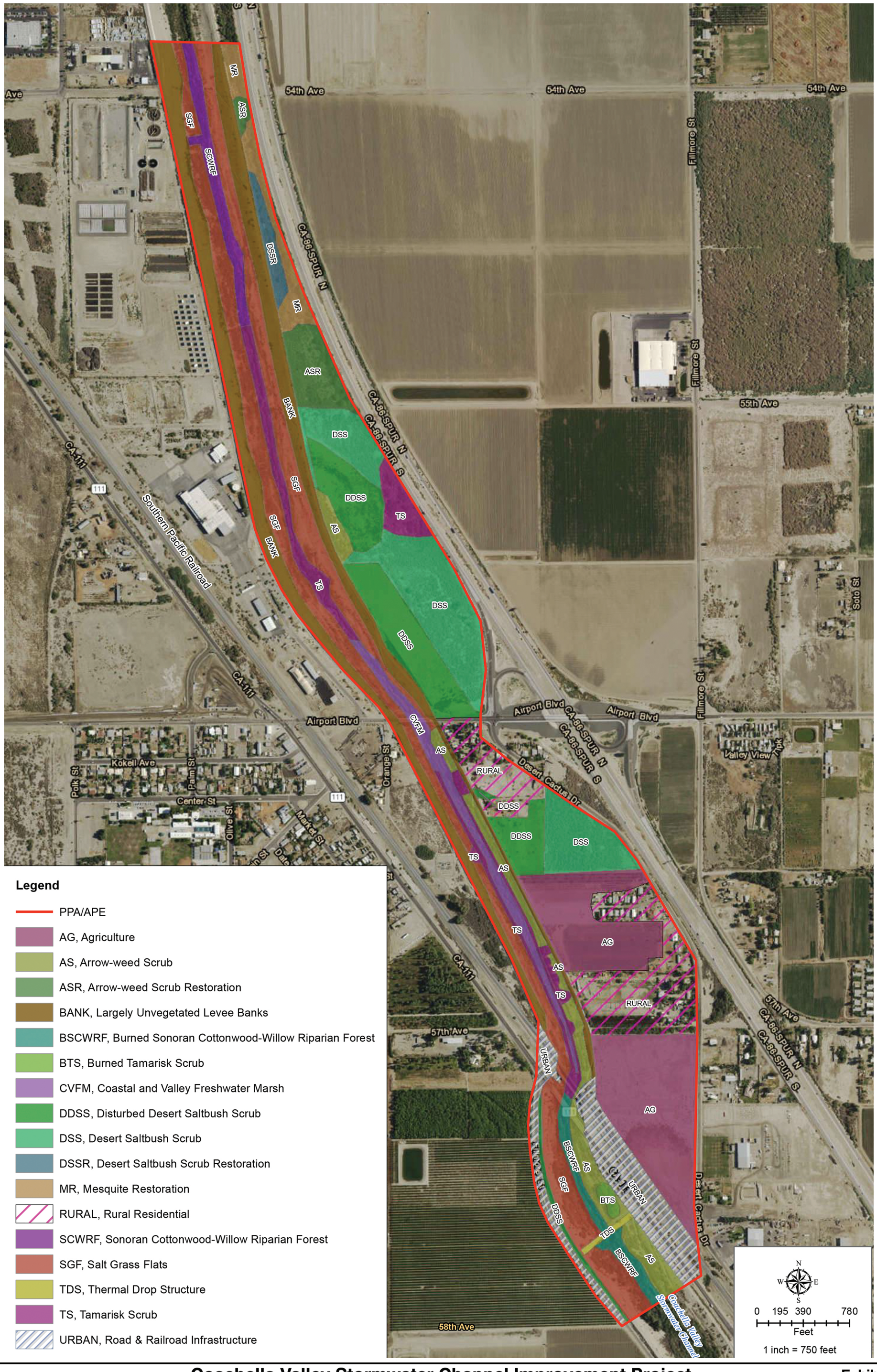
A variety of special status bird species have the potential to occur in the project planning area. Of the 22 special status birds with at least some potential to occur within or near the planning area, the burrow owl (*Athene cunicularia*) is known to occur there. Owl, owl sign and prospective owl burrows were identified along the length of the channel project. Other sensitive bird species are known to occur in the planning area, including Abert's towhee (*Melozone aberti*), and Costa's hummingbird (*Calypte costae*). Both the California black rail (*Laterallus jamaicensis coturniculus*) and the Yuma Ridgeway's (clapper) rail (*Rallus obsoletus (longirostris*)) have very low and low potential to occur in the project area, respectively.

Burrowing owl is a covered species under the CVMSHCP, but neither the federal 404 permit nor the state NCCP for the CVMSHCP provide take of this species, which is subject to the MBTA. This species nests and roosts underground, including along canals and flood control levees and channels, and is particularly vulnerable to ground disturbing activities. Project hydrologists and biologists encountered one or more owls at burrows within the channel and sign of owls elsewhere in the project vicinity. Numerous burrows or burrow-like structures were observed that are suitable for owl occupation; signs of owl usage were observed in and immediately adjacent to the project area during project field surveys.

Invasive Species

Project biologists observed tamarisk scrub, an invasive species, intermittently throughout the project area. CVWD will continue to maintain baseline or better conditions within the channel, which includes regular maintenance activities such as trimming and mowing.

[22] "Coachella Valley Stormwater Channel Improvement Project, Phase I Biological Resources Assessment & Coachella Valley Multiple Species Habitat Conservation Plan Compliance Report", prepared by AMEC Foster Wheeler, February 3, 2016.



Legend

- PPA/APE
- AG, Agriculture
- AS, Arrow-weed Scrub
- ASR, Arrow-weed Scrub Restoration
- BANK, Largely Unvegetated Levee Banks
- BSCWRF, Burned Sonoran Cottonwood-Willow Riparian Forest
- BTS, Burned Tamarisk Scrub
- CVFM, Coastal and Valley Freshwater Marsh
- DDSS, Disturbed Desert Saltbush Scrub
- DSS, Desert Saltbush Scrub
- DSSR, Desert Saltbush Scrub Restoration
- MR, Mesquite Restoration
- RURAL, Rural Residential
- SCWRF, Sonoran Cottonwood-Willow Riparian Forest
- SGF, Salt Grass Flats
- TDS, Thermal Drop Structure
- TS, Tamarisk Scrub
- URBAN, Road & Railroad Infrastructure

Source: AMEC Foster Wheeler, USDA, 2015

01.15.18

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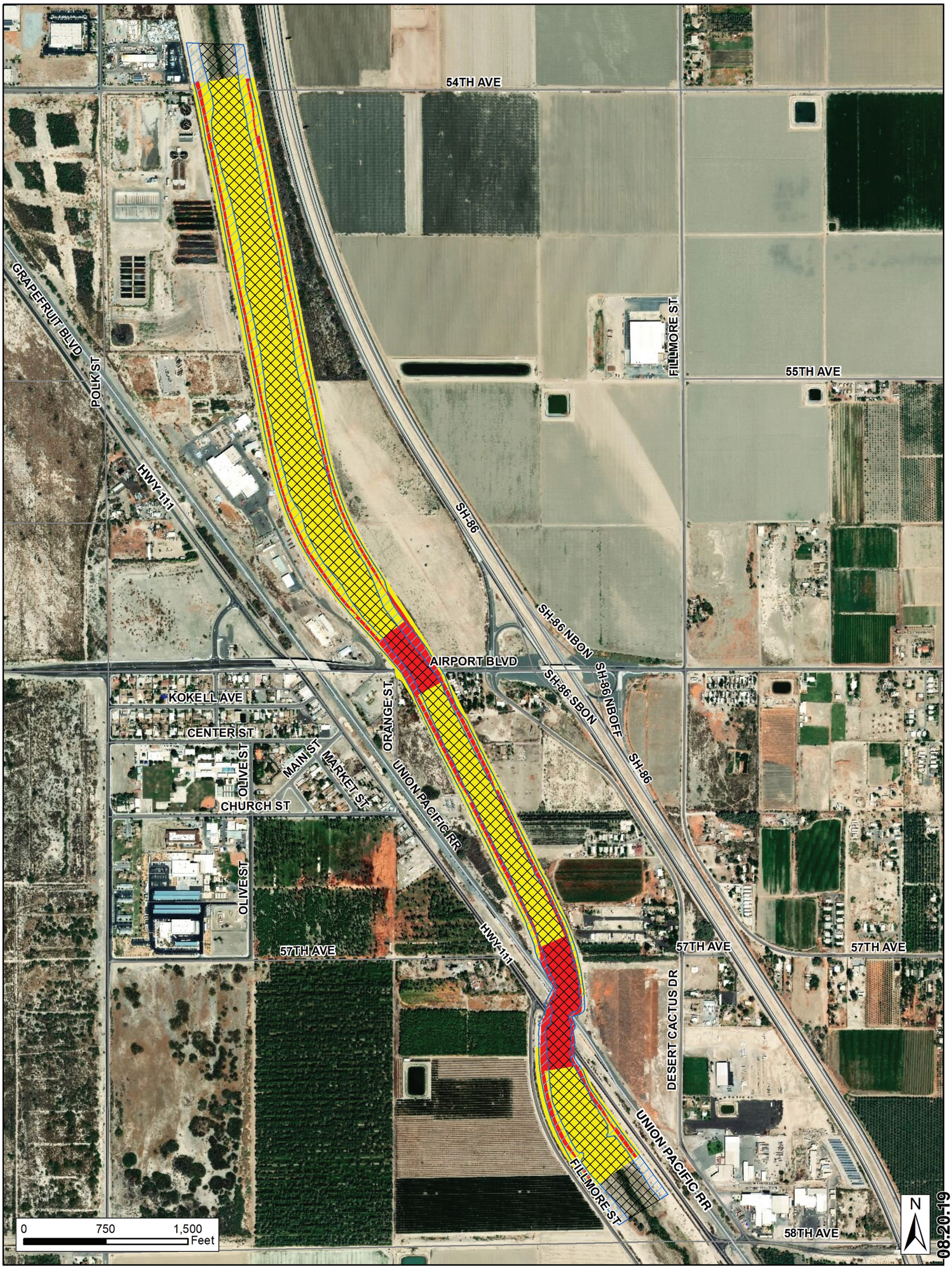
Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Vegetation Communities Map
Coachella Valley Water District

WATER DISTRICT

Exhibit

2-2



LEGEND

- Waters of the US
- CDFW Jurisdiction*

*Impact areas include Waters of the US

Impact Analysis

- Permanent Impact to Waters of the US = 9.45
- Permanent Impact to CDFW Jurisdiction = 22.85
- Temporary Impact to Waters of the US = 59.61
- Temporary Impact to CDFW Jurisdiction = 85.24

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Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Impacts to Jurisdictional Waters - Proposed Project, Alt. A
Coachella Valley Water District

Exhibit
2-3

Waters of the US and the State of California

The Coachella Valley Stormwater Channel has been mapped to identify "waters" and drainages that fall under the jurisdiction of the state or federal government. The entire planning area was surveyed to identify the potential for jurisdictional water features.

Waters of the State means "*any surface water or groundwater, including saline waters, within the boundaries of the state"* (Water Resources Code Section 13050(e)). Within the subject channel reach CDFW jurisdictional waters extend to the top of the channel bank; regardless if water is present or not present in the channel.

Following field observations, regulated waters of the US and waters of the State were delineated as prescribed by the USUSACE's *A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States*. Waters of the US were determined by identifying the indicators for the Ordinary High-Water Mark (OHWM).

The USACE has identified three criteria necessary to determine an area as federal wetland and non-wetlands:

- **Hydrophytic Vegetation.** More than 50% of all the dominant vegetation species present must have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (USACE, 2008b). An OBL indicator refers to plants that almost always occur in wetlands. A FACW indicator refers to plants that usually occur in wetlands, but may occur in non-wetlands. A FAC indicator refers to plants that occur in wetlands and non-wetlands.

- **Hydric Soils**. Soils in the area can be inferred or observed to have a high groundwater table, if there is evidence of prolonged soil saturation, or if there are any indicators suggesting a long-term reducing environment in the upper part of the soil profile. Reducing conditions are most easily assessed using soil color.

- **Wetland Hydrology.** Field observations must indicate that an area has a high probability of being inundated or saturated long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone.

The United States Fish and Wildlife Service (USFWS) is the principal Federal agency that provides information to the public on the extent and status of the Nation's wetlands. Although non-regulatory, the USFWS has developed a series of informational maps, known as the National Wetlands Inventory (NWI) to show wetlands and deep water habitat. NWI wetlands occurring along the Coachella Valley Stormwater Channel along the length of the subject channel alignment, are characterized as riverine, freshwater pond, freshwater emergent wetland, and freshwater forested/ shrub wetland. The NWI in the area was last updated in October 2017

2.6.6 Project Impacts

The subject CVSC improvement project will include the widening of the stormwater channel, lining side slopes and lining the channel bottom under and in the vicinity of the four bridges that cross the subject channel reach. Extensive channel grading will be required and all portions of the channel slopes and bottom may be disturbed, at least temporarily. Permanent impacts will occur where concrete lining is planned; however, both on side slopes and channel bottoms the concrete lining will be both purposefully and incidentally covered with soil.

Soils will be used to cover the channel side slopes to protect against graffiti and as a sacrificial soil cover. Periodic storm flows in the channel are expected to deposit a cover of soils and gravel atop the channel bottom lining providing at least some substrate for vegetation. This analysis also addresses potential impacts associated with the limited ground disturbance outside the channel associated with the utility relocation projects, including the CVWD irrigation lateral, the SCG natural gas pipeline, and IID power poles (see Exhibits 1-6A through 1-6D).

Under the Proposed Project, most of the channel bottom will remain unlined with a "soft" bottom with channel soils at depth. The existing perennial low-flow stream fed by discharges from municipal wastewater reclamation plants and rising groundwater from subsurface drainage facilities primarily serving agricultural lands will continue to flow in a pilot channel. The Project area encompasses a total of 69.06± acres under federal jurisdiction, and 39.04± acres under CDFW jurisdiction. Consultation with USACE resulted in the determination that there are no federal wetlands within the Project area due to lack of suitable hydric soils per the USACE criteria for defining wetlands. Impacts of the Proposed Project to jurisdictional waters are set forth in Table 2-9A below. Also see Exhibit 2-3 which illustrates and quantifies the Proposed Project's impacts on jurisdictional waters of the state and US.

Table 2-9A
Impact to USACE Jurisdictional Waters
Proposed Project

Temporary Impacts Waters of the US (acres)	Permanent Impacts to Waters of the US (acres)
59.61	9.45

Table 2-9B
Impact to CDFW Jurisdictional Waters
Proposed Project*

Temporary Impacts to CDFW Jurisdiction (acres)	Permanent Impacts to CDFW Jurisdiction (acres)
85.24	22.85

* Note that impacted acreage of CDFW
Jurisdictional Waters includes USACE Waters of the US acreages

In addition to the above impact assessment of jurisdictional waters and the habitat they comprise, the following analysis is also supported by the Biological Resource Assessment Report and Coachella Valley Multiple Species Habitat Conservation Plan Compliance Analysis, provided in Appendix C, and the Jurisdictional Delineation provided in Appendix H.

Approximately 50 sensitive biological resources, including individual species, have been identified with the potential to occur in the project vicinity, of which 18 have been determined to be absent, including all of the plant species, the cheeseweed owlfly, the razorback sucker, Coachella Valley fringe-toed lizard, and the Colorado Valley woodrat. Since they are not expected to occur in the project area or to be impacted, those 18 species are not discussed further.

Of the remaining 32 species, seven are fully covered and conserved by the CVMSHCP: desert pupfish, flat-tailed horned lizard, southwestern willow flycatcher, least Bell's vireo, western yellow bat, Palm Springs pocket mouse, and Coachella Valley (Palm Springs) round-tailed ground squirrel. Since potential impacts to these seven species are mitigated through CVWD's participation in the CVMSHCP they will not be discussed further. The remaining species are discussed in the threshold questions below.

a) Have a substantial adverse effect, either directly or indirectly, or through habitat modifications, on any species identified as a candidate, sensitive, or special status species (including species listed as threatened or endangered) in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

Less than Significant with Mitigation.

Monarch Butterfly: This insect is not covered by the CVMSHCP. It is ranked S2S3 by the state (imperiled - vulnerable), but has no other state or federal status. The species has been included on the CDFW's Special Animals list (2015) primarily to protect its wintering roosts along the coast. A single butterfly was seen foraging in the PPA/APE. Potential impacts to this species are considered less than significant and no further action in regard to this species is required since the planning area is not coastal and does not contain monarch roost sites.

Couch's Spadefoot: This unlisted toad is not covered by the CVMSHCP. It is considered a Species of Special Concern by the CDFW and is ranked S2 by the state (imperiled), but has no other state or federal status. It may occur in the project vicinity in temporary rain pools (if any) and flooded date palm orchards, at least one of which is within the planning area, and which may also provide breeding habitat and refugia.[23] The channel itself is not habitat for the species. There is only one known local record, five miles to the southeast, and limited potential habitat in the PPA/APE. It is recommended that substantial temporary pools be avoided or surveyed for this species and its' eggs and tadpoles prior to disturbance to avoid impacts to breeding spadefoots.

Bats: Three additional species of bats were found to have records in the project vicinity: Townsend's big-eared bat, spotted bat, and western mastiff bat. One of these, the spotted bat, only has foraging potential in the area. Although implementation of the Proposed Project may represent an incremental loss of potential spotted bat foraging habitat, it is not expected to have a significant impact on the species or to result in its take. Potential impacts to the spotted bat will be less than significant and no further action is required.

The Townsend's big-eared bat could roost on the walls and ceilings of bridges, culverts, and other structures in the project area, but is most often associated with caves or mines. Human disturbance is frequent in the project area, and may be a limiting factor for this species. The western mastiff bat prefers roosts in high places such as cliff crevices, but could use trees or structures in the area. Both species may forage in the vicinity. Take of these or other roosting bat species may be considered significant. Although no bats were seen during the biological resource assessment, suitable roosting habitat was seen. Focused surveys may be required to ensure that bats are not present so that they are not harmed or disturbed by construction activities. Some potential roost sites detected in the PPA/APE include areas under the four bridges that cross through the Project Planning area (Highway 111, Southern Pacific Railroad, and Airport Boulevard Bridges).

[23] Op. cit. (Amec 2016)

Rails: The California black rail and Yuma Ridgway's (clapper) rail are covered species under the CVMSHCP, but because they are both California Fully Protected species, no take is allowed. Also, because the California black rail is not federally listed, take of that species is also prohibited under the MBTA. For both species, the CVMSHCP states: "Surveys will be required in potential Habitat for this rail before any activity that would impact the Habitat. If rails are found, the Habitat must be avoided or measures approved by The Wildlife Agencies taken to ensure that no take of an individual occurs." While the potential occurrence of rails in the project area is considered low or very low, protocol level surveys for these species are recommended prior to initiation of construction and in accordance with established protocol.

Burrowing Owl: As noted above, burrowing owl and their sign were encountered at burrows and numerous burrows or burrow-like structures suitable for occupation by owls were also observed in or immediately adjacent to the project planning area. Because of its protected status and its occurrence within the project planning area, actions to avoid take of the burrowing owl will need to be performed prior to project activities.

Non-Nesting Birds Not Covered by the CVMSHCP: Great egret, great blue heron, and snowy egret are unlisted species, which nest colonially. Their nesting colonies are considered sensitive, but they are all ranked S4 (apparently secure). Although these species occur in the planning area for foraging, there are no known rookery sites in or near the project site, nor is there sufficiently wide, undisturbed habitat for the establishment of such. The unlisted sharp-shinned hawk is a migrant and winter visitor only. It is considered to be a watch list species by the state. It breeds in montane areas. Although this species occurs in the planning area for foraging, no nesting habitat is present.

The unlisted California gull is a visitor only. Their nesting colonies are considered sensitive, but the species is ranked S4 (apparently secure). It is a colonial breeder on islands in lakes well to the north of our region. Although this species occurs in the PPA/APE for foraging, no nesting habitat is present.

The unlisted prairie falcon is considered to be of federal conservation concern and is designated a species of special concern by the state. It nests on cliffs. No nesting habitat is present on or adjacent to the project planning area. This species may occasionally forage over the area while breeding or wintering. Although implementation of the Proposed Project will represent an incremental loss of foraging habitat, the amount of permanent loss is considered to be less than significant and will not have a significant impact on these species or to result in their take.

Bird Species for which MBTA Take is not Permitted: The following bird species are covered species under the CVMSHCP, but like the burrowing owl, the federal permit for the CVMSHCP does not allow their take under the MBTA: crissal thrasher, Le Conte's thrasher, yellow warbler, yellow-breasted chat, and summer tanager. Nesting habitat for all of these species has been periodically available in the project planning area, and was present at the time of field visits. Recent and periodic future channel maintenance has, and in the future may, substantially reduceroleum (at least periodically) all or portions of this vegetation as a part of CVWD's channel maintenance and is mitigated through CVWD's participation in the CVMSHCP, vegetation management protocol during channel maintenance, and their participation in habitat construction and restoration projects on the NE shore of the Salton Sea and elsewhere. Nesting bird surveys for compliance with the MBTA will prevent take of MBTA protected species.

Other Special-Status Bird Species Not Included in the CVMSHCP: The Cooper's hawk, Costa's hummingbird, vermilion flycatcher, loggerhead shrike, black-tailed gnatcatcher, and Abert's towhee are all special-status species which may nest in the planning area. Regardless of their status, all are protected from take by the MBTA. Nesting bird surveys for compliance with the MBTA will prevent impacts to these species.

Utility Projects
The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways and graded shoulders, service roads, and existing utility structures. One IID power pole located within the channel would be removed and the corresponding channel bottom will be excavated and lined at this location. As with the proposed channel improvements, the utility relocation projects would adhere to mitigation measures BIO-1 through -10 to ensure impacts to sensitive species are avoided or mitigated to less than significant levels.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

Less than Significant with Mitigation. As discussed above, the channel currently includes a mix of desert and alkali scrub, riparian and other habitats, which include sensitive communities protected under the CVMSHCP or Section 1600 of the California Fish and Game Code. The Proposed Project would result in permanent impacts to 22.85 acres of CDFW waters, inclusive of 9.45 acres of waters of the US. These impacts are associated with areas of channel slope and bottom lining. Due to the narrowness of the channel in this reach and the need for sub-grade slope lining erosion protection, temporary impacts will occur along the length of the project.

Once construction is completed the centerline of the pilot channel will be reestablished and the soft bottom portions of the channel will naturally re-vegetate as they do today following channel maintenance activities. Given the extent of permanent loss of CDFW waters, impacts will be significant without mitigation. See Section 2.6.7 Mitigation Measures, below.

Potential impacts to federally protected wetlands are further discussed in response to c) below.

Utility Projects
The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways and graded shoulders, service roads, and existing utility structures. One IID power pole located within the channel would be removed, and the corresponding channel bottom will be excavated and lined at this location. Impacts associated with the utility projects have been accounted for in total project impacts, as discussed above. Therefore, adherence to mitigation measures set forth in Section 2.6.7 will reduce potential impacts to riparian habitats to less than significant levels.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Less than Significant: The following discussion summarizes the findings of the Jurisdictional Delineation prepared for the Proposed Project and includes USACE's analysis and determination in this regard. The complete Jurisdictional Delineation[24] can be found in Appendix H. Potential federally regulated wetlands were determined using the USACE's *Wetlands Delineation Manual* and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. Wetlands are defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." Wetlands and other special aquatic sites possess special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values.

[24] Jurisdictional Delineation Report for the Coachella Valley Stormwater Channel Improevement Project, prepared by AMEC Foster Wheeler, January 26, 2016.

There are no portions of federal waters that meet the definition of jurisdictional wetlands delineated within the project area. Perennial waters occurring in the Project area are a result of manmade sources, including discharges from wastewater reclamation plants and rising groundwater from subsurface drainage facilities primarily serving agricultural lands. Stormwater runoff only occasionally contributes to these manmade channel flows, and major storm events can severely erode the channel bottom and disrupt or remove large areas of riparian and other habitats. The subject channel reach is also narrower than others, with limited opportunities to increase its width. Therefore, regular channel maintenance, including the control of vegetation, is necessary to ensure adequate channel capacity.

As noted above, there are no USACE jurisdictional wetlands within the Project area. With regard to waters of the US, the Proposed Project would result in 9.45 acres of permanent impacts and 59.61 acres of temporary impacts to these federal waters. Once construction is completed, the low-flow (pilot) channel will be reestablished and vegetation will reestablish naturally. However, in order to ensure adequate channel capacity, from time to time vegetation will need to be mowed or trimmed. Although portions of the channel will be lined with concrete and will permanently remove vegetation, no lands within the channel are designated as federally protected wetlands as defined by Section 404. CVWD will comply with Section 404 of the CWA and implement mitigations, as required. Furthermore, USACE determined that due to periodic disturbance and vegetation management, as well as large-scale flooding that can cause significant scour and erosion of soils and vegetation,

> "….the limited construction-related and long-term impacts from the project which result in no loss of waters of the US. The project will not result in a reduction of waters of the US, will not substantially reduce, divert or obstruct flows, will not adversely affect water chemistry or soil/channel bed substrates. The channel improvement project will not have a significant temporary or long-term adverse effect on the various parameters of the channel's existing aquatic ecosystem or organisms, including nutrients, currents or low flow channel circulation, fluctuation in water volume and/or velocity, and salinity occurring in the channel."[25]

Therefore, due to the lack of federal wetlands and limited extent of permanent impacts to riparian and other federal waters, impacts will be less than significant.

Utility Projects

The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways, service roads, and existing utility structures. One IID power pole located within the channel would be removed, and the corresponding channel bottom will be excavated and lined at this location. As previously discussed, there are no federal wetlands located within the subject reach of the channel. Due to the lack of federal wetlands and limited extent of permanent loss of riparian and other non-wetland habitats, impacts will be less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Less than Significant with Mitigation: The proposed channel improvement project is not located within a mapped migratory corridor or native wildlife nursery site. Current channel maintenance results in the periodic trimming of vegetation from the channel and post-storm channel grading to preserve channel capacity. The Proposed Project will have a limited impact on current conditions and the ability of the

[25] CE SPL RGS (File Number 2018-00300)

channel to facilitate movement of resident and migrant wildlife species. The project will temporarily disrupt or remove vegetation within a short reach of the channel and could impact native wildlife nursery sites, including and especially bird nesting sites. Buildout of subject channel improvements will not result in habitable structures or fencing that would potentially restrict wildlife movement from occurring.

Additionally, the CVMSHCP does not provide coverage or conservation for many other bird species potentially occurring or nesting onsite that are protected by the MBTA. Impacts to birds covered by MBTA could be significant if construction activities are undertaken during nesting season, without the implementation of mitigation measures. CVWD will be required to implement mitigation measures that adhere to conditions set forth under the MBTA to ensure impacts to migratory or other nesting birds will be less than significant. Mitigation measure BIO-3 for the MBTA are provided below, in Section 2.6.7 Mitigation Measures.

Utility Projects

The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways and graded shoulders, service roads, and existing utility structures. One IID power pole located within the channel would be removed, and the corresponding channel bottom will be excavated and lined at this location. Buildout of subject utility relocations will not result in habitable structures or fencing that would potentially restrict wildlife movement from occurring. CVWD will be required to implement mitigation measures that adhere to conditions set forth under the MBTA to ensure impacts to migratory or other nesting birds will be less than significant. Mitigation measure BIO-3 for the MBTA are provided below, in Section 2.6.7 Mitigation Measures.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

No Impact: A review of County and City of Coachella codes and regulations was conducted. Neither the County nor the City in which the Proposed Project will occur has local ordinances protecting biological resources. Both potentially affected jurisdictions, as well as CVWD, are signatories to and participate in the implementation of the Coachella Valley Multiple Species Habitat Conservation Plan. The Proposed Project, including the utility relocation projects, will not conflict with any local policies or ordinances protecting biological resources.

f) Conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

Less that Significant with Mitigation: As previously stated, neither the County of Riverside nor the City of Coachella have local ordinances protecting biological resources. Both jurisdictions and CVWD are signatories to and participate in the implementation of the Coachella Valley Multiple Species Habitat Conservation Plan. The CVMSHCP recognizes the importance of maintaining regional flood control facilities and makes provision for such maintenance even in Conservation Areas.[26] The Proposed Project is located outside of a CVMSHCP Conservation Area. As a Permittee under the CVMSHCP, CVWD must comply with all applicable terms and conditions of the CVMSHCP and Implementing Agreement (See Section 13.0 of the CVMSHCP Implementing Agreement). This includes, but not limited to, implementation of "Land Use Adjacency Guidelines."

[26] See Coachella Valley Multiple Species Habitat Conservation Plan, Section 7.3.1.1: Covered Operation, Maintenance, and Safety Activities within Existing Rights-of-Way or Easements.

Compliance with the mitigation measures presented below (BIO-1, BIO-2, BIO-4, and BIO-10 through 12) including compliance with all requirements of the CVMSHCP, will ensure that the CVSC improvement project will not conflict with any local policy, ordinance, or Habitat Conservation Plan. Therefore, with mitigation impacts will be less than significant.

Utility Projects

The areas impacted by the relocation of the CVWD irrigation lateral, SCG gas pipeline, and IID power powers are located outside of a CVMSHCP Conservation Area. As a Permittee under the CVMSHCP, CVWD must comply with all applicable terms and conditions of the CVMSHCP and Implementing Agreement (See Section 13.0 of the CVMSHCP Implementing Agreement), including implementation of "Land Use Adjacency Guidelines."

Compliance with the mitigation measures presented below (BIO-1, BIO-2, BIO-4, and BIO-10 through 12), including compliance with all requirements of the CVMSHCP, will ensure that the utility relocation portion of the Project will not conflict with any local policy, ordinance, or Habitat Conservation Plan. Therefore, with mitigation impacts will be less than significant.

2.6.7 Mitigation Measures

The Proposed Project is not a new impact to a native habitat nor is it a Covered Activity under the CVMSHCP. Channel maintenance within the Project area has periodically impacted riparian and other habitats in this reach of the channel for decades as a permitted and mitigated activity of the CVMSHCP. The MSHCP and the payment of development impact fees are applicable to lands outside a Conservation Area and that were not disturbed prior to 1996. Therefore, the Proposed Project is not subject to the provisions of the CVMSHCP although several potentially affected species are actively conserved under the Plan.

The CVMSHCP provides full coverage for plan participants (Permittees) and/or projects that are covered by the CVMSHCP for covered species. Exceptions and special provisions include those established by the CVMSHCP for burrowing owl, peninsular bighorn sheep and nesting birds covered under the Migratory Bird Treaty Act (MBTA), and impacts to waters of the State or US. Mitigation for these are discussed below. As a Permittee under the CVMSHCP, CVWD and participating jurisdictions may also need to comply with other applicable terms and conditions of the CVMSHCP and Implementing Agreement (See Section 13.0 of the CVMSHCP Implementing Agreement), which are summarized below and include but are not limited to:

BIO-1 Mitigation Related to the CVMSHCP

To the extent applicable, CVWD shall comply with all terms and conditions of the CVMSHCP and Implementing Agreement including, but not limited to: Implementation of the "Land Use Adjacency Guidelines" as described in Section 4.5 of the CVMSHCP for any portion of the Proposed Project that impact or are adjacent to the Caltrans "Environmentally Sensitive Habitat Restoration Mitigation" area along the west Highway 86 right of way and the channel.

BIO-2 Mitigation Related to MBTA

If ground disturbance, tree or plant removal is proposed between February 1st and August 31st, a qualified biologist shall conduct a nesting bird survey within 7 to 10 days of initiation of grading onsite focusing on MBTA covered species. If active nests are reported, then species-specific measures shall be prepared. At a minimum, grading in the vicinity of a nest shall be postponed till the young birds have fledged. For construction between September 1st and January 31st, no pre-removal nesting bird survey is required.

a. In the event active nests are found, exclusionary fencing shall be placed 200 feet around the nest until such time as nestlings have fledged. Nests of raptors and burrowing owls shall be provided a 500-foot buffer. Ground disturbance between September 1 and January 31 shall be exempt from this requirement.

BIO-3 Mitigation Related to Burrowing Owl

A "take avoidance survey" for the burrowing owl no less than 14 days (in accordance with the Staff Report on Burrowing Owl Mitigation [CDFW 2012]) and no more than 30 days (in accordance with CVWD's Operations and Maintenance Manual) prior to groundbreaking activities are required within and outside of project areas that contain suitable habitat for this species. Additionally, a final survey must be conducted within 24 hours of the initiation of ground disturbance activities in accordance with the CDFW 2012 protocol.

a. If no burrowing owls are detected during those surveys, implementation of ground disturbance activities could proceed without further consideration of this species assuming there is no lapse between the surveys and construction as the protocol states "time lapses between Project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance."
b. If burrowing owls are detected during the take avoidance surveys, avoidance and minimization measures would then be required and could include the establishment of a buffer zone, the passive or active relocation of the individual(s) or other measures approved by the CDFW.

Mitigation Related to Jurisdictional Waters

Permitting associated with the construction of the subject channel improvements will involve regional, state and federal agencies responsible for enforcing the federal Clean Water Act and state water and streambed regulations. These agencies are also part to the Coachella Valley MSHCP and/or its implementation program, including an in-lieu fee program established by the US Army Corps and the Coachella Valley Conservation Commission, which manages the MSHCP.

CVWD, both as a "Permittee" under the MSHCP and independently, has dedicated lands with a variety of habitats for conservation. These lands are meant to mitigate for impacts associated with the operation and management of a variety of CVWD facilities. To the extent required by the permitting processes described below, CVWD will be able to meet all project mitigation requirements.

BIO-4 Prior to the initiation of any construction within areas determined by the Jurisdictional Delineation to be waters of the US, a permit or permits shall be approved and issued by the USACE under Section 404 of the CWA to authorize the discharge of dredged or fill material into waters of the US.

BIO-5 Prior to the initiation of any construction within areas determined by the Jurisdictional Delineation to be waters of the US or the State, a Water Quality Certification shall be approved and issued by the Colorado River RWQCB (Region 7) under Section 401 of the CWA.

BIO-6 Prior to the initiation of any construction within areas determined by the Jurisdictional Delineation to be waters of the State, a permit or permits shall be approved and issued by the Colorado River RWQCB (Region 7) under the Porter Cologne Water Quality Control Act.

BIO-7 Prior to the initiation of any construction within areas determined by the Jurisdictional Delineation to be waters of the State, a 1602 Streambed Alteration Agreement shall be approved and issued by the California Department of Fish and Wildlife.

Other Mitigation Measures

BIO-8 In order to protect against any inadvertent impact to spadefoot toad, it is recommended that substantial temporary pools and orchards be avoided or surveyed for this species and its eggs and tadpoles prior to disturbance to avoid impacts to breeding spadefoots.

BIO-9 Focused surveys shall be conducted to ensure that bats are not present to avoid or minimize harm or disturbance by construction activities. Potential roost sites include but may not be limited to, the Highway 111 and Airport Boulevard bridges, the UPRR bridges, and any other structures in the project area that could provide roosts for bats.

BIO-10 Rail surveys shall be conducted between March 15th and May 31st, and require a minimum of three visits for California black rail (Conway et al 2002) and two for Yuma Ridgway's (clapper) rail (USFWS 2000). If either species is found to be present, consultation with the wildlife agencies will be required prior to any impacts to habitat.

BIO-11 Invasive species control shall be implemented During Construction to ensure contracted machinery are not introducing invasive species into the channel. These actions include machinery wash down prior to entry and exit at controlled and monitored locations. Machinery containing mud and potential sources of invasive seed banks will not be permitted. Wash down area waste shall be contained and regularly disposed of at a proper off-site facility.

With the implementation of the mitigation measures set forth above, including any requisite participation in the CVMSHCP, project-related impacts to the CVMSHCP-covered species, special-status species not covered by the CVMSHCP, nesting birds protected under the MBTA and USACE and/or CDFW jurisdictional areas will be mitigated to less than significant levels.

2.6.8 Significance After Mitigation

Impacts to biological resources associated with construction of the Proposed Project will be reduced to a less than significant level by adherence to the mitigation measures set forth above. Operational impacts associated with the Proposed Project will be less than significant.

2.6.9 Cumulative Impacts

The project has been designed to adhere to local, state, and federal regulations related to the protection of biological resources. An effort has been made to ensure that the Proposed project meets the minimum flood control design standards while minimizing the project's impact on channel vegetation and adjoining land. Impacts to existing channel riparian habitats have been minimized. If necessary, project impacts may be replaced through the payment of mitigation credit fees in accordance with the CVCC/USACE In-Lieu Fee Program currently in effect, and or the restoration of habitats elsewhere in the Coachella Valley. Impacts to channel habitats will also be mitigated through adherence to appropriate permits issued by the USACE, CDFW and CRWQCB. It should also be noted that on-going channel lining and other on-going channel improvements, as well as periodic channel maintenance results in the alteration (not elimination) of channel habitats in these drainages as a function of channel maintenance. Therefore, the channel improvements would contribute to a minimal one-time impact to channel habitats and a modest one-time impact to other jurisdictional waters

The geographic scope for the analysis of potential cumulative biological impacts includes the immediate vicinity around the subject reach of the CVSC. Using the summary of projections method to analyze cumulative impacts set forth in State CEQA Guidelines Section 15130 (b)(1)(B), impacts have been

assessed on both a regional and local level. The primary documents used to determine cumulative impacts included the project biological resources assessment and the CVMSHCP, which is designed to ensure the long-term protection of sensitive and listed biological resources in the project area. Based upon these assessments, the Project will not have an effect on any federally listed plant or wildlife species.

The species of concern in the project area are covered species under the CVMSHCP. As described above, potential impacts to biological resources will be largely avoided or mitigated to less than significant levels with implementation of the mitigation program provided above. CVWD shall also comply with all applicable terms and conditions of the CVMSHCP and its Implementing Agreement including, but not limited to implementation of the "Land Use Adjacency Guidelines", which are set forth in the above mitigation measures. Therefore, the project's impacts to biological resources will be less than significant and the project's contribution to cumulative impacts will not be cumulatively considerable.

2.7 Cultural and Tribal Cultural Resources

2.7.1 Introduction

This section evaluates the potential for the Proposed Project to result in adverse impacts to cultural resources. Cultural resources include Native American tribal cultural resources, unique paleontological or geological resources, archaeological resources, historic architectural resources, and human remains. Mitigation measures to reduce impacts to a less than significant level are identified, where appropriate. This section is based primarily on the Cultural Resources Report prepared for the project by CRM TECH (2016)[27], which is Appendix G of this EIR.

2.7.2 Thresholds of Significance

Federal, State, and Local thresholds or criteria have been used to evaluate the significance of project-related impacts on cultural resources pursuant to CEQA.

CEQA Guidelines

The California Environmental Quality Act (CEQA) prescribes how the Lead Agency must address issues related to archaeological, historic, and paleontological resources. The State CEQA Guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources. The definition also includes resources included in a local register of historical resources or identified as significant in an historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code. According to Public Resources Code Section 5020.1, "historical resources" include, but are not limited to an object, building site, area, place, record, or manuscript that is historically or archaeologically significant.

According to Appendix G of the CEQA Guidelines[28], the project would have a significant effect on cultural or paleontological resources if it would:

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

[27] "Identification and Evaluation of Historic Properties for the Coachella Valley Stormwater Channel Improvement Project", prepared by CRM TECH., February 8, 2016.

[28] Appendix G: Environmental Checklist Form, "California Environmental Quality Act (CEQA) Statute and Guidelines," 2015.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d) Disturb any human remains, including those interred outside of dedicated cemeteries?

According to recent Appendix G changes and additions under the heading *Tribal Cultural Resources* per Assembly Bill (AB) AB 52, the following thresholds also apply:

a) Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

2.7.3 Regulatory Framework

Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) was established in 1966 by the Advisory Council on Historic Preservation (ACHP) with the goal to encourage federal agencies to factor historic preservation into federal project requirements. ACHP is an independent federal agency that promotes the preservation, enhancement, and productive use of the nation's historic resources, and advises government leaders on national historic preservation policy. The ACHP defines "historic properties" as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places."

Section 106 of the NHPA applies when two thresholds are met: 1) there is a federal or federally licensed action, including grants, licenses, and permits, and 2) that action has the potential to affect properties listed in or eligible for listing in the National Register of Historic Places. Section 106 requires each federal agency to identify and assess the effects of its actions on historic resources. If it is determined that a proposed action has the potential to affect historic properties, the federal agency must identify the appropriate State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO) to consult with during the process.

The federal agency reviews background information, consults with the SHPO/THPO and others, seeks information from knowledgeable parties, and conducts additional studies as necessary. If the federal agency finds that no historic properties are present or affected, it provides documentation to the SHPO/THPO, who has 30 days to provide written comment or objection. If there is no objection, the agency proceeds with its undertaking. If the agency finds that historic properties are present, it proceeds to assess possible adverse effects.

National Register of Historic Places

Authorized under the NHPA, the National Register of Historic Places is the nation's official list of cultural resources that qualify for preservation. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. The following criteria are used to determine eligibility for inclusion in the National Register. These criteria have been developed by the National Park Service as provided for in the NHPA:

a) Are associated with events that have made a significant contribution to the broad patterns of our history;
b) Are associated with the lives of persons significant in our past;
c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
d) That yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

In addition to the criteria for evaluation above, the National Register maintains a list of property types or circumstances that generally do not qualify for the National Register. These are: cemeteries, birthplaces or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years.

State

California Public Resources Code

The California Environmental Quality Act (CEQA) is the principal statute governing the environmental review of projects within the State. The State of California's Public Resources Code (PRC) establishes the definitions and criteria for "historical resources," which require similar protection to what the NHPA mandates for historic properties. According to PRC Section 5020.1(j), a "historical resource includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California."

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of PRC Section 21083 regarding unique archaeological resources.

In addition, PRC Section 5097.98 states that if Native American human remains are identified within a project area, the landowner must notify and consult with the Native American Most Likely Descendant (MLD), as identified by the NAHC, to develop a plan for proper treatment and/or removal of the human remains and associated burial artifacts. These procedures are also addressed in Section 15046.5 of the CEQA Guidelines and within the California Health and Safety Code (see discussion below).

Assembly Bill 52

Assembly Bill (AB) AB 52 was passed by the California Legislature and signed into law by the Governor in 2015. It established a new category of resources in the California Environmental Quality Act called Tribal Cultural Resources. (Public Resources Code § 21074.) "Tribal cultural resources" are either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
AB 52 establishes a formal project consultation process for California Native American tribes and lead agencies regarding tribal cultural resources, referred to as government-to-government consultation. Per Public Resources Code Section 21080.3.1.(b), the AB52 consultation process must begin prior to release of an environmental impact report, mitigated negative declaration, or negative declaration. Native American tribes to be included in the formal consultation process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

California Register of Historical Resources
For CEQA purposes, "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the Lead Agency (Title 14 CCR Section 15064.5(a)(1)-(3)). CEQA guidelines mandate that "generally a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR Section 15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
b) Is associated with the lives of persons important in the State's past.
c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
d) Has yielded, or may be likely to yield, information important in prehistory or history. (Public Resources Code section 5024.1(c))

California Health and Safety Code
The California Health and Safety Code Section 7050.5 regulates the treatment of human remains. According to the Code, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined that the remains are not subject to further investigation. If the coroner recognizes, or has reason to believe that the human remains are those of a Native American, he or she shall contact the NAHC to determine the Most Likely Descendant (MLD). Consultation with the designated MLD will determine the final disposition of the remains.

Local

The City of Coachella has policies set forth in its General Plan that are part of a local regulatory framework within which cultural resources are managed. Specifically, the City's General Plan *Sustainability + Natural Environment Element* and *Municipal Code Section 15.48* both address the conservation of sensitive cultural and/or historical resources.

Goal 12. Cultural Resources and Sites. Preserved and protected cultural resources that provide the community with significant cultural, scientific, or education value.

Policies

12.1. Disturbance of human remains. In areas where there is a high chance that human remains may be present (areas along the Whitewater Rivers/CVSC, on Tribal lands, on areas with previously undisturbed soil, in the washes and canyons found in the eastern areas of the Planning Area, and areas of historic settlement), require projects to conduct survey to establish occurrence of human remains, if any. If human remains are discovered on project sites, the project must implement mitigation measures to prevent impacts to human remains in order to receive permit approval.

12.2. Tribal Coordination. Require notification of California Native American tribes and organizations of projects that have the potential to adversely impact cultural resources.

12.3. Protected sites Require sites with significant cultural resources to be protected.

12.4 Preservation of historic resources. Where practical, encourage the preservation of historic resources.

12.5 Document historic resources. When it is not practical to preserve a historic resource, require the architectural details and design elements of historic structures to be preserved during renovations and remodels.

12.6 Discovery of human remains. Require that any human remains discovered during implementation of public and private projects within the City be treated with respect and dignity and fully comply with the California Native American Graves Protection and Repatriation Act and other appropriate laws.

12.7 Paleontological resources. Require any paleontological artifacts found within the City or Sphere of Influence be reported to the City and temporarily loaned to local museums like the Western Science Center for Archaeology and Paleontology, in Hemet, CA.

12.8 Disturbance of human remains. In areas where there is a high chance that human remains may be present (areas along the Whitewater Rivers/CVSC, on Tribal lands, on areas with previously undisturbed soil, in the washes and canyons found in the eastern areas of the Planning Area, and areas of historic settlement), require projects to conduct survey to establish occurrence of human remains, if any. If human remains are discovered on project sites, the project must implement mitigation measures to prevent impacts to human remains in order to receive permit approval.

2.7.4 Environmental Setting

A cultural resources survey and report were prepared for the proposed CVSC project[29], which serves as the basis for much of the following discussion. The Coachella Valley has been home to Native Americans for millennia. Pre-European occupation in the Valley has been pieced together from a wide variety of studies and assessments prepared for large scale planning efforts and for individual projects. Knowledge and information on native culture, technology, ethnobotany, and other cultural attributes continue to emerge as additional research adds to current data, interpretation, and understanding. The following discussion provides an overview current state of knowledge about the Native American groups that occupied the region. A more detailed discussion can be found in Cultural Resources Report in Appendix G of this EIR.

[29] "Identification and Evaluation of Historic Properties for the Coachella Valley Stormwater Channel Improvement Project", prepared by CRM TECH. February 8, 2016.

Pre-Historic Culture in the Planning Area

Based upon the current regional knowledge of artifacts and habitation sites dating back approximately 12,000 years, archaeologists have divided the pre-European epoch into five periods: Early Man Period, Paleo-Indian Period, Early Archaic Period, Late Archaic Period, and the Late Prehistoric Period. The earliest periods were distinguished by the use of large stone points to hunt and process large late ice-age mammals, and by the lack of milling stones and other food grinding implements. From about 4000 years ago, seeds and grains and their processing became more important, and stone-tools became more sophisticated; there was also a corresponding increase in cultural complexity and variation.

By about 1500 years ago, at the end of the archaic period, burial practices had changed to cremations and a wider food base was exploited. Milling of foodstuffs also continued extensively. This new period, the Late Prehistoric, involved important cultural changes including the introduction of pottery and the bow and arrow. The Late Prehistoric pre-ceramic transitional phase from 1200 to 1500 years ago; ceramics were locally introduced about 1200 years ago. Pottery was an innovation of peoples of the Colorado River, and its presence in the Coachella Valley indicates that contact occurred between inhabitants of the Coachella Valley and Colorado River settlements. From about 800 years ago to just before contact with Europeans, there is evidence of extensive contact and trade with tribes of the Colorado River. This included the distribution of pottery across the upper Colorado and Mojave Deserts. It is from this period that ethnic or tribal affiliations are best known.

The Coachella Valley encompasses a wide range of environments, which have been inhabited by different indigenous groups over thousands of years. These included the low desert fresh water lakes of the various stands of Ancient Lake Cahuilla, the palm oases and mesquite vegetation associated with fault zones and other areas of high groundwater, alluvial fan areas, mountain canyons, and the mountains themselves.

In the CVSC planning area, the oldest cultural remains date back about 2,700 years and were discovered near the intersection of Jefferson Street and Fred Waring Drive along the ancient shoreline of Lake Cahuilla (Love 1996). Numerous types of habitation and village sites developed throughout the Valley. These included villages occupied for extended periods of time, milling sites used seasonally as particular foods became available, lithic workshops and quarries for making stone tools and weapons, and rock art sites that were used for artistic/religious expression.

The Cahuilla Indians

The Cahuilla Indians are the most recently identifiable native culture to evolve in the Coachella Valley. The Cahuilla were a Takic-speaking, hunting and gathering people from the Great Basin region of Nevada, Utah and eastern California whose migration into southern California occurred sometime between 1000 BC and AD 500. The Cahuilla are generally divided into three groups by anthropologists: the Pass Cahuilla of the Banning-Beaumont area, the Mountain Cahuilla from the Santa Rosa and San Jacinto Mountains, and the Desert Cahuilla from the western Coachella Valley east to the Salton Sea.

The Cahuilla did not have a single name that referred to an all-inclusive tribal affiliation; rather, membership was in terms of lineages or clans, and each belonged to one or two main divisions of the people, known as moieties. Members of clans in one moiety had to marry into clans from the other moiety. Individual clans had villages, or central places, and territories they called their own. Each clan, or lineage, had its own food harvesting areas, ceremonial house, and lineage chief. However, a number of lineages are known to have cooperated with one another for political, social and economic purposes.

Surveys performed by the U.S. Government Land Office (GLO) in the mid-1850s noted a large number of Native American villages, or rancherias, in the Valley. All or most of these settlements are believed to have been settlements of the Desert or Pass Cahuilla people. Prominent settlements were located adjacent to major resource areas, including the shorelines of Lake Cahuilla, along the “cove communities” areas

supported by shallow wells, mesquite and wildlife resources, and in the Indian Canyons areas of Palm Canyon. Seasonal occupation sites were also associated with palm oases, which were an important source of water, food and fiber.

It was not until the 1770s that the Cahuilla first encountered Europeans, when Spaniards crossed through Cahuilla territory in search of new land routes between Mexico and northern California. As time passed, relations between European settlers and the Cahuilla became strained due to conflicts over land ownership and exploitation, and religious and cultural practices. European disease, to which the Cahuilla had no immunity, furthered the gap between Indian and non-Indian relations. A smallpox epidemic in the early 1860s decimated the Cahuilla population, which declined from an estimated 6,000 to 10,000 people to only 2,500 individuals.

By the time the Valley was re-surveyed by the U.S. government in the early twentieth century, most of the villages and rancherias noted from earlier surveys had vanished, and signs of Euroamerican influence, such as fences and irrigation ditches, were observed. The Cahuilla continue to inhabit parts of the Coachella Valley today, and are mostly affiliated with one or more of the Indian reservations in the Coachella Valley. Among these are the Torres Martinez, Augustine, Agua Caliente, Cabazon, and Morongo Reservations. The proposed channel improvement project does not cross Reservation Lands of any of the local Tribes, including the Aqua Caliente Band of Cahuilla Indians, Twenty-Nine Palms, Torres-Martinez or Cabazon Tribes.

Archaeological resources associated with Native American occupation are less numerous in CVSC planning area. This is generally due to drier conditions and less vegetation and wildlife in these areas. Areas supporting the highest density of Native American resources include the shoreline of Ancient Lake Cahuilla, and the numerous vegetation scarps with desert fan palms and mesquite associated with the diked and perched groundwater along the San Andreas Fault Zone and on the lower valley floor. (Arkush 1989, Drover 1989). Most sites associated with these areas were typically small gathering and processing sites characterized by grinding stones, milling features and occasional large rock-lined roasting pits (Bean and Saubel, 1972; Bean 1972; Barrows, 1900).

The Historic Period

Historically significant sites are generally more than forty-five to fifty years of age, but range from the period of the earliest European contacts, around the end of the 1700's to about the end of World War II. Types of potentially significant sites range from permanent trails and highways to living areas and small-scale remains of single activities. The following discusses the historic period and identifies significant historical resource areas.

The Coachella Valley region was first explored by Spaniards making forays northward from Mexico along the coast and the Colorado River. The earliest documented period of Spanish influence began in 1769 when explorers moved into what was then referred to as Upper California to establish a military, political and religious foothold. The development of land routes to supply inland missions brought the Spanish into the region in the 1770's. In 1821, although there is no historical evidence of settlements in the Coachella Valley, the region fell under the influence of Mexico, as it secured its independence from Spain under the Treaty of Cordova. The issuance of land grants and the establishment of agricultural enterprises, under the organization of rancheros, dominated the region for the next thirty years.

The defeat of Mexico in the Mexican-American War and the signing of the Treaty of Guadalupe Hidalgo in 1848 ushered in a new era. With the region under American control and the discovery of gold in California, the stage was set for admittance of California into the union in 1850, and led to the influx of peoples from many countries. The first U.S. Government Surveys were made in the Coachella Valley in 1855-56, by surveyors Henry Washington, John La Croze and James G. McDonald, who observed a number of trails and roads crossing the area.

Non-Indian settlement in the Coachella Valley began in earnest in the 1870s, with the establishment of railroad stations along the Southern Pacific line. The rate of settlement increased significantly in the 1880s, after public lands were opened for claims under the Homestead Act, Desert Land Act, and other Federal land laws. With the availability of underground water resources, farming became the dominant economic activity in the Coachella Valley.

20th Century Settlement and Development

Most of the Coachella Valley remained unsettled and devoid of any evidence of land development until around the turn of the twentieth century. The only features recorded during that time were the Southern Pacific Railroad, Bradshaw Trail, and another trail along the base of the Little San Bernardino Mountains at the mouth of West Wide Canyon. A segment of the Bradshaw Trail passed south of the planning area in the vicinity of Mecca. Several railroad construction workers' camps were present by the early 1900s.

In 1926, the Federal government established the National Highway System, which included the Ocean-to-Ocean Highway that ran through the Coachella Valley along its central axis and with portions "along the Southern Pacific Railroad". Exact dates of construction are unclear, with archival sources tracing it to the late 1930s. Right-of-way for this highway was granted by the Federal government in November of 1938, which was delineated as U.S 60/70/99.

The date palm was introduced to the area in 1904 and by the late 1910s the date industry was firmly established, extending from present-day Cathedral City south beyond Indio, which became the central agri-business district. The date palm became the area's main agricultural staple and the Coachella Valley became known as the "Arabia of America". However, as the easily accessible groundwater resource was tapped, its limitations were quickly realized and further growth of agriculture was limited until the completion of the Coachella Branch of the All-American Canal in 1949, which brought Colorado River water to the Valley for irrigation and other uses.

Paleontological Resources

The remains of prehistoric life (fossils) such as shells, bones and teeth of fish, reptiles, and mammals, leaf assemblages and petrified wood, as well as fossil traces such as internal and external molds, impressions, and casts are known as paleontological resources. In general, paleontological resources only occur in sedimentary rock such as sandstone, siltstone, mudstone, claystone, and shale. As such, the specific rock and soil types of a locale are useful indicators in determining the likelihood for the presence of paleontological resources.

Soils on the Valley floor are generally post-Pleistocene age alluvium from the surrounding mountains. Such soils are generally considered recent by paleontological standards and therefore have little potential to yield fossilized remains. The project planning area is located within the boundary of the ancient Lake Cahuilla, an area where most paleontological resources in the Valley have occurred. However, the project area has been subject to many years of flooding, agricultural activities and other disturbance and development. Sensitive paleontological resources are not expected to be encountered during the implementation of this project.

2.7.5 Existing Conditions

The following summarizes the history of human occupation of the Coachella Valley, first by those who first migrated to North American from northeast Asia via the Bering Strait approximately 12,000 years ago, and millennia later with the arrival of Europeans at the end of the 18th century. The earliest periods of human occupation were distinguished by artifacts of hunting and gathering, including stone arrow and spear points, to milling stones and other food grinding implements. From about 4,000 years ago, seeds and grains and their processing became more important, and stone-tools became more sophisticated; there was also a

corresponding increase in cultural complexity and variation. By about 1,500 years ago, at the end of the archaic period, burial practices had changed to cremations and a wider food base was exploited. Milling of foodstuffs also continued extensively.

Later periods involved important cultural changes, including the introduction of pottery and the bow and arrow. The Late Prehistoric pre-ceramic transitional phase from 1,200 to 1,500 years ago; ceramics were locally introduced about 1,200 years ago. Pottery was an innovation of peoples of the Colorado River, and its presence in the Coachella Valley indicates that contact occurred between inhabitants of the Coachella Valley and Colorado River settlements. From about 800 years ago to just before contact with Europeans, there is evidence of extensive contact and trade with tribes of the Colorado River. This included the distribution of pottery across the upper Colorado and Mojave Deserts. It is from this period that ethnic or tribal affiliations are best known.

The oldest cultural remains known to existing within the east valley date back about 2,700 years and were discovered near the intersection of Jefferson Street and Fred Waring Drive along the ancient shoreline of Lake Cahuilla. Numerous types of habitation and village sites were developed throughout valley. These included villages occupied for extended periods of time, milling sites used seasonally as particular foods became available, lithic workshops for making stone tools and weapons, and rock art sites used for artistic/religious expression.

History of Planning Area Settlement

Archaeological resources in the planning area include numerous village sites associated with the shoreline of ancient Lake Cahuilla, which was created and maintained by inflows of the Colorado River. As the lake level fell approximately 500 years ago, the Cahuilla moved their villages into or near the mouth of mountain canyons where most of their food and other resources were to be found. Dependable water sources were essential, especially after the retreat of ancient Lake Cahuilla. Canyons of the San Jacinto and Santa Rosa Mountains were important habitation areas during Lake Cahuilla's last stand. As stated by Bean, et al., "It can be assumed that spring sites were places known to the Cahuilla and used by them, and that there were villages or significant use sites near all major springs."[30]

Records indicated that Spanish explorers entered the Coachella Valley region in the 1770s, but there is no evidence of European settlements until about 1812, when the region fell under the influence of Mexico, as it secured its independence from Spain. The issuance of land grants and the establishment of agricultural enterprises, under the organization of rancheros, dominated the region for the next thirty years. Following the end of the Mexican-American War in 1848 the stage was set for admittance of California into the union in 1850, and led to the influx of peoples from many countries. The first U.S. Government Surveys were made in the Coachella Valley in 1855-56, by surveyors who observed a number of trails and roads crossing the area.

Until the beginning of the 20th century, most of the Coachella Valley remained unsettled and devoid of any evidence of land development until around the turn of the twentieth century. The only features recorded during that time were the Southern Pacific Railroad, Bradshaw Trail, and another trail along the base of the Little San Bernardino Mountains at the mouth of West Wide Canyon. Several railroad construction workers' camps were present by the early 1900s. Future roadways included the Ocean-to-Ocean Highway that run along today's Union Pacific Railroad alignment. During the 1910s, the County of Riverside improved the Bradshaw Trail, originally built through the Valley in the 1880s, into a county trail (the forerunner of today's Highway 111), which further paved the way for settlement and growth in the Coachella Valley.

[30] "The Cahuilla and the Santa Rosa Mountain Region: Places and Their Native American Association", Lowell J. Bean, Sylvia Brakke Vane and Jackson Young. Edited by Russell L. Kaldenberg. Cultural Systems Research, Inc. for the US Bureau of Land Management. October 1981.

With the railroad, a strings of neighboring communities across the desert floor, including the town of Thermal, which was established around a station on the Southern Pacific Railroad. Both the station and the town were originally named Kokell, reportedly after the railroad agent at the time. A post office was established under that name in 1901, and the townsite plat was filed by H.W. Cottle and Company the next year (ibid.; Grantham 1984:39). A few months later, the company sold the townsite to Horace Adin Green, who subsequently changed the names of both of the post office and the town to Thermal "because there was so much heat there". Thermal was at least one of the two locations where the Southern Pacific Railroad Company first discovered artesian water in 1888.

Large-scale agriculture was initiated in the valley with the introduction of the date palm and citrus in 1904. By the late 1910s, the date industry was firmly established, extending from present-day Cathedral City south beyond Indio and Coachella, which became the central agri-business district. As the easily accessible groundwater resource was tapped and drawdown made it progressively inaccessible in the east valley, further growth of agriculture was limited until the completion of the Coachella Branch of the All-American Canal in 1949, which brought Colorado River water to the Valley for irrigation.

Paleontological Resources

In general, paleontological resources only occur in sedimentary rock such as sandstone, siltstone, mudstone, claystone, and shale. Specific rock and soil types of a locale are useful indicators in determining the likelihood for the presence of paleontological resources. Soils on the valley floor portion of the planning area are generally post-Pleistocene age alluvium from the surrounding mountains.[31] Such soils are generally considered recent by paleontological standards and therefore have little potential to yield fossilized remains. The subject CVSC project area is located within the boundary of the ancient Lake Cahuilla, an area where most paleontological resources in the Valley have occurred.[32]

Occasionally fossils may be exposed at the surface through the process of natural erosion or as a result of human disturbances; however, they generally lay buried beneath the surficial soils. Thus, the absence of surface fossils does not preclude the possibility of their being present within subsurface deposits, while the presence of fossils at the surface is often a good indication that more remains may be found in the subsurface.

The Proposed project would be constructed upon previously disturbed and excavated lands comprised of alluvial fan and aeolian (windblown) deposits, including those from the adjoining channel to construct levees and service roads. The project planning area is well removed from intact bedrock or sedimentary rock that most typically harbors paleontological resources. The Proposed Project would be constructed on the low-lying valley floor and on lands that have been previously disturbed and developed. Project area soils are from the Holocene epoch, of relatively recent age, and are therefore not expected to contain paleontological resources. Therefore, the planning area has a low, less than significant potential to contain paleontological resources or for paleontological resources to be impacted.

Planning Area Cultural and Historic Resources

Area of Potential Effect (APE)

The Area of Potential Effect for the Proposed Project was established by the project archaeologists in consultation with CVWD and project engineers. It is meant to encompass the maximum extent of ground disturbance required to construct channel improvements and maintain the facility and encompasses all those lands potentially affected by alternatives to the Proposed Project, which are analyzed in Section 4 of this

[31] "Paleontological Resources Assessment – College Park Specific Plan", prepared by CRM TECH. May 2009.

[32] "Paleontologic Resources Technical Report – City of La Quinta General Plan", prepared by CRM TECH. August 2010.

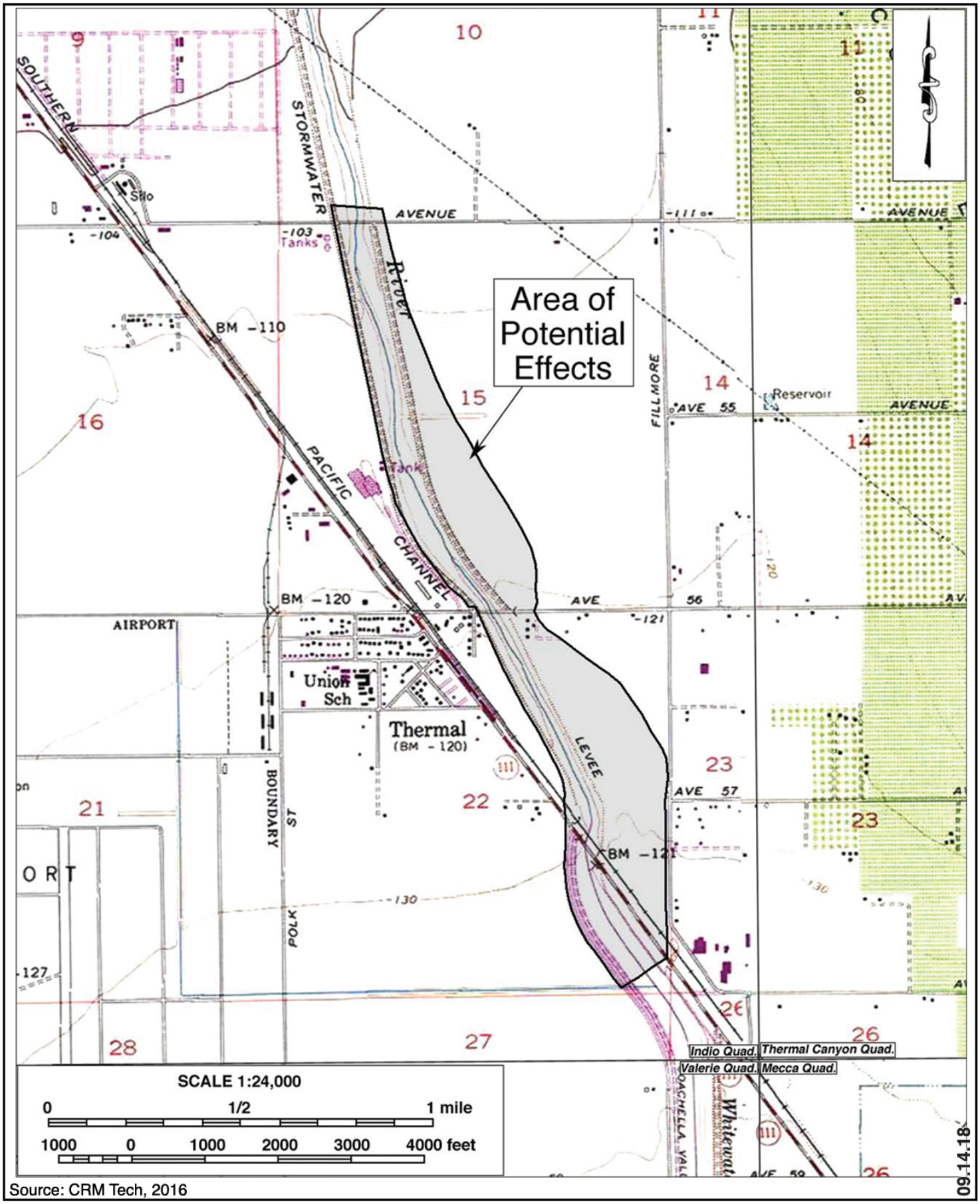
DEIR. The APE also encompasses adjacent properties containing buildings or other built-environment features of historical origin with potential to receive visual, atmospheric, or other indirect effects due to the nature, scope, and scale of the project. The APE along the subject channel reach measures approximately two miles in total length with new disturbance essentially limited to areas within the channel. Limited lands outside the channel will also be disturbed, being primarily those associated with the necessary relocation of Irrigation Lateral 99.8, which crosses the channel just north of the UPRR bridges.

Approach and Methodology

Cultural resource research and analysis was initiated with a literature search and review. The historical/archaeological resources records search was conducted 2015 and 2016 at the Eastern Information Center (EIC), University of California-Riverside. A standard one-mile radius was adopted for the record search. A variety of additional sources were also researched, including the National Register of Historic Places, California Register of Historical Resources, California Historical Landmarks, California Points of Historical Interest, Historical Landmarks of Riverside County, California Historical Resources Inventory and the California Historic Bridge Inventory.

A written request was submitted to the State of California's Native American Heritage Commission (NAHC) for a records search in the commission's Sacred Lands File. In response, the NAHC identified the potential for Native American cultural resources to be impacted by the channel improvement project. During the preparing of the cultural resource survey, direct communication was initiated with the Torres-Martinez Desert Cahuilla Indians, Agua Caliente Band of Cahuilla Indians and the Cabazon Band, please list all. Letters were provided by local Tribes, including those tribes whose lands could be directly impacted by the project. Representatives of each of Coachella and Riverside County were also contacted, as were local historical and archaeological societies. All correspondence is provided in Appendix G.

The field surveys of the APE were carried out in 2015 and 2016 and were conducted to determine the occurrence of sensitive cultural resources, including archaeological, historic and architectural resources (refer to Appendix G). The portions of the APE confined within existing paved streets were surveyed at a reconnaissance level by driving along the project route and visually inspecting the surrounding ground surface for any indications of potential cultural resources. Areas containing visible ground surface, such as channel bottom, embankments and levees, were surveyed on foot at an intensive level by walking parallel transects spaced 5-15 meters (approximately 33-50 feet) apart.



Source: CRM Tech, 2016

Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Area of Potential Effect
Coachella Valley Water District

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Exhibit
2-4

Cultural Resources Identified

Project research included a review of the records in the Eastern Information Center (EIC) at the University of California-Riverside, as well as the Caltrans Historic Bridge Inventory. The results of these research procedures indicate that five historic-period sites, 33-009498, 33-017259, 33-017913, 33-019859, and 33-020750, were previously recorded as lying within or partially within the APE. One of these sites, 33-019859, was recorded in 2011 as a circa 1940s domestic refuse pit that is evidently no longer in existence. The other four sites represent the Southern Pacific (now Union Pacific) Railroad, a segment of Fillmore Street, and two segments of the CVSC itself. All of them were previously determined not to be eligible for listing the National Register of Historic Places or the California Register of Historical Resources, and the project cultural resource assessment concurs with those conclusions. Therefore, these four sites do not meet the definition of "historic properties" or "historical resources."

In addition to the sites listed above, three prehistoric isolates and six historic-period isolates were observed within the APE during the field survey and subsequently recorded as 33-024735 to 33- 024743 in the California Historical Resources Inventory. The prehistoric isolates consist of two ceramic sherds and a quartz core, and the historic-period isolates consist of glass shards, bottle bases, and a complete bottle. Occurring out of depositional context, such isolated artifacts do not constitute archaeological sites and are not considered potential "historic properties"/ "historical resources."

During the field survey (November 2015), a modest residential building of mid-20th century character was noted in the APE. It evidently represents the remnant of a ranch complex that dated to the 1940s-1950s but has been mostly demolished and replaced by a mobile home park. Located on the periphery of the complex, the building appears to have served as a secondary residential unit on the property, and has since been altered to such an extent that it no longer exhibits sufficient historic character to be considered a potential "historic property"/"historical resource." Consequently, the building requires no further study.

No other features or artifacts of prehistoric or historical origin were encountered during the course of this study, and the subsurface sediments in the APE appear to be relatively low in sensitivity for potentially significant prehistoric archaeological remains in buried deposits.

Description of Cultural Resources

The following summarizes the cultural resources, both historic and archaeological, that occur within or adjacent to the project APE. These include such resources as the UPRR bridges, portions of the CVSC, Fillmore Street and a variety of aforementioned isolates, including pottery shards, mid-century glass bottles, and lithic core.

Southern (Union) Pacific Railroad (Site 33-009498)

The subject segment of today's Union Pacific Railroad lines and bridges were recorded in 1999 as Site 33-009498 (CA-RIV-6381H) representing the Coachella Valley line of the Southern Pacific Railroad, which was constructed in 1876-1877 as a part of the Southern Pacific main line to New Orleans. During a 2005 study, the site was evaluated for historic significance and found not to retain historic integrity in the aspects of design, materials, setting, and feeling, and not to meet any of the criteria for listing in the National Register of Historic Places or the California Register of Historical Resources. The rail line lies across the southern end of the APE in the northwest-southeast direction and remains fully functional as a part of the Union Pacific Railroad system. Like other components of the historical transportation infrastructure that are still in use, it demonstrates no distinctively historical characteristics due to repeated upgrading and constant maintenance.

Segments of CVSC (Sites 33-017259 & 33-017913)
Site 33-017259 consists of a segment of the CVSC lying in and near the southernmost portion of the project APE. As discussed, the channelization of the Whitewater River into the CVSC is the results of flood-control work by the Coachella Valley Stormwater District, and later the CVWD, since the 1910s. The site was recorded in 2008 as two parallel earthen levees flanking the channel, each with a dirt access road on top, although only portions are in a levee condition. At the time of recordation, Site 33-017259 was determined not to be eligible for the National Register of Historic Places or the California Register of Historical Resources. No significant changes were observed in the condition of the site during the field survey.

Site 33-017913 (CA-RIV-9456H) was recorded in 2009 as another segment of the CVSC that extends into the northern end of the project APE. It was similar in character to Site 33-017259 to the south, except that portions of the channel at this location had been lined with concrete prior to 2012. Like Site 33-017259, this segment of the CVSC was determined ineligible for the National Register of Historic Places or the California Register of Historical Resources.

Refuse Pit (Site 33-019859)
Site 33-019859 (CA-RIV-10106H) consisted of a refuse pit that was found in 2011 some 30 centimeters below the surface on the northern edge of Airport Boulevard and the eastern edge of the current project APE. Containing 1940s-era domestic refuse, the site was discovered during subsurface trenching operations, and was presumably removed at the time. During the field survey for this EIR, no features or artifacts of historical origin were observed at or near the recorded site location. Therefore, Site 33-019859 no longer exists.

Segment of Fillmore Street (Site 33-020750)
The segment of Fillmore Street lying to the southwest of the CVSC (Site 33-020750 (CA-RIV-10672H)) represents also extends into the southernmost portion of the project APE. It was present along the current alignment as a dirt road at least by 1941, and became a paved road by 1956. The site was first recorded in 2012, and was evaluated in 2014 as not being eligible for the National Register of Historic Places or the California Register of Historical Resources. A two-lane asphalt road flanked by soft shoulders, the portion of Fillmore Street in the project APE remains in full service today. As with the numerous other public roadways of historical origin, Fillmore Street shows no distinctively historical characteristics.

Isolates
A variety of isolates comprised mainly of mid-century glass bottles and one lithic core, were identified within the project APE. These include Isolates 33-024735, 33-024736, 33-024737, 33-024738, 33-024739, 33-024740, 33-024741, 33-024742, and 33-024743. Occurring out of depositional context, such isolated artifacts do not constitute archaeological sites and are not considered potential "historic properties"/"historical resources."

2.7.6 Project Impacts

Application of the Criteria of Adverse Effect
Pursuant to 36 CFR 800.5(b)(1) and Calif. PRC§21084.1, the following summarizes the conclusions of the project archaeologists regarding potential project impacts.

- No "historic properties" or "historical resources" are present within the project APE, and thus the undertaking will have No Effect/No Impact on any "historic properties"/ "historical resources."

Impact Analysis

This analysis addresses potential impacts associated with the channel improvement project, including limited ground disturbance outside the channel associated with the relocation of the CVWD irrigation lateral, SCG gas pipeline, and IID power poles (see Exhibits 1-6A through 1-6D). The following discussion evaluates the potential impacts to sensitive cultural resources, including Tribal cultural resources, and other archaeological, historic and paleontological resources, as a result of the construction of the Proposed Project.

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

No Impact. As discussed in Section 2.7.5 above, no "historic properties" or "historical resources" are present within the project APE, and thus the undertaking will have No Effect/No Impact on any "historic properties"/ "historical resources", as defined in § 15064.5 of the CEQA Guidelines.

Utility Projects

No "historic properties", "historical resources" or "archaeological resource" are present within the project APE, which includes the IID project sites and most of the CVWD irrigation lateral. Also, the western portions of the SCG gas line relocation lies outside the APE but in areas within disturbed and graded portions of the Highway 111 right of way. While resources are not expected to be encountered during excavations associated with the subject utility projects, mitigation measure CUL-1 will further ensure that the Project-related utility projects will have No Effect/No Impact on any "historic property", "historical resource" or "archaeological resource", as defined in § 15064.5 of the CEQA Guidelines.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

No Impact. The cultural resources study prepared for the project provides CVWD with the necessary information and analysis to determine whether the undertaking would have an effect on any archaeological resources or "historic properties," as defined by CEQA Guidelines §15064.5, that may exist within the project APE. The results of this research and analysis indicate that these historic-period sites were previously recorded as lying within or partially within the APE. Site 33-019859 was recorded in 2011 as a circa 1940s domestic refuse pit that is evidently no longer in existence.

The other four sites represent the Southern Pacific (now Union Pacific) Railroad, a segment of Fillmore Street, and two segments of the CVSC itself. All of them were previously determined not to be eligible for listing the National Register of Historic Places or the California Register of Historical Resources, and the present study concurs with those conclusions. Therefore, these four sites do not meet the definition of "historic properties" or "historical resources."

In addition to the sites listed above, three prehistoric isolates and six historic-period isolates were observed within the APE during the field survey and subsequently recorded as 33-024735 to 33-024743 in the California Historical Resources Inventory. The prehistoric isolates consist of two ceramic sherds and a quartz core, and the historic-period isolates consist of glass shards, bottle bases, and a complete bottle. Occurring out of depositional context, such isolated artifacts do not constitute archaeological sites and are not considered potential "historic properties"/"historical resources."

A modest residential building of mid-20th century character was noted in the project APE and is the remnant of a ranch complex that dated to the 1940s-1950s. It has been mostly demolished and replaced by a mobile home park and no longer exhibits sufficient historic character to be considered a potential "historic

property"/"historical resource." Consequently, the building requires no further study. No other features or artifacts of prehistoric or historical origin were encountered during the course of this study, and the subsurface sediments in the project APE were found to be relatively low in sensitivity for potentially significant prehistoric archaeological remains in buried deposits.

No "historic properties", "historical resources" or "archaeological resource" are present within the project APE, and thus the undertaking will have No Effect/No Impact on any "historic property", "historical resource" or "archaeological resource", as defined in § 15064.5 of the CEQA Guidelines.

Utility Projects
No "historic properties", "historical resources" or "archaeological resource" are present within the project APE, which includes the IID project sites and most of the CVWD irrigation lateral. Also, the western portions of the SCG gas line relocation lies outside the APE but in areas within disturbed and graded portions of the Highway 111 right of way. While resources are not expe3ctec to be encountered during excavations associated with the subject utility projects, mitigation measure CUL-1 will further ensure that the Project-related utility projects will have No Effect/No Impact on any "archaeological resource", as defined in § 15064.5 of the CEQA Guidelines.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant with Mitigation. Paleontological resources only occur in sedimentary rock such as sandstone, siltstone, mudstone, claystone, and shale. Soils on the valley floor portion of the planning area are generally post-Pleistocene age alluvium from the surrounding mountains,[33] and therefore have little potential to yield fossilized remains. The subject CVSC project area is located within the boundary of the ancient Lake Cahuilla, an area where most paleontological resources in the valley in the form of bi-vales have occurred.[34]

Occasionally fossils may be exposed at the surface through the process of natural erosion or as a result of human disturbances; however, they generally lay buried beneath the surficial soils. The project would be constructed upon previously disturbed and excavated lands comprised of alluvial fan and aeolian (windblown) deposits, including those from the adjoining channel to construct levees and service roads. The project planning area is well removed from intact bedrock or sedimentary rock that most typically harbors paleontological resources. The Proposed Project would somewhat widen and deepen the existing channel within lands that have been previously disturbed and developed. Project area soils are from the Holocene epoch, of relatively recent age, and are therefore not expected to contain paleontological resources. Therefore, the planning area has a low, less than significant potential to contain paleontological resources or for paleontological resources to be impacted.

By virtue of conditions in the stormwater channel, previous channel cuts and levee fills that comprise most of the channel improvement project, and the limited geographic distribution of lakebed-related paleontological resources, no areas of current sensitivity for paleontological resources have been identified in the project APE. However, in the event paleontological resources are encountered during project construction mitigation measure CUL-3 is included in Section 2.7.7 below, should a resource be identified during cultural resource monitoring.

[33] "Paleontological Resources Assessment – College Park Specific Plan", prepared by CRM TECH. May 2009.
[34] "Paleontologic Resources Technical Report – City of La Quinta General Plan", prepared by CRM TECH. August 2010.

Utility Projects
As previously discussed, the planning area has a low, less than significant potential to contain sensitive paleontological resources or for such resources to be impacted. However, in the event paleontological resources are encountered during any of the utility relocation projects, mitigation measure CUL-3 is included in Section 2.7.7 below and will take effect should a resource be identified during cultural resource monitoring.

d) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant with Mitigation. During prehistoric times, life for Native Americans in the Coachella Valley was greatly influenced by the intervals of inundation and desiccation of ancient Lake Cahuilla that repeatedly filled the Salton Basin between 900 and 1700 A.D. Today, the former lakeshore during its last high stand, roughly along the present-day 42-foot contour, features one of the richest collection of prehistoric archaeological sites because of the many resources offered be the lake. The project APE, at elevations of 100-150 feet below sea level, lay at the bottom of the lake, many miles from the lakeshore. Not surprisingly, relatively few prehistoric archaeological sites have been recorded near this location

No human remains or signs of cremation were identified during field surveys and are not expected to be encountered during construction of channel improvements. Therefore, the project will not impact historic or pre-historic human remains. Nonetheless, in the event that unknown and unexpected human remains are discovered during project construction, the provisions of California Health and Safety Code Section 7050.5 - 7055 and mitigation set forth below would ensure that impacts would be less than significant. Therefore, mitigation measure CUL-2 is included in Section 2.7.7 below, should human remains be identified during cultural resource monitoring.

Impacts to Tribal Cultural Resources
According to CEQA Guidelines Appendix G regarding *Tribal Cultural Resources* per Assembly Bill (AB) AB 52 (Gatto, 2014), the following thresholds also apply:

a) Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

- ***Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or***
- ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.***

Pursuant to Public Resources Code Section 21080.3.1.(b), the AB 52 consultation process must begin prior to release of an environmental impact report, negative declaration, or mitigated negative declaration. Native American tribes to be included in the formal consultation process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

In January 2016, CVWD initiated AB 52 with local Native American tribal governments having previously requested to consult under AB 52. CVWD provided AB 52 consultation letters with specific project information to eight (8) tribes. CVWD received written correspondence from the Soboba Band of Luiseno Indians deferring to another tribe. In addition, CVWD met with the Agua Caliente Band of Cahuilla Indians to discuss the project and have provided a copy of the cultural resources report, as requested.

In addition to the literature searches and field surveys conducted for the Proposed Project, a range of previous surveys and reports were also reviewed by the project archeologist. The project cultural resource report (Appendix G) also concluded that there are no listed or eligible Tribal or other cultural resource for listing under the California Register of Historical Resources.

While impacts to Tribal cultural resources are not expected to occur, Mitigation Measures CUL-1 through CUL-3 would ensure that potential impacts to tribal cultural resources will be avoided or lessened, and less than significant.

Utility Projects

Impacts associated with the relocation of the CVWD irrigation lateral, SCG gas pipeline, and IID power poles were considered in the overall Project impact discussion, above. While impacts to Tribal cultural resources are not expected to occur, Mitigation Measure CUL-1 and others set forth below will ensure that potential impacts to tribal cultural resources will be less than significant.

2.7.7 Mitigation Measures

The following mitigation measures are intended to reduce or avoid potential archeological or tribal cultural resource impacts as a result of project implementation.

CUL-1. Archeological and/or Tribal Resource Procurement and Documentation

The construction contractor shall be responsible to notify CVWD's construction inspector within 4 hours should unknown archeological or tribal cultural resource materials become unearthed. The area of potential resources shall be cordoned off and protected from further disturbance until a qualified archeologist can investigate the discovery. The qualified archaeologist shall prepare a findings report summarizing the methods and results of the investigation, including an itemized inventory and a detailed analysis of recovered artifacts upon completion of the field and laboratory work. The report shall include an interpretation of the cultural activities represented by the artifacts and a discussion of the significance of all archaeological or tribal finds. The submittal of the report to the CVWD, along with final curation of the recovered artifacts, will signify completion of the monitoring program and, barring unexpected findings of extraordinary significance, the mitigation of potential project impacts on cultural and tribal resources.

CUL-2. Human Remains

Should buried human remains be discovered during grading or other construction activity, in accordance with State law, the County coroner shall be contacted. If the remains are determined to be of Native American heritage, the Native American Heritage Commission and the appropriate local Native American Tribe shall be contacted to determine the Most Likely Descendant (MLD).

CUL-3. Paleontological Resource Procurement and Documentation

In the unlikely event paleontological resources are encountered, potential resources shall be cordoned off and protected from further disturbance until a qualified paleontologist can investigate the find and determine its value and importance the monitor shall, upon discovery of any fossils, quickly salvage them as they are unearthed to avoid construction delays. The paleontologist shall remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor shall have the authority to temporarily halt or divert grading and excavation equipment to allow for removal of abundant or large specimens.

2.7.8 Significance After Mitigation

The CVSC improvement project will not have a significant adverse effect on sensitive paleontological resources and no mitigation is required. Impacts to cultural and historic resources associated with construction of the project would be less than significant level by adherence to the mitigation measures set forth above. Channel operation and maintenance will not result in any further ground disturbance or alteration of any other lands or buildings, which might be considered to be of historic or archaeological significance. Neither will the project isolate or alter the character of sensitive resources, nor will it introduce visual, audible or atmospheric elements that could conflict with or alter the setting of identified sensitive cultural resources. Therefore, with the application of the mitigation measures set forth above the operation and maintenance of the subject reach of the channel will have no significant adverse impacts on tribal, historical or archaeological resources.

2.7.9 Cumulative Impacts

The geographic scope of analysis of potential cumulative impacts on cultural, historical, tribal, and paleontological resources includes the Areas of Potential Effect (APE), the immediate vicinity and the traditional use areas of the Cahuilla people in the Coachella Valley. The project would contribute considerably to cumulative impacts if it were to have a substantial or significant adverse effect on these cultural, historical or paleontological resources in the Coachella Valley. Cultural resources surveys and, where necessary, avoidance, minimization and mitigation, serve to limit cumulative impacts to cultural resources in the planning area.

The cultural resources surveys conducted for this project have consolidated a wide range of literature, data and information on historic, tribal and other archaeological resources that has added to baseline of knowledge and understanding of these resources. This baseline is invaluable in the project evaluation and decision-making process. No historical resources have been identified as listed or eligible for listing under the California Register of Historical Resources and the National Register of Historic Places. No new unmitigated impacts to historic or archaeological resources will result from the construction or operation of the subject channel that are cumulatively considerable.

Impacts to paleontological resources could also be cumulatively substantial if the project impacted any unique paleontological features. The channel project planning area does not occur in areas or on lands that have been identified as being sensitive for paleontological resources. The lacustrine (lakebed) deposits in the project area are associated with ancient Lake Cahuilla and make up portions of the stormwater levee and channel in this area; remains of bi-valves have been identified in these soils. However, the past excavation of fill for the channel and levees, the periodic grading and other disturbance in the channel during maintenance operations, and active agriculture and other activities on adjoining lands have further reduced the likelihood that the channel improvement project will significantly impact any sensitive resources.

While other development may also impact paleontological resources, which occur throughout much of the southeastern portion of the valley, these resources have been well documented by past surveys and studies. The potential impacts of the Proposed Project on important paleontological resources has been assessed and none of the build alternatives will significantly impact paleontological resources. In addition, avoidance, minimization and mitigation measures have been set forth requiring that in the unlikely event paleontological resources are encountered during project construction, impacts to these resources will be mitigated to levels that are less than significant. Therefore, the Proposed Project's incremental impacts to these resources, if any, will not be cumulatively considerable.

2.8 Geology and Soils

2.8.1 Introduction

This section of the EIR describes existing conditions with regard to geology and soils within the CVSC improvement project planning area, and analyzes the potential impacts of the regional and/or local geology and soil to the proposed CVSC project. A wide range of data and information, ranging from research and sub-surface borings conducted on the subject site, to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects.[35] These include detailed analysis of regional and local geology, soils, and seismicity conditions, as well as detailed analysis of future conditions.

2.8.2 Thresholds of Significance

Thresholds of Significance

Based upon Appendix G of the CEQA Guidelines, the proposed CVSC project would be significantly affected by soils and/or geological conditions if they would:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

   i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area of based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?
   ii) Strong seismic ground shaking?
   iii) Seismic-related ground failure, including liquefaction?
   iv) Landslides?

b) Result in substantial soil erosion or the loss of topsoil?

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

2.8.3 Regulatory Framework

Federal

No federal regulations are associated with geology and soils and for the proposed CVSC project.

[35] Geotechnical Investigation Report for the Proposed Coachella Valley Stormwater Channel Improvement Project from Avenue 54 to Thermal Drop Structure, " prepared by Genterra Consultants, Inc.," On April 2016.

State

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690 to 2699.6) was enacted, in part, to address seismic hazards not included in the Alquist-Priolo Act, including strong ground shaking, landslides, and liquefaction. Under this Act, the State Geologist is assigned the responsibility of identifying and mapping seismic hazards. California Geological Survey (CGS) Special Publication 117, adopted in 1997 by the State Mining and Geology Board, constitutes guidelines for evaluating seismic hazards other than surface faulting, and for recommending mitigation measures as required by Public Resources Code Section 2695 (a). In accordance with the mapping criteria, the CGS seismic hazard zone maps use a ground shaking event that corresponds to 10 percent probability of exceedance in 50 years.

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 is intended to reduce damage resulting from earthquakes and California cities and counties are required to regulate development within mapped Seismic Hazard Zones. Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within Seismic Hazard Zones until appropriate site-specific geologic and/or geotechnical investigations have been conducted and measures to reduce potential damage have been incorporated into the development plans. According to the preliminary geotechnical reports prepared for the project, the project site is not within a state or county-designated fault zone.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Geologic Hazards Zone Act was passed in 1972 by the State of California to mitigate the hazard of surface faulting to structures for human occupancy. The Act has been amended 10 times and was renamed the Alquist-Priolo Earthquake Fault Zoning Act on January 1, 1994. Its main purpose is to prevent the construction of structures used for human occupancy on the surface trace of active faults as documented in Special Publication 42 by CGS. The Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards.

California Building Codes

The California Building Code (CBC), which is codified in CCR Title 24, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, egress facilities, and general building stability. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all building and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which by law is responsible for coordinating all building standards.

The 2013 CBC is based on the 2006 International Building Code (IBC) published by the International Code Conference. In addition, the CBC contains necessary California amendments that are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads, as well as other loads (e.g., flood, snow, wind) for inclusion in building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at a given site, and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

California Code of Regulations, Title 14, Division 2, Chapter 8, Article 10
These regulations govern the exercise of city, county and state agency responsibilities to identify and map seismic hazard zones and to mitigate seismic hazards to protect public health and safety in accordance with the provisions of Public Resources Code, Section 2690 et seq. (Seismic Hazards Mapping Act). [36]

Regional and Local

Coachella Valley Water District (CVWD) Development Design Manual
CVWD has adopted the Development Design Manual (DDM) in 2013 to provide comprehensive procedural and technical requirements for the planning, design and construction of CVWD service infrastructure required for new development. Design and construction plans for the levee's improvement shall be in accordance with the CVWD's DDM.

County of Riverside General Plan[37]
Chapter 6, Safety Element, of the Riverside County General Plan addresses the issue of protection of its people from unreasonable risks associated with natural disasters, e.g., fires, floods, and earthquakes. The Safety Element of the General Plan contains policies that emphasize seismic safety issues because seismic events present the most widespread threat of devastation to life and property.

Coachella General Plan[38]
The City's General Plan also includes goals and policies relevant to issues of seismic safety and geotechnical conditions. These include minimizing the potential for impacts from earthquake-induced hazards, and ensuring that city infrastructure is resistant to seismic shaking, surface fault rupture and seismically induced ground deformation. City General Plan goals include ensuring that the community is minimally disrupted by flooding and inundation hazards.

2.8.4 Environmental Setting

Regional Geologic Setting
The Proposed Project is located within a central portion of the Coachella Valley, which is a rift valley associated with the San Andreas Fault System in Southern California. The valley is located in the northwestern portion of the Salton Trough, a tectonic depression roughly 130 miles long and 70 miles wide that extends from the San Gorgonio Pass to the Gulf of Mexico. Tectonically, the valley is a deep fault graben formed by tectonic movement along the San Andreas Fault (SAF)[39], a continental transform fault that extends roughly 808 miles through California. SAF forms the tectonic boundary between the Pacific and North American tectonic plates, which are sliding past one another at a rate of about 50 millimeters per year.[40] It is a complex strike-slip fault that represents a continuous zone of faulting from the San Francisco area to the Salton Sea. Motion accommodated by the fault zone is distributed along a complex system of interrelated faults.[41]

36 Guidelines For Evaluating And Mitigating Seismic Hazards in California", Special Publication 117, 2008
37 Riverside County General Plan Update GPA No. 960 and Eastern Coachella Valley Area Plan, 2015.
38 "General Plan Update: City of Coachella", April 2015.
39 Alles, D. L. (2012). Geology of the Salton Trough.
40 "Technical Background Report to the Safety Element of the General Plan for Cathedral City," Earth Consultants International, Inc., June 1999.
41 Hill, M. L., & Dibblee, T. W. (1953). San Andreas, Garlock, and Big Pine faults, California a study of the character, history, and tectonic significance of their displacements. Geological Society of America Bulletin, 64(4), 443-458.

Approximately 70% of the movement between these plates is accommodated by the San Andreas Fault, which crosses the easterly portion of the Coachella Valley.[42] Given its proximity to this and other active and potentially active faults, the composition of underlying soils, the presence of strong sustained winds, and steep and rugged mountains, the region is highly susceptible to seismic and other geologic forces. These issues are further addressed below and in the Geotechnical Investigation Report prepared for the project, Appendix F.

Regional Soils and Surficial Rocks

A site-specific geotechnical report was prepared for the subject CVSC project.[43] The Coachella Valley is bounded by the San Bernardino Mountains on the north and northeast, Santa Rosa and San Jacinto Mountain Range on the southwest and west. Together the San Jacinto and Santa Rosa Mountains form the Peninsular Ranges Province and is classified as Mesozoic granite, which was first exposed about 95 million years ago. San Jacinto Mountain Range is traversed by San Jacinto Fault zone.

Regional soils range from rocky outcrops within the mountains bordering the valley to coarse gravels of mountain canyons and recently laid fine- and medium-grained alluvial (stream deposited) and aeolian (wind deposited) sediments on the central valley floor. Sediments from the bounding mountain ranges are carried into and across the Coachella Valley through numerous seasonal streams. The Whitewater River and its extension the Coachella Valley Stormwater Channel are the master drainage for the valley, which generally flows northwest to southeast. Episodic flooding of major regional drainages results in the deposition of sand and gravel on the valley floor.

Faults

In the region, there are numerous earthquake-producing faults, including the San Andreas Fault Zone (that includes the San Gorgonio Pass Thrust Fault and sub-parallel fault strands of Mission Creek, San Gorgonio, and Banning Faults)[44], San Jacinto Fault Zone (e.g. Buck Ridge Fault and Clark Fault)[45], Pinto Mountain Fault, faults in the Eastern California Shear Zone (including the Burnt Mountain, Eureka Peak, and Pisgah-Bullion Mountain-Mesquite Lake faults)[46], and the Elsinore Fault[47]. The nearest fault to the project site is the San Andreas Fault, which is located approximately 2.65 miles northeast of the project planning area, and capable of generating magnitude 7.4+ earthquakes. The network of the faults in the region is broadly classified as: San Andreas Fault Zone and San Jacinto Fault Zone, and is discussed below.

San Andreas Fault Zone

The San Andreas Fault Zone is the principal boundary between the Pacific and North American plates and locally has been divided into several segments. This fault is considered the master fault in Southern California because it has frequent, large earthquakes and controls the seismic hazards of the area. In the vicinity of Riverside County, the San Andreas Fault Zone Coachella Valley segment is of primary relevance to the project.[48]

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42 Ibid.

43 "Geotechnical Investigation Report for the proposed Coachella valley Stormwater Channel Improvement Project From Avenue 54 to Thermal Drop Structure", prepared by Genterra. April 8, 2016.

44 Sieh, K., & Williams, P. L. (1990). Behavior of the southernmost San Andreas fault during the past 300 years. Sharp, R. V. (1967). San Jacinto fault zone in the Peninsular Ranges of southern California. *Geological Society of America Bulletin*, *78*(6), 705-730.

45 Ibid.

46 Frankel, K. L., Glazner, A. F., Kirby, E., Monastero, F. C., Strane, M. D., Oskin, M. E., ... & Coleman, D. S. (2008). Active tectonics of the eastern California shear zone. *Field Guides*, *11*, 43-81.

47 D. W., & Richards, G. (1988). such as the Elsinore-Whittierfault system and the Newport-Inglewood fault zone, which strike subparallel to the San Andreas fault. The strike-slip faults are typically well.

48 Natural Hazard Mapping, Analysis, and Mitigation: a Technical Background Report in Support of the Saftey Element of the New Riverside County 2015 General Plan, prepared by Earth Consultants Intenational on August 2000.

The Coachella segment of the San Andreas Fault extends 71 miles from approximately the Salton Sea to the San Gorgonio Pass. The Coachella segment of the San Andreas Fault generally parallels the All-American Canal, northeast of the project site[49].

Co-seismically-triggered surface displacements and creep caused by historical regional earthquakes have occurred on the Coachella segment of the San Andreas fault following the April 23, 1992 Joshua Tree and June 28, 1992 Landers earthquakes, and the July 8, 1986 North Palm Spring earthquake.[50]

The most recent surface-rupturing earthquake on the Coachella segment of the San Andreas Fault likely occurred in the late 1600's. Prior to that, apparently five such "paleo earthquakes" occurred on the Coachella segment in about A.D. 825, 982, 1231, 1502, and 1680 based on a trenching study at Thousand Palms Oasis. These data indicate that the average repeat time for surface-rupturing earthquakes on the Coachella-Indio segment of the San Andreas fault is approximately 215 (±25) years, and that the last surface-rupturing event occurred approximately 325 years ago.[51] This segment has not produced any large surface-rupturing earthquakes in historic times. This fault segment has the potential to generate a magnitude 7.2 earthquake and peak ground accelerations in the Coachella/Thermal area greater than 0.5g.[52]

2.8.5 Existing Conditions

Regional Geologic Setting

The project site is located in the Coachella Valley which is a deep fault graben formed by tectonic movement along the San Andreas Fault (SAF).[53] SAF is a complex strike-slip fault that represents a continuous zone of faulting from the San Francisco area to the Salton Sea, and the motion accommodated by the fault zone is distributed along a complex system of interrelated faults.[54]

According to recent geophysical data, the southern segment of the SAF accommodates approximately 21-25 mm/yr of slip between the Pacific and North American plates.[55] At its southern terminus, the SSAF steps west over to the Imperial fault (IF), creating the Salton pull-apart (extension) basin through a releasing bend in the right-lateral system. This movement has created a spreading zone in the valley and causes ongoing subsidence in the Salton Trough formed by the regional faulting.

Overall, the southern segment of the SAF, in addition where it forms the SSAF/IF system, has the potential of generating a large-magnitude earthquake.[56] The southern segment of the SAF is located approximately 2.65 miles northeast of the project site. Due the project site's close proximity to these active faults as well as other active and potentially active faults, the composition of underlying soils, and geologic structure the region is highly susceptible to seismic forces. These issues are further addressed below and in the Geotechnical Investigation Report prepared for the Proposed Project, Appendix F.

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49 Preliminary Geotechnical Investigation, Approximately 2200-Acre La Entrada Project (Preliminary Geotechnical Investigation) (Petra Geotechnical, Inc. [Petra], April 15, 2013)

50 Ibid. Fumal, T. E., Rymer, M.J., Seitz, G.G. (2002). "Timing of large earthquakes since A.D. 800 on the Mission Creek strand of the San Andreas fault zone at Thousand Palms Oasis, near Palm Springs, California." Bulletin of the Seismological Society of America v. 92(no. 7): p. 2841-2860.

51 Ibid.

52 Ibid.

53 Alles, D. L. (2012). Geology of the Salton Trough.

54 Hill, M. L., & Dibblee, T. W. (1953). San Andreas, Garlock, and Big Pine faults, California a study of the character, history, and tectonic significance of their displacements. Geological Society of America Bulletin, 64(4), 443-458.

55 Sahakian, V., A. Kell, A. Harding, N. Driscoll, and G. Kent (2016), Geophysical evidence for a San Andreas subparallel transtensional fault along the northeastern shore of the Salton Sea, Bull. Seismol. Soc. Am., doi:10.1785/0120150350.

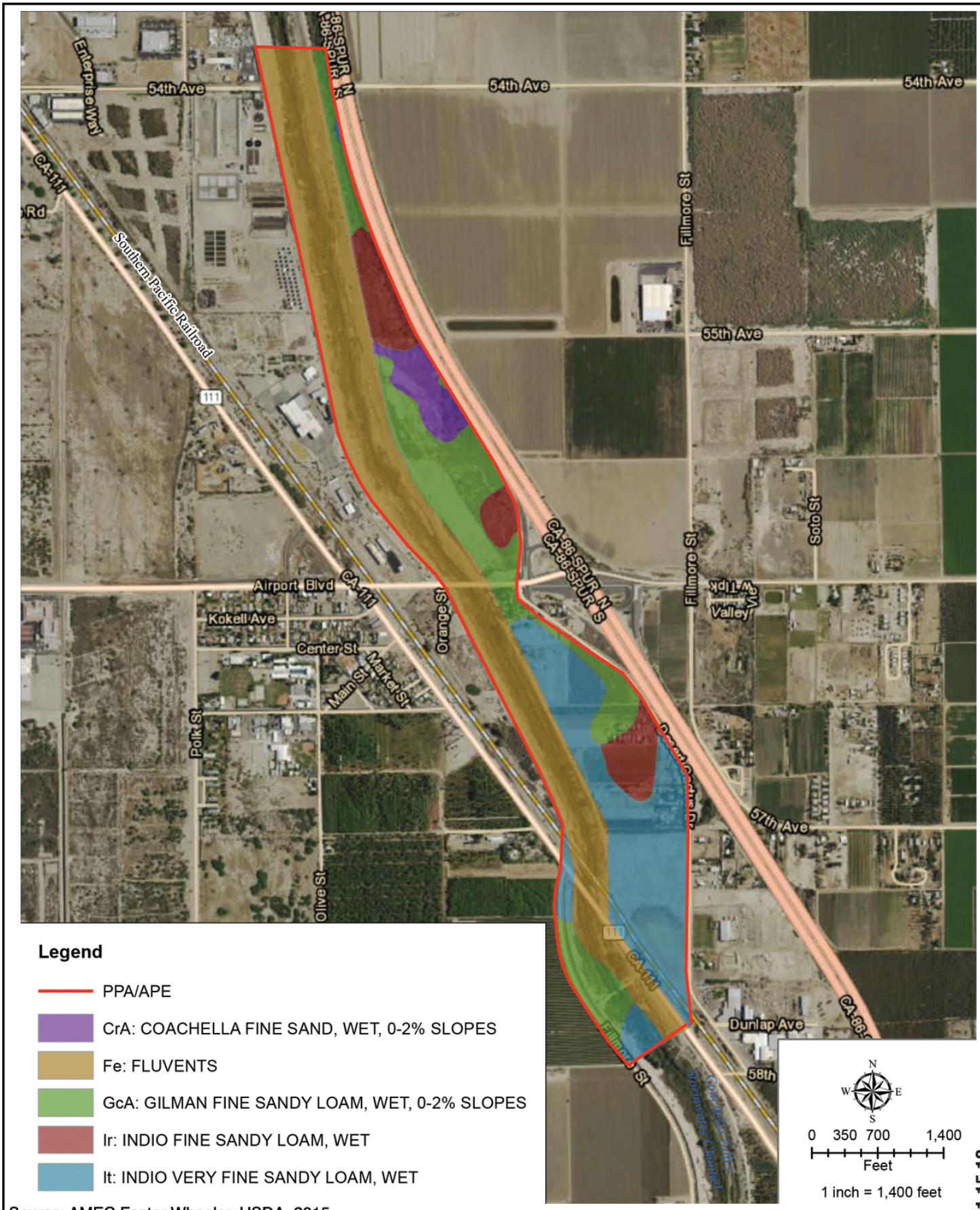
56 Ibid.

Regional Soils and Surficial Rocks

The Coachella Valley is bounded by the Little San Bernardino Mountains on the north and northeast, Santa Rosa and San Jacinto Mountain Range on the southwest and west. Geologic materials of the San Bernardino Mountains to the northwest are mainly comprised of ancient basement rocks that have been uplifted to their current elevations. The southwestern and southeastern margins of the San Bernardino Mountains are traversed by several strands of the San Andreas Fault zone that, in part, form the geomorphic and structural boundary of the range.

Together the San Jacinto and Santa Rosa Mountains form the Peninsular Ranges Province and are classified as Mesozoic granite, which was first exposed about 95 million years ago. San Jacinto Mountain Range is traversed by San Jacinto Fault zone on its western margin.

Sediments from the bounding mountain ranges are carried into and across the Coachella Valley through numerous seasonal streams flowing to the Whitewater River, San Gorgonio River and the Snow, Chino Canyon, Tahquitz, Palm Canyon, Deep Canyon, Mission, Big Morongo, and Little Morongo Creeks. Whitewater River is the master drainage for the valley, which flows west to east. Episodic flooding of major regional drainages, including the Whitewater River and Coachella Valley Stormwater Channel, results in the deposition of sand and gravel on the valley floor.



Source: AMEC Foster Wheeler, USDA, 2015

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PLANNING & RESEARCH, INC.

Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Soils Map
Coachella Valley Water District

WATER DISTRICT

Exhibit
2-5

The Coachella Valley's geologic composition is also related to its proximity to the San Andreas Fault, which passes through the northeasterly portion of the valley, and other active faults. The region is susceptible to a range of geologic hazards, including ground rupture, major groundshaking, slope instability, and collapsible and expansive soils. Strong sustained winds emanating from the San Gorgonio Pass, as well as northeast Santa Ana winds and monsoonal flows from the southeast, cause wind erosion and transport and deposit dry, finely granulated, sandy soils on the central valley floor.

Regional soils range from rocky outcrops within the mountains bordering the valley to coarse gravels of mountain canyons and recently laid fine- and medium-grained alluvial (stream deposited) and aeolian (wind deposited) sediments on the central valley floor. The valley consists of a diverse range of rocks and sediments, which were formed or deposited over millions of years and provide important details about the geologic history of the region. Geologic units are typically described in terms of their age, and in the Coachella Valley, they range from recently deposited gravels and sands, to granitic and metamorphic rocks formed hundreds of millions of years ago.

Basement Rocks

The oldest rock formations in the Coachella Valley are basement rocks, which compose the mountain ranges bordering the Valley. The Santa Rosa Mountains in the southerly portion of the Valley are composed of hard crystalline granite and meta-sedimentary rock, which was emplaced more than 65 million years ago and forms the basement rock of the region. The Little San Bernardino Mountains in the northerly portion of the Valley consist of Pre-Cambrian metamorphic rocks.[57] These rocks are typically non-water bearing, except where extensively jointed and fractured.

Sedimentary Rocks

Sediments in the Salton Trough are approximately 3 miles thick and originate from the surrounding mountains and the Colorado River to the southeast. These sediments are approximately 3–5 million years old and are associated with the Imperial and Palm Spring Formations. These sediment deposits are composed of salt beds, silts and clays, and minor sand and channel gravels. In addition, fine-grained basin deposits are present on site and are generally comprised of sands, gravels, and conglomerates from the Ocotillo and Canebrake Formations.

The most recently laid sediments in the Coachella Valley are alluvial (stream-deposited) and aeolian (wind-deposited) sediments. Alluvial sediments typically consist of gravel, sand, and clay. They are deposited by mountain streams and found within alluvial fans and the lower reaches of mountains canyons. In the vicinity of the Salton Sea, they consist of fine clay that is probably lacustrine (lake) in origin. Aeolian deposits are silty sand and fine and medium-grained sand fractions that are transported by strong, sustained winds.

Sand Transport

Winds predominantly enter the Coachella Valley from the northwest and are funneled through the narrow San Gorgonio Pass. They generally blow in a southeasterly direction along the central axis of the Valley and across the most erosive zones of the Valley floor, resulting in the transport and re-deposition of sand along the length of the Valley. The continual transport of sand in this vicinity has resulted in the formation and migration of extensive sand dunes, fields and sheets across the valley. One prominent feature of this process is the stabilized Palm Springs Sand Ridge, a thick accumulation of windblown sand that covers a significant portion of the valley floor south of Interstate 10 and rises as much as 100 to 120 feet above the Valley floor.[58]

[57] Sylvester, A. G., & Smith, R. R. (1976). Tectonic transpression and basement-controlled deformation in San Andreas fault zone, Salton Trough, California. AAPG Bulletin, 60(12), 2081-2102.

[58] "Technical Background Report to the Safety Element of the General Plan for the City of Cathedral City," Earth Consultants International, Inc., June 1999.

Regional Faulting and Seismic Hazards

Faults

There are numerous earthquake-producing faults in the Coachella Valley which includes the southern segment of the San Andreas Fault Zone (e.g. San Gorgonio Pass Thrust Fault and sub-parallel fault strands of Mission Creek, San Gorgonio, and Banning Faults)[59], San Jacinto Fault Zone (e.g. Buck Ridge Fault and Clark Fault)[60], Pinto Mountain Fault, faults in the Eastern California Shear Zone (including the Burnt Mountain, Eureka Peak, and Pisgah-Bullion Mountain-Mesquite Lake faults)[61], and the Elsinore Fault[62]. The nearest fault to the project site is the San Andreas Fault, which is located approximately 2.05 miles to the northeast and capable of generating magnitude 8.0+ earthquakes.[63] The network of the faults in the region is broadly classified as: San Andreas Fault Zone and San Jacinto Fault Zone, and is discussed below.

San Andreas Fault Zone

The San Andreas Fault Zone (SAFZ) is the principal boundary between the Pacific and North American plates and locally has been divided into several segments. This fault is considered the master fault in Southern California because it has frequent, large earthquakes and controls the seismic hazards of the area. In the vicinity of Riverside County, the San Andreas Fault Zone is comprised of three segments: 1) the San Bernardino Mountains segment, 2) the Coachella Valley segment, and 3) the Mojave Desert segment.[64]

The Coachella segment of the San Andreas Fault extends 71 miles from approximately the Salton Sea to the San Gorgonio Pass and generally parallels the All American Canal, northeast of the project site.[65] Co-seismic triggered surface displacements and creep caused by historical regional earthquakes have occurred on the Coachella segment of the San Andreas fault following the April 23, 1992 Joshua Tree and June 28, 1992 Landers earthquakes, and the July 8, 1986 North Palm Spring earthquake.[66]

The most recent surface-rupturing earthquake on the Coachella segment of the San Andreas Fault likely occurred in the late 1600's.[67] Prior to that, apparently five paleoearthquakes occurred on the Coachella segment in about A.D. 825, 982, 1231, 1502, and 1680 based on a trenching study at Thousand Palms Oasis. These data indicate that the average repeat time for surface-rupturing earthquakes on the Coachella-Indio segment of the San Andreas that exceed the design quake (20% probability in the next 50 years) is approximately 215 +/- 25 years.

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59 Sieh, K., & Williams, P. L. (1990). Behavior of the southernmost San Andreas fault during the past 300 years.
Sharp, R. V. (1967). San Jacinto fault zone in the Peninsular Ranges of southern California. *Geological Society of America Bulletin*, *78*(6), 705-730.

61 Frankel, K. L., Glazner, A. F., Kirby, E., Monastero, F. C., Strane, M. D., Oskin, M. E., ... & Coleman, D. S. (2008). Active tectonics of the eastern California shear zone. *Field Guides*, *11*, 43-81.

62 California Division of Mines and Geology-Fault Evaluation Report FER-84 (April 16, 1979)

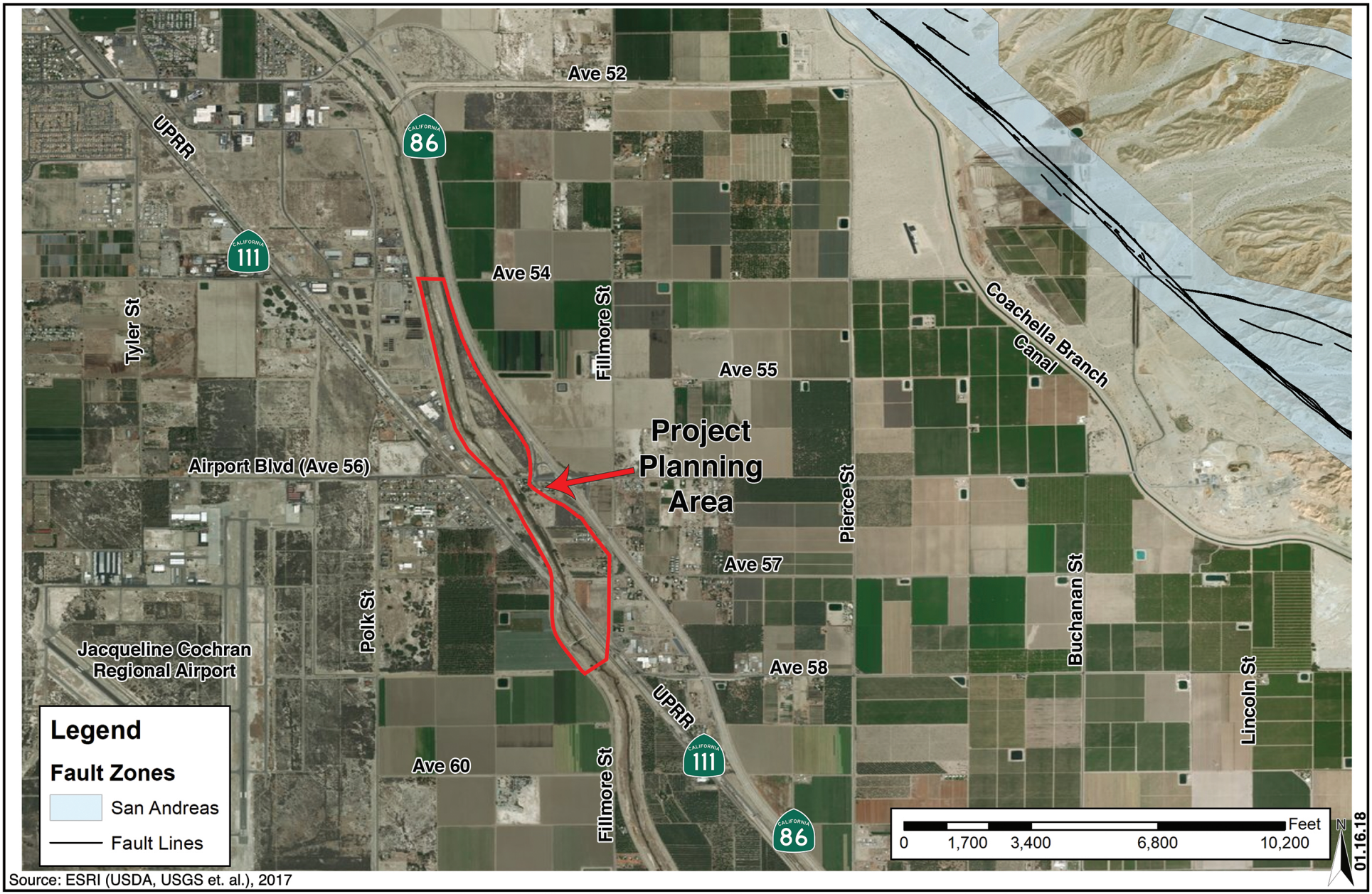
63 E. E. Brodsky, L. J. Lajoie, Anthropogenic seismicity rates and operational parameters at the Salton Sea Geothermal Field. Science 10.1126/science.1239213 (2013). doi: 10.1126/science.1239213

64 Natural Hazard Mapping, Analysis, and Mitigation: a Technical Background Report in Support of the Safety Element of the Riverside County 2004 General Plan, prepared by Earth Consultants International on August 2000.

65 Preliminary Geotechnical Investigation, Approximately 2200-Acre La Entrada Project (Preliminary Geotechnical Investigation) (Petra Geotechnical, Inc. [Petra], April 15, 2013)

66 Ibid.

67 Fumal, T. E., Rymer, M.J., Seitz, G.G. (2002). "Timing of large earthquakes since A.D. 800 on the Mission Creek strand of the San Andreas fault zone at Thousand Palms Oasis, near Palm Springs, California." Bulletin of the Seismological Society of America v. 92(no. 7): p. 2841-2860.



Source: ESRI (USDA, USGS et. al.), 2017

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PLANNING & RESEARCH, INC.

Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Earthquake Fault Map
Coachella Valley Water District

WATER DISTRICT

Exhibit
2-6

The last surface-rupturing event on this fault segment occurred approximately 325 years ago.[68] Therefore, this segment has not produced any large surface-rupturing earthquakes in historic times. Rupture of the Coachella fault segment in a magnitude 7.2 earthquake is estimated capable of generating peak ground accelerations in Coachella Valley greater than 0.54g.[69]

The San Andreas Fault Zone, which accommodates 21-25 mm/yr of slip between the Pacific and North American plates, crosses through and along the central axis of the Coachella Valley. The remaining tectonic movement is distributed among other faults and fault zones, many of which are in proximity to the Coachella Valley, including the San Jacinto, Whittier-Elsinore, Newport-Inglewood, and Palos Verdes faults to the west, and the Mojave Shear Zone to the north. Slip rates along the San Andreas Fault System vary from one location to the next, and from one period of time to another. The Coachella Valley segment of the San Andreas Fault is creeping at a rate of about 2 to 4 mm/year, with a long-term slip rate of about 25 mm/year ± 5 mm/year.[70]

San Jacinto Fault Zone

The San Jacinto Fault Zone consists of a series of closely spaced faults that form the western margin of the San Jacinto Mountains. The zone is about 175 miles long and extends from its junction with the San Andreas Fault in San Bernardino southeast toward the Brawley area, where it continues south of the international border as the Imperial fault. The slip rate along San Jacinto fault zone has been 10-15 mm/yr since the Pleistocene.[71] This fault has generated more large earthquakes than any other fault in southern California, although none of these earthquakes has been as large as the 1857 and 1906 earthquakes on the San Andreas Fault.[72] The San Jacinto Fault is estimated to have a 31 percent probability of rupturing between 1994 and 2024. At least 16 past earthquakes on the Anza segment have been recognized in faulted rock layers.[73]

Seismic and Other Geologic Hazards

Due to the complex tectonic settings, the Coachella Valley and the project area are highly susceptible to seismic activity and associated geologic hazards. Seismicity in this region is mainly associated with the San Andreas Fault system and San Jacinto Fault system.[74] The project site is located close to the southern segment of the San Andreas Fault, known as Coachella Segment. Exhibit 2-6 shows the location of active faults in the project vicinity.

Local Soils

Existing levee is constructed on some artificial fill but is primarily comprised of natural alluvial materials consisting of silty sand, clayey sand, lean clay, lean clay with sand, sandy lean, clay, silty clay, silty clay with sand, sandy silty clay, sandy silt, silt with sand, poorly graded sand and poorly graded sand with silt. The soils in the project planning area are severely corrosive to ferrous (iron, steel) metals. Any ferrous metals or metallic piping needed to construct any project features would be subject to corrosion without proper protection.

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68 Ibid.

69 Ibid.

70 Sieh, K. E., & Jahns, R. H. (1984). Holocene activity of the San Andreas fault at Wallace creek, California. Geological Society of America Bulletin, 95(8), 883-896.

71 Morton, D. M., & Matti, J. C. (1993). Extension and contraction within an evolving divergent strike-slip fault complex: The San Andreas and San Jacinto fault zones at their convergence in southern California. Geological Society of America Memoirs, 178, 217-230.

72 "Technical Background Report to the Safety Element" for the City of Coachella General Plan. Prepared by Earth Consultants International. 2014.

73 Thatcher, W., Hileman, J. A., & Hanks, T. C. (1975). Seismic slip distribution along the San Jacinto fault zone, southern California, and its implications. Geological Society of America Bulletin, 86(8), 1140-1146.

74 Nicholson, C. (1996). Seismic Behavior of the Southern San Andreas fault Zone in the Northern Coachella Valley, California: Comparison of the 1948 and 1986 Earthquake Sequences. Bulletin of the Seismological Society of America, 86(5), 1331-1349.

The near surface soils in the project area are potentially compressible in their present state and may settle under the surcharge of fills or water loading or saturation. Some surficial instability and caving in the upper 15 feet should be anticipated due to the cohesionless nature of site on-soils and low moisture content. Seismic-induced dry settlement may occur as result of the densification of loose to medium dense granular soils during ground shaking. Dry and partially saturated soils are subject to seismic-induced settlement.

Groundwater and Liquefaction

Twelve exploratory borings were conducted to collect sub-surface soils and establish groundwater levels in the project area. Groundwater was encountered in all these borings during the time of the investigation. Groundwater was encountered at shallow depths ranging from 8 to 14 feet below the ground surface near the channel bottom and near the Thermal drop structure. Borings at the levee crest encountered groundwater at depths ranging from 24 to 37 feet below the existing ground surface. Based on the Department of Water Resources Well Number 336407N1161430W001 data, located southeast corner of the intersection of Airport Boulevard and Highway 111, groundwater depths may be between 18 and 38 feet below ground surface.[75] Based on the available information, the anticipated liquefaction-induced and seismic-induced total settlement is about 1 to 4 inches and differential settlement is about 0.5 inch over 100 feet.

Slope Instability

Slope stability is an important consideration for the subject project. The project planning area is not within an area identified as having a potential for slope instability. There are no known landslides at the site nor is the site in the path of any known landslides. Based on the geotechnical evaluation performed for this project, the potential for slope instability such as slip surface failure through the levee or translational sliding of the levee system or lateral spreading of the levee system at the project site is considered to be moderate. Slopes of the existing levee will be stable under static conditions. Since the San Andreas Fault is very close to the subject levee, some surficial instability should be anticipated due to an earthquake in the San Andreas Fault system.

The existing trapezoidal channel banks and levees consist mainly of dirt, with limited areas of concrete and grouted riprap. The strength of levees can be affected during fluctuations in the water table. It is also possible for the climate to have an influence on the position of the water table in an earth levee.[76]

Collapsible Soils

Hydroconsolidation, or soil collapse, is another potential geologic hazard in the Coachella Valley and especially in the eastern portions of the valley. This phenomenon typically affects areas with recently deposited soils. When saturated, these soils experience a loss of cementation and a rearrangement of their grains, a process that results in the collapse of minute pores and voids between the soil grains. When combined with the weight of a structure or heavily loaded vehicle, this occurrence can result in rapid ground settlement and cause the cracking of channel slope and bottom lining. It is typically initiated by the infiltration of water from irrigation or a rising groundwater table.

Expansive Soils

Expansive soils are those that contain significant amounts of clay particles and, therefore, have the ability to give up (shrink) or take on (swell) water. When swelling occurs, the soils can exert significant pressure on structures (e.g. buildings, channel linings and other structures) build upon them. Fourteen (14) Cone Penetration Tests (CPTs), including four (4) seismic cone penetration tests (SCPTs) were performed along the crest area of the levee to depths ranging from 30 feet to 50 feet. The location of the CPTs are shown in

[75] Ibid.

[76] Fredlund, M., Lu, H., and Feng, T. (2011) Combined Seepage and Slope Stability Analysis of Rapid Drawdown Scenarios for Levee Design, Geo-Frontiers 2011, pp1595-1604.

the Figure 2-1 and 2-2 of the Geotechnical Investigation Report prepared for the project, Appendix F. Based on interpretations of the CPT data, the on-site subsurface materials may be generally described to consist predominantly of sand, silty sand, clay and silty clay, which are potentially not expansive.

Subsidence

Ground subsidence is the gradual settling or sinking of the ground surface with little or no horizontal movement. During this process, water contained in subsurface clay layers is squeezed out, and the clay is compacted by the weight of overlying sediments. Subsidence can result in structural damage to structures that are sensitive to slight changes in elevation, such as larger buildings, canals and channel lining, and wells. Subsidence can also result in changes to surface drainage, reductions in aquifer storage capacity, and the formation of earth fissures.

In the Coachella Valley, subsidence is primarily associated with long-term groundwater extraction, although it may also be induced by strong seismic groundshaking. Regional subsidence is most likely to occur in the central and southeasterly portions of the Valley, which are underlain by numerous clay layers that separate water-producing zones.[77] Land at or near the Valley margins is also particularly susceptible to subsidence. The subject site is not located within an area of know subsidence associated with fluid (groundwater or petroleum) withdrawal, peat oxidation or hydroconsolidation; therefore, the potential for subsidence is low.

Wind Erosion and Sand Transport

Wind erosion is initiated by wind forces exerted against the ground, and results in the transport and re-deposition of dry, sandy, finely granulated soils exposed to the wind regime. The movement of abrasive, sandy soils can also pose a serious public health hazard, reduce visibility, damage buildings and vehicles, and contribute to nutrient losses in plants. Blowing sand that collects on streets, driveways, parking lots and yards is removed at considerable expense.

The potential for natural erosion type hazards is high in areas with a combination of the following conditions: 1) moderately steep to steep slopes (greater than 15 percent), 2) loose to unconsolidated soils and sediments, 3) little or no vegetation cover, and 4) uncontrolled surface water runoff. Changes in any of these conditions can increase erosion potential, as well as cause surface drilling. Additionally, an increase in erosion can increase downstream sediment loads. Much of the project planning area is highly susceptible to wind erosion and the transport of fugitive dust and sand. [78]

2.8.6 Project Impacts

The two basic categories by which geological and seismological impacts are assessed include those impacts that are the result of natural events and those that occur as a direct result of construction of the project. Examples of the former include fault displacement, earthquake-induced ground shaking, liquefaction, and landslides. These can often be reduced to a level of insignificance through avoidance or by proper engineering design. Examples of potential geological impacts that can occur as a result of project construction are typically related to disturbance of surficial geologic formations and include induced hydroconsolidation of collapsible soils, induced slope instability, and increased soil erosion.

Regardless of whether the impact is due to a natural event or a direct result of the channel improvement project, the following potential for impacts have been identified and are discussed below. The project impact is analyzed based on the State CEQA Guidelines, as listed in Appendix G. The project would result in a significant impact to geology and soils if it would result in any of the following:

77 "Coachella Valley Water Management Plan," Coachella Valley Water District, January 2012.
78 Draft EIR for the Coachella General Plan Update 2035, 2015.

a) Will the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area of based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

Less than Significant. The project site is not located within an Alquist-Priolo Earthquake Fault Zone, and there are no known active or potentially active faults in the project area or within the immediate vicinity. The nearest major active fault is the San Andreas Fault and its splays (Mission Creek fault or Coachella segment), located approximately 2.05 northeast of the project site. This fault is capable of generating a maximum probable quake of 7.2 Richter scale earthquakes. Given its proximity to the subject site, moderate to severe ground shaking is considered the primary geologic hazard affecting the project site. Based on its location with respect to active faults and being outside any Alquist-Priolo Earthquake Fault Zone, the potential for fault-related ground rupture is less than significant.

Utility Projects
Based on its location with respect to active faults and being outside any Alquist-Priolo Earthquake Fault Zone, the potential for fault-related ground rupture is less than significant.

ii) Strong seismic ground shaking?

Less than Significant with Mitigation. As the project site is located in proximity to San Andreas Fault, there is a high probability that the subject site will be subject to strong groundshaking in the event of an earthquake. To evaluate the subject levee performance under the Design Basis Earthquake (DBE), the ground motion with a 10% probability of exceedance in 50 years (equal to about 475-year return period) was used to calculate the Specific Seismic Coefficients.

The project site is classified as Site Class D in the project geotechnical report based on a review of the location, and local soil and geologic conditions. The report calculated peak ground acceleration values for the subject site of 0.972g (based on 2012 IBC seismic parameter S_1). The proposed channel improvements will be subject to California Building Code. Based upon the adherence of project structural design to applicable seismic and other codes, the effects of seismically induced groundshaking can be reduced to a level that it will have a less than significant impact on the channel.

The geotechnical report for the project provides specific design recommendations to address ground shaking and potential hazards. Implementation of these recommendations (presented as mitigation measures in Section 2.8.7 below) would minimize the potential for damage to the channel or related facilities in the event of a strong seismic event, and this impact would be less than significant.

Utility Projects
All utility relocation projects will be subject to California Building Code. Based upon the adherence of project structural design to applicable seismic and other codes, the effects of seismically-induced groundshaking can be reduced to a level that it will have a less than significant impact on the channel and subject utility facilities.

iii) Seismic-related ground failure, including liquefaction?

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant with Mitigation: According to the project's Geotechnical Investigation Report, existing shallow groundwater levels and poorly consolidated soils results in a high potential for liquefaction that could affect channel slope lining during a strong seismic event. Seismically-induced liquefaction and settlement are expected to occur in association with ground shaking and along the entire length of the project area. Liquefaction of the underlying soils may induce lateral spreading of the levee slopes/channel banks, which may result in their deformation along the channel alignment. With the implementation of minimal soils remediation, in such an event there may be some cracking to the slope lining and some displacement of the banks due to seismic-induced differential settlement and lateral spreading.

Except at locations under and in proximity to project bridges, channel lining will be limited to side slopes, the integrity of which could be compromised during a rapid groundwater drawdown condition after major flood events such as the 100-Year flood or the Standard Project flood. As noted below, excavations associated with the Project will be deep in areas of channel lining, cutoff walls and utility trenching, and can result in a collapse and associated hazards. With proper remedial mitigation set forth in the project Genterra Geotechnical Investigation, this hazard can be minimized. In order to achieve the required factor of safety, some remedial grading, compaction, and drainage, as discussed in the project geotechnical report, would be required. Mitigation measures in Section 2.8.7 below will ensure impacts are reduced to less than significant levels.

Utility Projects
According to the project's Geotechnical Investigation Report, seismically-induced liquefaction, settlement and collapse may occur in association with ground shaking and high groundwater along the entire length of the project area, including the areas subject to utility relocations. Liquefaction of the underlying soils may induce movement in pipelines and power pole foundations that could potentially impact the CVWD irrigation lateral, SCG gas pipeline, and IID power poles. Excavations associated with utility trenching and excavation can result in wall collapse and associated hazards. With proper remedial mitigation set forth in the project Genterra Geotechnical Investigation, this hazard can be minimized. However, the mitigation measures in Section 2.8.7 below will ensure impacts are reduced to less than significant levels.

iv) Landslides?

Less than Significant with Mitigation. There are no known landslides or landslide hazard areas at the site or vicinity, nor is the site in the path of any known landslides or hazard area. Therefore, no impact is anticipated. It should be noted that there is a moderate potential for channel levee and slope instability such as slip surface failure through the levee or translational sliding of the levee system or lateral spreading of the levee system at the project site. Excavations associated with the project will be deep in areas of channel lining, cutoff walls and utility trenching, and can result in a collapse and associated hazards. With proper remedial mitigation set forth in the project Genterra Geotechnical Investigation, this hazard can be minimized. Therefore, with design mitigation the potential for slope instability can be reduced to a level that is less than significant. Mitigation measures set forth in Section 2.8.7 below will ensure impacts are reduced to less than significant levels.

Utility Projects
There are no known landslides or landslide hazard areas at the site or vicinity, nor are the utility relocation areas in the path of any known landslides or hazard area. Therefore, no impact is anticipated.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant with Mitigation. The channel soils are comprised of silty sands. Currently, the existing levee does not have adequate freeboard at some locations to prevent overtopping during the 100-year flood event, and also does not have adequate protection to prevent erosion of the banks and levees. The Proposed

Project will involve some channel widening and deepening to ensure that adequate freeboard is provided. Planned concrete lining will also prevent erosion of the channel banks and those portions of the channel bottom under and in proximity to bridges that will also be lined.

The Project may have the potential to result in the short-term loss of topsoil during construction due to runoff and wind erosion. However, this will be minimized by complying with the recommendations provided in the geotechnical investigation report (See Section 2.8.7 Mitigation Measures below). At buildout, substantial erosion is not anticipated during channel operation and maintenance. Therefore, impacts are less than significant.

Utility Projects
All utility relocation projects may have a limited potential to result in the short-term loss of topsoil during construction due to excavation and temporary stockpiling, and from storm runoff and wind erosion. However, this potential is limited and will be minimized by complying with the recommendations provided in the geotechnical investigation report (See Section 2.8.7 Mitigation Measures below). At buildout, substantial erosion is not anticipated during utility operation and maintenance. Therefore, impacts are less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less than Significant with Mitigation. Expansive soils have a tendency to increase volume with an increase in their moisture content. These soils swell when water is added to them and shrink when they dry out. Foundations built on expansive soils can heave and can cause lifting and even structural damage when the moisture content rises. This can ultimately lead to the failure of foundations and structures. The materials encountered during the geotechnical investigation for the channel improvement site are predominantly sand and gravel, which are non-critically expansive. Because the project itself will not include any structures that would be inhabited and not create a substantial risk to life or property. Nonetheless, construction plans will incorporate recommendations, performance standards and requirements set forth in the project geotechnical report that will adequately remediate for the limited areas of potentially expansive soils that may occur in the project area. Mitigation measures set forth in Section 2.8.7 below will ensure impacts are reduced to insignificant levels.

Utility Projects
All utility relocation plans will incorporate recommendations, performance standards and requirements set forth in the Project geotechnical report that will adequately remediate for the limited areas of potentially expansive soils that may occur in the project area. Mitigation measures set forth in Section 2.8.7 below will ensure impacts are reduced to insignificant levels.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?

No Impact. The project consists of the improvement to existing channel facilities and the relocation of several utilities. There are no housing units or businesses proposed as part of the project and no existing or future septic tanks or other wastewater treatment facilities will be affected by the project. Thus, sewer or wastewater disposal facilities will not be required. Therefore, no impacts are anticipated.

2.8.7 Mitigation Measures

The Proposed Project will not have a significant adverse on the environment nor will it be significantly affected by geotechnical conditions that cannot be adequately addressed through project design and engineering, and standard construction management. These include implement the various design and

remedial grading recommendations set forth in the Genterra Geotechnical Investigation prepared for this project. Therefore, while specific mitigation measures are not required, the following measures are recommended to ensure that appropriate structural and geotechnical engineering are incorporated in final project design.

Mitigation Measures

GEO-1. California Building Code
Final channel design and engineering shall conform to the prevailing California Building Code (CBC), and Caltrans design standards for bridges where appropriate, in order to mitigate the effects of groundshaking and earthquake damage.

GEO-2. Structural Foundation
Structural foundation designs and subsurface soil improvements shall be conducted as recommended in the Genterra Geotechnical Investigation and based on the California Code of Regulations Volume 18, Title 14, Article 10, Section 3721[a]) to minimize liquefaction hazards. Such measures shall include but are not limited to overexcavation and hydrocompaction, other remedial grading, strengthening and deepening structural foundations.

GEO-3. Ground Improvements
Ground improvements consisting of removal and recompaction of loose, near surface sandy soils, is required to minimize dynamic settlement of dry soils. Other methods may include deep dynamic compaction, additives to the soils, such as cement or fiber (e.g., nylon) and flooding of in-place loose granular soils, to increase the density of the resultant compacted fill and thereby removing or reducing to insignificant levels the tendency to settle under dynamic shaking. Deep foundation elements should also be considered, as determined by the project geologist, when effective at bypassing zones of loose sand subject to dynamic settlement.

GEO-4. Dust Control/Soil Erosion Plan
All grading plans shall include a soil erosion prevention/dust control plan. Blowing dust and sand during grading operations shall be mitigated by adequate watering of soils prior to and during grading, and limiting the area of dry, exposed and disturbed materials and soils during these activities. To mitigate against the effects of wind erosion after site development, a variety of measure shall be provided including maintaining moist surface soils using chemical soil stabilizers or by other approved means.

GEO-5. Graded Slopes
Unprotected, permanent graded slopes shall not be steeper than 3:1 (horizontal/vertical) to reduce wind and water erosion. Fill slopes shall be overfilled and trimmed back to competent material. Fill slope surfaces shall be compacted to 90% of the laboratory maximum dry density by either over-filling and cutting back to expose a compacted core, by approved mechanical methods and as otherwise recommended in the Genterra Geotechnical Investigation.

GEO-6. Grading Site Drainage
Positive site drainage shall be established during finish grading. Finish grading shall include a minimum positive gradient of 2% away from adjacent structures for a minimum distance of 3 feet and a minimum gradient of 1% to any street.

GEO-7. Scour Protection
Installation of slope protection, cutoff walls, deepening of proposed foundations below the maximum depth of scour and comparable measures shall be applied, as determined by the project geologist, to mitigate potential scour and any resulting slope instability.

GEO-8. Soil Erosion Protection
There shall be a cessation of grading activities during rainstorms or high wind events. As necessary, the project contractor shall install flow barriers and soil catchments (such as straw bales, silt fences, and temporary detention basins) during construction to control soil erosion.

GEO-9. Dust Control Measures
The project contractor shall ensure that the dust control measures set forth in Sections 2.4 and 2.9 are implemented to control wind-blown sand during construction. Project grading shall be conducted in strict compliance with the requirements of the SCAQMD and the Coachella Valley PM10 SIP.

GEO-10. Recompacting Soils
Excavated soils may be used as fill material so long as they are free of organic or deleterious matter, including any expansive soils. Rocks or concrete larger than 6 inches in greatest dimension shall be removed from fill or backfill material. Prior to integrating reconditioned fill soil onto needed sites, receiving areas shall be scarified or overexcavated, brought to near optimum moisture conditions, and recompacted to at least 90% relative compaction (ASTM D1557).

GEO-11. Imported Soils
Imported soils (if needed) shall be non-expansive, granular soils meeting USCS classifications of prescribed in the Genterra Geotechnical Investigation. Imported fill shall be placed in maximum 8-inch lifts (loose) and compacted to at least 90 percent relative compaction (ASTM D 1557) near optimum moisture content.

GEO-12. Excavations
Excavations within sandy soil shall be kept moist, but not saturated, to reduce the potential of caving or sloughing. Where excavations over 4 feet deep are planned, lateral bracing or appropriate cut slopes of 1.5:1 (horizontal/vertical) shall be provided. No surcharge loads from stockpiled soils or construction materials shall be allowed within a horizontal distance measured from the top of the excavation slope and equal to the depth of the excavation.

GEO-13. Ground Densification
Removal and recompaction of susceptible soils, flooding and surcharging, and/or other ground densification techniques shall be implemented to mitigate hydro-collapse potential.

GEO-14. Expansive Soils
Standard geotechnical practices such as excavation of the expansive soils and replacement with non-expansive compacted fill (by using additional steel reinforcing in foundations, presoaking, and drainage control devices) shall also be used as determined appropriate by the geotechnical and structural engineers.

2.8.8 Significance After Mitigation

The geotechnical conditions in which the subject reach of the CVSC will be constructed pose certain constraints, including seismic, high groundwater and soil conditions that require specific design and engineering solutions. With the application of the avoidance/minimization/mitigation measures set forth above and in the Genterra Geotechnical Investigation, impacts associated with project geotechnical conditions will be mitigated to a level of less than significant.

2.8.9 Cumulative Impacts

A consideration of cumulative effects associated with geotechnical conditions includes the degree to which a project may contribute to the cumulative impacts from seismic events, high groundwater, marginal soils, steep and unstable terrain and other conditions. The Proposed Project will not significantly increase the community impacts associated with prevailing geotechnical conditions in the Coachella Valley, nor will it have a cumulatively considerable effect on geotechnical hazards or risk in the project area.

2.9 Greenhouse Gas Emissions

2.9.1 Introduction

This section of the EIR describes the existing greenhouse gas conditions within the Coachella Valley, and analyzes the potential impacts associated with the construction, operation and maintenance of the subject reach of the CVSC. A variety of local and regional data and information, ranging from research and analysis conducted for the project site, to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects on GHG emissions and climate change. An Air Quality and Greenhouse Gas Report was prepared for this project and is provided in Appendix B of this EIR.

2.9.2 Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the project would have a significant effect on greenhouse gases if it were to:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

2.9.3 Regulatory Framework

California was the first state to establish regulations that require the reduction of emissions of GHGs from motor vehicles. On September 24, 2004, the California legislature adopted a bill that requires all motor vehicles of 2009 vintage or later to reduce their greenhouse gas emissions by about 30% by the year 2016. On June 1, 2005 Governor Arnold Schwarzenegger issued executive order S-3-05, which calls for reduction in GHG emission to 1990 levels by 2020 and for an 80 percent reduction below 1990 levels by 2050.

The California Global Warming Solutions Act (AB 32) was adopted by the state legislature in 2006. It sets forth a program to achieve 1990 emission levels by 2020 and requires CARB to proclaim 1990 GHG emissions and develop a Scoping Plan, which sets forth GHG reduction methods. CARB has reported that 1990 GHG emissions totaled 427 million metric tons (MMT) for the state of California; CARB adopted a GHG scoping plan on December 11, 2008. The Scoping Plan includes a cap and trade program, green building strategies, recycling and waste reduction, and Voluntary Early Actions and Reductions.

More recently, Executive Order B-30-15 was issued by Governor Brown on April 29, 2015 establishing a new California goal to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 ensuring the state will continue its efforts to reduce carbon pollution. Most recently, this 40% target was codified through Senate Bill 32 (2016), which adds section 38566 to the Health and Safety Code and requires that CARB ensure statewide GHG emissions meet the 40% reduction target no later than Dec. 31, 2030.

California SB 375 was signed by the Governor in September 2008 and is intended to at least in part implement greenhouse gas reduction targets set forth in AB 32 by setting regional "caps" on the GHGs emitted by the transportation sector. The bill encourages regional land use planning to reduce vehicle miles traveled and requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy as part of their Regional Transportation Plans. The applicable MPO for the Coachella Valley is the Southern California Association of Governments ("SCAG"), which adopted its most recent Regional Transportation Plan and sustainable communities strategy in April of 2016. The current reduction targets from SCAG's RTP and SCS are 9% reduction by 2020 and a 16% reduction by 2035, as compared to 2005 emissions levels.

Regional Climate Action Plans

In December 2015, the County of Riverside approved a Climate Action Plan (CAP). The CAP established goals and policies that incorporate environmental responsibility into its daily management of residential, commercial and industrial growth, education, energy and water use, air quality, transportation, waste reduction, economic development and open space and natural habitats to further their commitment towards reducing GHG emissions.

Riverside County has set a goal in accordance with AB 32 to reduce emissions back to 1990 levels by the year 2020. This target was calculated as a 15% decrease from 2008 levels, as recommended in the AB 32 Scoping Plan. The estimated community-wide emissions for the year 2020, based on population and housing growth projections associated with the assumptions used in the County's 2015 General Plan Update, are 12,129,497 MT CO2e. In order to reach the reduction target, Riverside County must offset this growth in emissions and reduce community-wide emissions to 5,960,998 MT CO2e by the year 2020.

In order to reach the reduction target, the County of Riverside would need to implement various state policies and the additional local reduction measures described in the County's CAP. These measures encourage energy efficiency and renewable energy in buildings, transit oriented planning, water conservation, and increased waste diversion. Riverside County does not have project- o- region-specific thresholds for GHG emissions at this time. The CAP was challenged in January 2016. It is unclear how the litigation will impact the implementation of the CAP. However, at this time, the CAP is in full force and effect.

The City of Coachella CAP established a per service population 2020 emissions reduction target of 15% below 2010 levels (187,262 tonnes) and a 2035 emissions reduction target of 49% below 2010 levels (786,993). The Proposed Project will result in essentially a one-time project and associated emissions, and will not be an ongoing source of GHGs. It should also be noted that the Proposed Project is not subject to the provisions of either the County or City CAP.

2.9.4 Environmental Setting

The effects of GHG emissions and concentrations in the atmosphere have caused the adoption of governmental policies and regulations that reduce the amount of GHGs being emitted by land use development and other projects and activities. While the stormwater project will not be a significant emitter of GHGs following construction, the building of these improvements will result in substantial one-time GHG emissions, which are analyzed in detail in Section 3.8 of this EIR.

Greenhouse Gas Emissions

The CVSC project area is located in the Coachella Valley portion of the Salton Sea Air Basin (SAAB or Air Basin). Some air polluting agents are also greenhouse gases such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases (hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride), which are released into the atmosphere through natural processes and human activities. These

gases are termed greenhouse gases (GHG) due to their shared characteristic of trapping heat, and are at least partially responsible for the global average increase in surface temperatures of 0.7-1.5°F that were observed during the 20th century. Between 1990 and 2010, the concentration of CO_2 in the atmosphere increased by 42%, methane by 15%, and NOx by 9%.

Carbon dioxide is the primary greenhouse gas that has raised the most concern of atmospheric scientists due to current atmospheric levels, current and projected emission levels, and the highly correlated temperature regression curve that has been observed, predicting a future path of rising carbon dioxide levels. In 2013, global CO_2 levels reached 400 parts per million (ppm) and have continued to rise to more than 407 ppm in 2016.[79] Comparatively, prior to the Industrial Revolution about 250 years ago, CO_2 levels were 278 ppm, and over the past 650,000 years carbon dioxide levels have fluctuated between 180 and 300 ppm, making present day atmospheric CO_2 levels substantially greater than at any point in the past 650,000 years. In 2004, the State of California generated 492 million metric tons (MT) of carbon dioxide equivalent (CO_{2e}). In 2014 the State of California generated 441.5 million MT of CO_{2e}, representing an overall decrease of 9.4% since 2004 (CARB 2016). During the 2000 to 2014 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 13.9 MT per person to 11.4 MT per person in 2014; representing a 18% decrease. GHG emission reductions are attributed to energy conservation measures such as use of more fuel-efficient vehicles, wider use of alternative modes of transportation, and energy efficient appliances and building materials that are prescribed under Title 24 of the California Building Code.

State GHG Regulation

California was the first state to establish regulations that require the reduction of emissions of GHGs from motor vehicles. On September 24, 2004, the California Air Resources Board (CARB) adopted a bill that requires all motor vehicles of 2009 vintage or later to reduce their greenhouse gas emissions by about 30% by the year 2016. On June 1, 2005 Governor Arnold Schwarzenegger issued Executive Order S-3-05, which calls for reduction in GHG emission to 1990 levels by 2020 and for an 80% reduction below 1990 levels by 2050.

The California Global Warming Solutions Act (AB 32) was adopted by the State legislature in 2006. It sets forth a program to achieve 1990 emission levels by 2020 and requires CARB to proclaim 1990 GHG emissions and develop a Scoping Plan, which sets forth GHG reduction methods. CARB has reported that 1990 GHG emissions totaled 427 million metric tons (MMT) for the state of California; CARB adopted a GHG scoping plan on December 11, 2008. The Scoping Plan includes a cap and trade program, green building strategies, recycling and waste reduction, and Voluntary Early Actions and Reductions. More recently, Executive Order B-30-15 was issued by Governor Brown on April 29, 2015 establishing a new California goal to reduce greenhouse gas emissions to 40% below 1990 levels by 2030 ensuring the state would continue its efforts to reduce carbon pollution.

California SB 375 was signed by the Governor in September 2008 and is intended to at least in part implement greenhouse gas reduction targets set forth in AB 32. The bill encourages regional land use planning to reduce vehicle miles traveled and requires jurisdictions to adopt a Sustainable Communities Strategy (SCS).

County GHG Regulation

The project is located in the City of Coachella and the unincorporated community of Thermal, Riverside County, California. In December 2015, the County of Riverside Board of Supervisors adopted a Climate Action Plan (CAP). The CAP established goals and policies that incorporate environmental responsibility into daily management of residential, commercial and industrial development, education, energy and water use, air quality, transportation, waste reduction, economic development and open space and natural habitats to further their commitment towards reducing GHG emissions.

[79] "Trends in Atmospheric Carbon Dioxide", Global Greenhouse Gas Reference Network, NOAA. June, 2016.

Riverside County has set a goal in accordance with AB 32 to reduce GHG emissions to 1990 levels by the year 2020. This target was calculated as a 15% decrease in GHG emissions from 2008 levels, as recommended in the AB 32 Scoping Plan. The estimated community-wide emissions for the year 2020, based on population and housing growth projections associated with the assumptions used in the County's 2015 General Plan Update, are 12,129,497 MT CO2e. In order to reach the reduction target, Riverside County must offset this growth in emissions and reduce community-wide emissions to 5,960,998 MT CO2e by the year 2020.

In order to reach the reduction target, the County of Riverside would need to implement various state policies and the additional local reduction measures described in the County's CAP. These measures encourage energy efficiency and renewable energy in buildings, transit-oriented and multi-modal transportation planning, water conservation, and increased waste diversion. Riverside County does not have project- or region-specific thresholds for GHG emissions at this time. The CAP was legally challenged in January 2016 and the case is pending. It is unclear how this litigation will impact the implementation of the CAP. However, at this time, the CAP is in full force and effect.

Coachella Climate Action Plan (CAP)

The City has adopted a *Climate Action Plan*[80], which established GHG emission reduction goals and policies, including those associated with public services and facilities. It also recognizes an increased public health, water resources and high magnitude flooding threats as possible local consequences of ongoing climate change. While the CAP does no offer policies or direction specific to meeting the potential for increased flooding associated with climate change, addressing the root causes will help to address this threat.

2.9.5 Existing Conditions

The project area is located in the Coachella Valley portion of the Salton Sea Air Basin (SSAB or Air Basin). The Coachella Valley portion of the SSAB is typical of a low desert climate, with summer daytime temperatures that can exceed 110°F and drop into the 20's during winter nights. The valley floor receives an average of four to six inches of rainfall per year with greater precipitation at higher elevations.

Climate Change and Greenhouse Gas

Air pollution is a chemical, physical or biological process that modifies the chemistry and other characteristics of the atmosphere. The primary contributor to air pollution is the burning of fossil fuels used in transportation, power and heat generation, and industrial processes. The byproducts from the combustion of fossil fuels can contain a number of air polluting substances. These emissions are responsible for the poor air quality that is evident in industrial centers worldwide.

Some air polluting agents are also greenhouse gases (GHG), such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases (hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride), which are released into the atmosphere through natural processes and human activities. These gases are termed greenhouse gases due to their shared characteristic of trapping heat, and are believed to be responsible for the global average increase in surface temperatures of 0.7-1.5 °F that were observed during the 20th century.[81] The quantity of greenhouse gases in the atmosphere has increased significantly over a relatively short period. More recently, concentration of CO_2 in the atmosphere increased by 42%, methane by 15%, and NOx by 9% from 1990 to 2010.[82]

80 "Climate Action Plan", City of Coachella June 2014.
81 U.S. Environmental Protection Agency, State of Knowledge. 2017.
82 U.S. Environmental Protection Agency, Figure 1: Global Greenhouse Gas Emissions by Gas, 1990-2010, May 2014.

Carbon dioxide is the primary greenhouse gas that has raised the most concern of atmospheric scientists due to current atmospheric levels, current and projected emission levels, and the highly correlated temperature regression curve that has been observed, predicting a future path of rising carbon dioxide levels. Currently (2017), carbon dioxide concentrations in the atmosphere exceed 400 ppm. Comparatively, prior to the Industrial Revolution, about 250 years ago, CO_2 levels were 278 ppm, and over the past 650,000 years carbon dioxide levels have fluctuated between 180 and 300 ppm, making present day atmospheric CO_2 levels substantially greater than at any point in the past 650,000 years.[83]

There is much debate over what the effects of climate change will be, but there is a general consensus that the levels of emissions need to be reduced in order to minimize the effects these pollutants will have on future climate conditions. California is the second largest greenhouse gas contributor in the U.S. and the sixteenth largest in the world. In 2004, California produced 492 million metric tons of CO_2 equivalent (MMTCO2e), which was approximately 7% of all U.S. emissions. However, in 2015, California's total emissions were 440.4 $MMTCO_2e$, representing an overall decrease of 10% since peak levels in 2004.

During the 2000 to 2015 period, per capita GHG emissions in California continued to drop from a peak in 2001 of 14.0 tons per person to 11.3 tons per person in 2015, a 19% decrease.[84] This decrease may be due to increases in the effectiveness of energy conservation in buildings (Title 24 requirements) and the increased use of renewable energy, including solar generation, hydropower, and wind energy. The transportation sector remains the largest source of GHG emissions in the state, accounting for 37% of California's emissions in 2015. Regulations and improved fuel efficiency of the state's vehicle fleet will drive down emissions over time, but population growth, lower fuel prices, improved economic conditions and higher employment rates are potential factors that may increase fuel use.[85]

2.9.6 Project Impacts

The proposed channel improvement project extends for approximately two miles between Avenue 54 on the north and the Thermal Drop Structure to the south. Construction of the Proposed Project is anticipated to occur over a one-year period starting in 2020 with buildout in 2021. Construction activities will include construction staging, staging area and channel access grading, incremental channel earthwork, material hauling, pouring of concrete and final channel grading. Construction-related GHG emissions are temporary and end once construction is complete. However, GHG emissions from construction will be amortized over a 30-year period and added to operational emissions to be compared to the applicable GHG threshold per SCAQMD recommendation[86]. Operational GHG emissions associated with channel's operation and maintenance are limited to fossil fuel use in service trucks, grading and hauling equipment.

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Construction Related Greenhouse Gas Emissions

Less than Significant. Construction activities will result in short-term GHG emissions associated with operation of construction equipment, employee commute, material hauling, and other ground disturbing activities. There are currently no construction-related GHG emission thresholds for projects of this nature.

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83 "Working Group III Contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report, Climate Change 2007: Mitigation of Climate Change," prepared by the Intergovernmental Panel on Climate Change, May 2007.

84 "California Greenhouse Gas Emission Inventory: 2000-2015," California Environmental Protection Agency Air Resources Board, June 6, 2017.

85 Ibid.

86 "Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans," SCAQMD, December 5, 2008.

To determine if construction emissions will result in a cumulative considerable impact, buildout GHG emissions were amortized over a 30-year period and added to annual operational emissions to be compared to applicable GHG thresholds.

GHG emissions from channel construction are temporary and will not substantially affect climate or interfere with a GHG reduction plan, including both the Riverside County and City of Coachella Climate Action Plans. All components of construction, including equipment, fuels, materials, will be subject to current regulations of GHGs and equipment efficiency standards, which are meant to reduce GHG emissions. The following table summarizes the estimated GHG emissions from construction of the Proposed Project.

Table 2-10
Construction GHG Emissions Summary
(Metric Tons/Year)

	CO_2	CH_4	N_2O	Total CO_2e
Buildout	4,088.72	1.07	0.00	4,115.53
Source: CalEEMod Versions 2016.3.2. See Appendix B of this DEIR for detailed tables. Values shown represent the total unmitigated GHG emission projections for construction of the Proposed Project. CO_2e includes the remaining GHG pollutants, such as hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.				

Operational Greenhouse Gas Emissions

Less than Significant. There are five emission source categories that contribute either directly or indirectly to operational GHG emissions, including energy/electricity usage, water usage, solid waste disposal, area emissions (pavement and architectural coating off-gassing), and mobile sources. CVWD currently provides maintenance services to the proposed section of the channel, include vegetation removal/maintenance and other facility services. The Proposed Project will not require additional operational or maintenance services. Therefore, impacts will be limited to area emissions and the amortized construction emissions.

On December 5, 2008, the SCAQMD formally adopted a greenhouse gas significance threshold of 10,000 MTCO2e/yr that only applies to stationary sources (industrial uses) where SCAQMD is the lead agency (SCAQMD Resolution No. 08-35). This threshold was adopted based upon an October 2008 staff report and draft interim guidance document[87] that also recommended a threshold for all projects using a tiered approach.

It was recommended by SCAQMD staff that a project's greenhouse gas emissions would be considered significant if it could not comply with at least one of the following "tiered" tests:

- **Tier 1:** Is there an applicable exemption?
- **Tier 2:** Is the project compliant with a greenhouse gas reduction plan that is, at a minimum, consistent with the goals of AB 32?
- **Tier 3**: Is the project below an absolute threshold (10,000 MTCO2e/yr for industrial projects; 3,000 MTCO2e/yr for residential and commercial projects)?
- **Tier 4:** Is the project below a (yet to be set) performance threshold?
- **Tier 5:** Would the project achieve a screening level with off-site mitigation?

The proposed channel improvement project is consistent and compliant with Tier 3, in that the project is considered an industrial project with an absolute threshold below 10,000 MTCO2e/yr. Due to the project's low annualized GHG emissions as compared to baseline conditions, the channel improvement project will not generate significant levels of GHGs, directly or indirectly, that would impact the environment.

87 Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, prepared by SCAQMD, October 2008.

Table 2-11
Operational GHG Emission Summary
(Metric Tons/Year)

	CO_2	CH_4	N_2O	CO_2e
Energy/Water/Solid Waste Emissions	0.00	0.00	0.00	0.00
Area Emissions	0.00038	0.00	0.00	0.0004
Buildout plus Amortized Construction Emissions[1]				137.18
Exceeds Thresholds?				**No**

Source: CalEEMod Version 2016.3.2. See Appendix B of this DEIR for detailed tables. Values shown represent the total unmitigated GHG emission projections for operation of the Proposed Project.
1. Buildout construction GHG emissions were amortized over 30-years then added to buildout operational GHG emissions. 4,115.53/30 =137.18

As shown on Table 3.8-2, GHG emissions associated with channel maintenance and operation is negligible, with amortized construction-related emissions being the bulk of annual post-construction emissions. Therefore, the Proposed Project will not generate greenhouse gas emissions, either directly or indirectly, that may have a potentially significant impact on the environment and no mitigation is required.

Utility Projects
Greenhouse gas emissions associated with all utility relocation projects have been accounted for in the above, overall Project impact analysis. As shown on Table 2-11, GHG emissions associated with Project operation is negligible, with amortized construction-related emissions being the bulk of annual post-construction emissions. Therefore, the utility projects will not generate greenhouse gas emissions, either directly or indirectly, that may have a potentially significant impact on the environment and no mitigation is required.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Less than Significant. All components of construction, including equipment, fuels, materials, and management practices, would be subject to current SCAQMD rules and regulations related to greenhouse gases. Applicable SCAQMD rules include, but are not limited to, source specific standards that reduce the greenhouse gas content in engines and limit equipment idling durations. In addition, project-related GHG emissions will not exceed established GHG thresholds for construction because there are no such thresholds established. Therefore, this GHG impact would be less than significant.

Operation and maintenance of the subject channel reach would not exceed SCAQMD thresholds for operational emissions as shown in Section 2.9.6a, above. Most of the project's GHG emissions will occur within the few months of construction due to operation of heavy equipment, and there will be no new GHG emissions associated with channel operations and maintenance because that portion of the channel is currently being maintained by CVWD.

In addition, the project will not conflict with the goals of executive order S-3-05 or the 40% GHG reduction goal recently codified through Senate Bill 32 (2016) because (1) it is not considered a "large emitter" of GHGs (25,000 MT CO_2e/year) requiring cap-and-trade regulation per CARB's regulatory measure to help achieve statewide GHG reduction goals.

The project is also consistent with regional GHG reduction goals, as they pertain to the Project, by adhering to the required state Low Carbon Fuel Standard for construction equipment and heavy-duty vehicle efficiency standards. The project would not conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of GHGs. This impact would be less than significant.

Utility Projects

Greenhouse gas emissions associated with all utility relocation projects have been accounted for in the above overall Project impact analysis. GHG emissions associated with Project and utility operations are negligible, with amortized construction-related emissions being the bulk of annual post-construction emissions. The Project will not conflict with the goals of executive order S-3-05 or the 40% GHG reduction goal recently codified through Senate Bill 32 (2016) The project is also consistent with regional GHG reduction goals, as they pertain to the Project, by adhering to the required state Low Carbon Fuel Standard for construction equipment and heavy-duty vehicle efficiency standards. The utility projects would not conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of GHGs. These impacts would be less than significant.

2.9.7 Mitigation Measures

There are no potentially significant impacts. Mitigation measures are not required.

2.9.8 Significance After Mitigation

There are no potentially significant GHG impacts and a mitigation program is not required.

2.9.9 Cumulative Impacts

Cumulative impacts were analyzed on a regional scale due to the dispersing nature of these pollutant emissions and aggregate impacts from surrounding jurisdictions and air management districts. Through analysis of the regional and statewide plans for GHG reductions, a summary of projects approach was used. The geographic scope for the analysis of potential cumulative greenhouse gas impacts is the overall Salton Sea Air Basin region in which the facilities are being constructed and operated. However, some percentage of vehicular emissions GHGs associated with the construction, operations and maintenance of the channel facilities may also come from sources outside of the SSAB.

Therefore, cumulative greenhouse gas impacts were assessed on a regional scale due to the dispersing nature of these pollutant emissions and aggregate impacts from surrounding jurisdictions and air management districts. Operation and maintenance of the subject channel reach would not exceed SCAQMD thresholds for operational emissions. Most of the project's GHG emissions will occur within the few months of construction due to operation of heavy equipment, and there will be no new operational emissions as CVWD currently maintains that portion of the channel. Therefore, the Proposed Project will not make a cumulatively considerable contribution to GHG levels

2.10 Hazards & Hazardous Materials

2.10.1 Introduction

This discussion describes hazardous materials and other hazards to public health and safety that could result from the proposed channel improvement project. Potential construction and operational and maintenance impacts of the project related to hazards and hazardous materials are analyzed, and mitigation measures are proposed, as appropriate. Hydraulic/flooding hazards are discussion in Section 2.11 Hydrology, below.

The discussion evaluates potential impacts from regional hazards including public and private airports and wildfire hazards. In March 2016, an Initial Site Assessment[88] was prepared to support the analysis in this section and is included as Appendix D.

For analysis purposes, the term "hazardous materials" refers to both hazardous substances and hazardous wastes.[89] Under federal and state law, materials and wastes may be considered hazardous if they are specifically listed by statute or if they are toxic, ignitable, corrosive, or reactive. In some cases, past industrial or commercial activities on a site could have resulted in spills or leaks of hazardous materials to the ground, resulting in soil and/or groundwater contamination. Hazardous materials may also be required as part of, or result from, operation of a project.

If improperly handled, hazardous materials and waste can cause public health hazards when released to the soil, groundwater, or air. The four basic exposure pathways through which an individual can be exposed to a chemical agent include: inhalation, ingestion, bodily contact, and injection. Exposure can come as a result of an accidental release during construction, which can also lead to exposure of workers or the public to health hazards when released to the soil, groundwater, or air. Disturbance of subsurface soil during construction can also lead to exposure of workers or the public from stockpiling, handling, or transportation of soils contaminated by hazardous materials from pervious spills or leaks.

2.10.2 Thresholds of Significance

For the purposes of this EIR, the CEQA Guidelines' Appendix G is utilized to determine if the proposed channel improvement project would have a significant effect relating to hazards and hazardous materials within the project planning area. Impacts would be significant if the project:

a) Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

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

c) Emits hazardous emissions or handles hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

d) Would be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to public to the public or the environment.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

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88 "Phase I Environmental Site Assessment for the Coachella Valley Stormwater Channel Improvement Project", prepared by Terra Nova Planning & Research, Inc. March 2016.

89 The California Health and Safety Code defines a hazardous material as "any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials and any material.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

2.10.3 Regulatory Framework

Federal

U.S. Department of Transportation Hazardous Materials Transport Act (49 USC 5101)
The U.S. Department of Transportation, in conjunction with the U.S. Environmental Protection Agency (USEPA), is responsible for enforcement and implementation of federal laws and regulations pertaining to transportation of hazardous materials. The Hazardous Materials Transportation Act of 1974 directs the U.S. Department of Transportation to establish criteria and regulations regarding the safe storage and transportation of hazardous materials. CFR 49, 171–180, regulates the transportation of hazardous materials, types of material defined as hazardous, and the marking of vehicles transporting hazardous materials.

Federal Resource Conservation and Recovery Act
The Resource Conservation and Recovery Act (RCRA) gives the USEPA the authority to control hazardous waste from "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also sets forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Federal Aviation Administration
The Federal Aviation Administration (FAA) has jurisdiction over airspace in the United States. The Federal Aviation Regulations (FAR) provide criteria for evaluating the potential effects of obstructions on the safe and efficient use of navigable airspace within approximately two to three miles of airport runways. The FAA requires notification of proposed construction projects that meet specific height requirements. As indicated, the Palm Springs International Airport, Bermuda Dunes Executive Airport and Jacqueline Cochran Regional Airport are in the vicinity of some the project.

State

California Occupational Safety and Health Act – California Labor Code, Section 6300
The California Occupational Safety and Health Act of 1973 addresses California employees' working conditions, enables the enforcement of workplace standards, and provides for advancements in the field of occupational health and safety. The Act also created the California Occupational Safety and Health Administration (Cal OSHA), the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal OSHA's standards are generally more stringent than federal regulations. Under the former, the employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure.

The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substances and hazardous substance exposure warnings. At sites known or suspected to be contaminated by hazardous materials, workers must have training in hazardous materials operations and a Site Health and Safety Plan must be prepared. The Health and Safety Plan establishes policies and procedures to protect workers and the public from exposure to potential hazardous at the contaminated site.

California Health and Safety Code, Title 22, Chapter 20 Hazardous Waste Permit Program

Title 22, Chapter 20 Hazardous Waste Permit Program, establishes provisions for the issuance and administration of hazardous waste permits pursuant to the Health and Safety Code. Regulations cover basic permitting requirements, such as application requirements, standard permit conditions, and monitoring and reporting requirements. Hazardous Waste Permits are required for the transfer, treatment, storage, and disposal of any hazardous waste pursuant to section 66261.3. Owners and operators of certain facilities require hazardous waste facility permits as well as permits under other programs for certain aspects of the facility operation.

California Health and Safety Code, Division 20, Chapter 6.5, Hazardous Waste Control Law

The California Health and Safety Code, Division 20, Chapter 6.5, Hazardous Waste Control Law regulates hazardous wastes generated within the State of California. The Law identifies proper guidance for the handling, storage, use, and disposal of hazardous wastes. Additionally, the law identifies the need for proper landfill disposal in order in order to reduce long-term threats to public health and to air and water quality.

Included in this is the preparation of Hazardous Materials Business Plans (HMBPs) (Chapter 6.95 of the Health and Safety Code, Sections 25501 et seq.), which are required of businesses that handle specified quantities of chemicals in accordance with community right-to-know laws. This plan allows local agencies to plan appropriately for a chemical release, fire, or other incidents. Hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

License to Transport Hazardous Materials – California Vehicle Code, Section 32000.5 et seq.

Caltrans regulates hazardous materials transportation on all interstate roads. Within California, the State agencies with primary responsibility for enforcing federal and State regulations and for responding to transportation emergencies are the California Highway Patrol (CHP) and Caltrans. Together, federal and State agencies determine driver-training requirements, load labeling procedures, and container specifications for vehicles transporting hazardous materials.

California Fire Code, Title 24, Part 9, Chapters 33, 50, and 57

The 2013 California Fire Code (CFC), written by the California Building Standards Commission, is based on the 2012 International Fire Code. The International Fire Code (IFC) is a model code that regulates minimum fire safety requirements for new and existing buildings, facilities, storage and processes. The IFC addresses fire prevention, fire protection, life safety, and safe storage and use of hazardous materials in new and existing buildings, facilities, and processes.

Uniform Fire Code

The Uniform Fire Code, Article 80 (Section 80.103 of the Uniform Fire Code as adopted by the State Fire Marshal pursuant to Health and Safety Code Section 13143.9), includes specific requirements for the safe storage and handling of hazardous materials and for mixing of incompatible chemicals, and specifies specific design features to reduce the potential for a release of hazardous materials that could affect public health or the environment.

Emergency Response Planning

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government and private entities. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Health Department's Emergency Services, which coordinates the responses of other agencies. The Riverside County Environmental Health Department's Emergency Response Team provides the capabilities for hazardous materials emergencies within the project area. Emergency Response Team members respond and work with local fire and police agencies, California Highway Patrol, California Department of Fish and Wildfire and the California Department of Transportation.

CAL FIRE

CAL FIRE maps identify fire hazard severity zones in the state and local responsibility areas. Wildland fire protection in California is the responsibility of either the state, local government, or the federal government. A Designated Safety Responsibility Area (SRA) is the area "in which the financial responsibility of preventing and suppressing fires is primarily the responsibility of the state" (Public Resources Code Section 4125). Local responsibility areas (LRA) in the project study area include incorporated cities, cultivated agricultural lands, and portions of the desert. LRA fire protection is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract to local government.

Regional/Local Plans

The Riverside County Department of Environmental Health Hazardous Materials Branch is responsible for overseeing the six hazardous materials programs in the County. The Branch is responsible for inspecting facilities that handle hazardous materials, generate hazardous waste, treat hazardous waste, own/operate underground storage tanks, own/operate aboveground petroleum storage tanks, or handle other materials subject to the California Accidental Release Program. In addition, the Branch maintains an emergency response team that responds to hazardous materials and other environmental health emergencies 24 hours a day, 7 days a week. The County-wide Hazardous Materials Emergency Response Team consists of personnel from the Riverside County Fire Department and Environmental Health HazMat Program staff. This team responds jointly to hazardous materials incidents in the County and any CalFire-contracted city, including Coachella.

2.10.4 Environmental Setting

Modern industrialization has introduced a wide array of chemical compounds and materials, and land use and activities that pose threats to human health and safety, and to the environment. Issues associated with hazards and hazardous materials include exposure through transport or disposal, and from potentially hazardous land uses. The proper disposal of hazardous and toxic waste has become an increasingly important issue, primarily due to human health and environmental concerns. Riverside County and cities in the county have jointly developed the Riverside County Hazardous Waste Management Plan (HWMP) to address the disposal, handling, processing, storage, and treatment of local hazardous materials and waste products.

The Riverside County HWMP assures that adequate treatment and disposal capacity will be available to manage the hazardous wastes generated within the jurisdiction. To implement the HWMP, the Riverside County Community Health Agency, Department of Environmental Heath, Hazardous Materials Management Division (DEH-HMMD), maintains a list of hazardous waste management small-quantity generator operations within the community of Thermal. The EPA defines a small quantity generator as a facility that produces between 100 and 1,000 kilograms (kg) of hazardous waste per month.

There are several transit routes that pass through or near the project planning area and that transport hazardous materials. These transit routes include Highway 111, US 86, and the Union Pacific Railroad. In the event a hazardous materials spill occurs on or along highways and freeways, the California Highway Patrol is responsible for coordinating clean up, with assistance from Caltrans and local law enforcement and fire agencies. The Jacqueline Cochran Regional Airport is located approximately 1.2 miles from the project area. The project site is located within the airport land use plan developed for the Jacqueline Cochran Regional Airport.

A search of environmental databases listed several properties in the planning area as having or having had the potential for hazardous releases into soils or groundwater. Further searches demonstrated that of two of these sites have had releases, which have since been properly remediated. A search of Department of Toxic

Substances Control (DTSC) database revealed no DTSC-regulated properties within or adjacent to planning area. The results of the Phase I Site ESA[90] conducted in the planning area are further discussed in Section III-H.

The portion of the CVSC located between Avenue 54 and Highway 111 has been in a similar state since at least 1947. The bottom of the channel in this area was reshaped between 1959 and 1972. Between 1959 and 1972, the onsite portion of the channel located south of Highway 111 was shifted westward. A drop structure was constructed within this area during this period. Highway 111, the Union Pacific Railroad, and Airport Boulevard have passed through the planning area since at least 1947. There have been bridges at these locations since this time. Avenue 54 traversed through the area as a low-water crossing between at least 1953 and 1984. This roadway was abandoned at the time the adjoining Highway 86S was constructed (early to middle 1990s).

Desert Cactus Drive was constructed within and immediately adjacent to the planning area during this time. The portions of the planning area located east of the stormwater channel were primarily in undeveloped states or in agricultural use between 1953 and the present. Residential dwellings have been located immediately southeast of the channel and Airport Boulevard since at least 1947. The existing dwellings in this area and adjacent to Desert Cactus Drive are currently dated between 1979 and 1991.

As shown on Figure No. 2 of the Phase I Site Assessment (see Appendix D), properties adjoining the project planning area were reviewed for evidence of possible contaminant releases as part of the Phase I ESA data search. Potential contaminant sources and/or releases were not observed in the visible portions of these adjoining properties. The CVSC extends north and south of the site. These offsite channel areas were noted to be in a similar state to that observed within the site. North of Airport Boulevard, Highway 86S and an associated off ramp at Airport Boulevard were located immediately east of the site. The properties located east of this roadway and the site was either vacant or used as equipment yards. Potential project impacts associated with hazards and hazardous materials are discussed in detail in Section 3.9 of this EIR.

2.10.5 Existing Conditions

The study area for hazardous materials includes possible contaminating activities (e.g., leaking underground storage tanks) within 0.25 miles of the project area. The study area for the evaluation of airport and airstrip impacts is within two miles of the project site. The study area for the evaluation of wildfires and emergency access includes the Proposed Project area and nearby lands.

The evaluation of impacts associated with hazards and hazardous materials includes two components: the potential for hazards or hazardous materials to be used, transported or stored as part of the Proposed Project during construction, operation and maintenance; and the potential impacts that existing hazards or hazardous materials exacerbated by the project could have on the subject channel.

The evaluation of the potential to encounter hazardous materials in soil and groundwater in the project planning area is based on federal, State, and local regulatory database reviews which identified permitted hazardous materials uses, environmental cases, and spill sites within 1/8 miles of the project site. Additional information regarding identified cases was obtained from site investigation reports available from the State Water Resources Control Board (SWRCB) Geotracker database, solid waste disposal sites identified by SWRCB, active Cease and Desist Orders and Cleanup and Abatement Orders from SWRCB, and hazardous waste subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by the State Department of Toxic Substance Control (DTSC).

[90] Phase I Environmental Site Assessment prepared for the Coachella Valley Stormwater Improvement Project Ave 54 to the Thernmal Drop, prepared by Terra Nova Planning & Research, Inc. January 2016

Permitted hazardous material uses, environmental cases and spill sites identified within 1/8 miles of the project site have been characterized as to their potential to affect subsurface conditions that might be encountered during channel construction according to the following classification:

- **Low Potential.** Facilities that are permitted to use or store hazardous waste, but have not had a documented release would be considered to have a low potential to affect the project site. Additionally, environmental cases that are listed as closed, because remediation or cleanup has been completed and approved by the regulatory agency, would be considered to have a low potential to affect the project site. The potential to affect subsurface conditions at a site would also be considered to be low if any of the following three factors is known to occur: (1) the direction of groundwater flow is away from or toward the stormwater channel; (2) the lateral extent of contamination from the occurrence is known and is not present within the proposed channel construction area; or (3) only soil was affected by the occurrence and the potentially contaminated site is not located within the project planning area or immediately adjacent to the site (within 200 feet of the construction area).

- **Moderate Potential.** The potential to affect subsurface conditions within a facility or site would be considered to be moderate, and further investigation might be necessary, if the following three factors occur: (1) an off-site occurrence was reported within 1/8 mile of the project site, but does not occur within the construction area; (2) the extent of contamination and remedial status is not known; and (3) the occurrence has affected groundwater and is located up-gradient from the project site.

- **High Potential.** The potential to affect subsurface conditions within the project planning area would be high and further investigation would be necessary, if any one of the following three factors are known to occur: (1) an off-site occurrence was reported within 1/8 of a mile of the project planning area, but does not occur within the construction area; (2) the extent of the contamination and remedial status is not known; or (3) the occurrence has affected groundwater and is located up-gradient from the project site.

Evaluation of Existing Conditions

The portion of the Coachella Valley Stormwater Channel located between the site's northern side (near Avenue 54) and Highway 111 has been in a similar state since at least 1947. The bottom of the channel in this area was reshaped between 1959 and 1972. Between 1959 and 1972, the onsite portion of the channel located south of Highway 111 was shifted westward. A drop structure was constructed within this area during this period.

Highway 111, the Union Pacific Railroad, and Airport Boulevard (formerly Avenue 56) have passed through the site since at least 1947. There have been bridges at these locations since this time. Avenue 54 traversed through the site as a low-water crossing between at least 1953 and 1984. This roadway was abandoned at the time the adjoining Highway 86S was constructed (early to middle 1990s). Desert Cactus Drive was constructed within and immediately adjacent to the site during this time.
The portions of the site located east of the stormwater channel were primarily in undeveloped states or in agricultural use between 1953 and the present. Residential dwellings have been located immediately southeast of the channel and Airport Boulevard since at least 1947. The existing dwellings in this area and adjacent to Desert Cactus Drive are currently dated between 1979 and 1991.

Onsite Hazardous Material Sources and Releases

With the exception of two oil pipelines, evidence for aboveground or underground storage tanks, clarifiers, sumps, or other potentially hazardous material-containing structures was not encountered on any portion of the site during this assessment or in documents obtained for this assessment. At least one oil pipeline (Kinder Morgan) crosses under the channel at its intersection with Highway 111. Releases from pipelines in this area have not been reported nor were any observed at the time of this assessment. With the possible exception of pesticides and lead, potential releases of petroleum hydrocarbons and/or chemicals were not encountered during a reconnaissance of the site, or during a review of background materials for the site.

Based on the periodic agricultural use of the properties located within the site's eastern portion, there is a potential that the near-surface soils within this area contain detectable pesticide concentrations Due to the absence of orchards (relatively heavy users of pesticides) and vacant state since the early 1990s, the potential for elevated pesticide concentrations (greater than regulatory limits) is considered relatively low.

Relatively elevated lead concentrations (higher than background levels) are generally anticipated within near-surface soils immediately adjacent to (within 15 feet) historic roadways as a result of aerially deposited lead (ADL) from vehicle emissions. The phasing out of leaded gasoline began in 1973, and has been banned in California since 1992. Elevated lead concentrations are not, therefore, anticipated in the soils adjoining Highway 86S or Desert Cactus Drive (constructed in the early 1990s). Due to the relatively light use of Airport Boulevard and Highway 111, elevated lead concentrations are also not anticipated in the near-surface soils along these roadways. Field data recently collected verified this.

Representative surface soil samples were taken at locations adjacent to more than 20 relatively old roadways within the Coachella Valley at their crossing with the Whitewater River and Coachella Valley Stormwater Channels, between North Indian Canyon Drive in Palm Springs and Avenue 52 in Coachella. These collected samples were reported with relatively low lead concentrations (not considered potentially hazardous to health based on current screening levels). Based on a review of current State requirements, the soil adjacent to those roadways could be handled as a non-hazardous waste and reused as construction fill.

On-Site Conditions

The subject reach of the CVSC is subject to ongoing maintenance, including grading and vegetation mowing to preserve stormwater flow capacity. Channel soils appeared to be comprised primarily of sands and silts, with a crust of salt occurring across portions of the channel bottom. The city of Coachella's sanitation treatment plant discharges treated/reclaimed municipal wastewater into the channel in the site's northern portion. Indications of odorous or stained water and/or soil were not encountered at the outlet area. Note that this water is discharged under permit, indicating that it is frequently observed and tested by the Regional Water Quality Control Board.

Three markers for buried utilities were encountered adjacent to the railroad bridge within the site. One of these markers noted the presence of a high pressure natural gas line. The other two markers were for communication lines. Pipelines were not observed attached to the railroad bridges or the adjoining bridge for Highway 111. Two apparent water pipelines were secured to the south side of the bridge at Airport Boulevard. Evidence for petroleum hydrocarbon and/or chemical pipelines was not encountered during this onsite review. However, utility mapping indicates the location of a 20-inch Kinder Morgan petroleum pipeline that extends from approximately 200 feet upstream and 200 feet downstream of the channel, between Highway 111 and the UPRR lines. Frontier Communications provides telecommunications and data services to the project planning area. A 12-inch fiber optic cable conduit is located within and crosses the southern portion of the channel between the UPRR lines and Highway 111.

Utility poles and electric lines are located along the western side of the western levee. They also cross the channel in the site's northern portion (at Avenue 54) and at Airport Boulevard. They were also located within some of the properties southeast of the channel and Airport Boulevard. Electric transformers were mounted on one of the utility poles north of Airport Boulevard (west side of channel), as well as within the properties locate southeast of the channel and Airport Boulevard. Indications of oil releases from these transformers were not observed at the time of this assessment.

A relatively minor quantity of nuisance debris was encountered throughout the site. A relatively heavy concentration of nuisance debris was encountered immediately south of Airport Boulevard on the eastern side of the channel. The debris encountered within the site included vehicle tires, lumber, concrete pipe, old furniture, sheet metal, cardboard, construction debris, and empty food and beverage containers. Potentially hazardous debris was not encountered within the site.

Recognized Off-Site Environmental Conditions

Recognized environmental conditions and/or historical recognized environmental conditions were not identified within the project planning area during the Phase 1 ESA. As shown in Table 2-12, potentially hazardous materials or releases were identified in the project vicinity. There are 41 properties listed within one mile of the channel improvement site that have, or have had the potential to release hazardous materials into the subsurface soil and/or groundwater. Eighteen of these properties are located immediately adjacent to the site or up-gradient (north-northwest) and within 1/4 mile of the site. Hazardous materials released at such properties would, due to their location, have the greatest potential to impact the soil and/or groundwater underlying the channel improvement site. Impacted groundwater beneath offsite properties could migrate into or toward the subject site. A description of these properties is listed on the table below.

Table 2-12
Summary of EDR® Properties Located Upgradient and within ¼ Mile of the Site

EDR ID No.	Property/Business Name & Address	Listed Databases	Comments
A1 A8 A9	California Redi Date 87500 Airport Blvd., Thermal, CA	HAZNET, WDS, RCRA-SQG, FINDS, NPDES	This property was reported as being a small quantity generator of potentially hazardous materials. It is also reported as having shipped potentially hazardous materials (waste oil and liquids with low pH) to recyclers. It is reported as having a permit to treat and/or dispose animal waste. There have been no reported hazardous material releases within this property.
A2 A3 A4 A5	Riv. Co. Road Yard 87495 Airport Blvd., Thermal, CA	RGA LUST, LUST, HIST Cortese	Gasoline leaked from an underground tank on this property and impacted the underlying soil and groundwater. This case was closed in 1997, indicating that the impacted soil and groundwater were cleaned to the satisfaction of the regulating agency.
A6 A7	Alala's Auto Repair 87425 Airport Blvd., Thermal, CA	HAZNET, EDR US Hist Auto Stat	This property was reported as having shipped potentially hazardous materials (waste oil and solvents) to recyclers. There have been no reported hazardous material releases within this property.
B10 B11 B12	GTE 56189 Highway 111, Thermal, CA	HAZNET, LUST, Hist Cortese, SWEEPS UST, CA FID	Diesel leaked from an underground tank on this property and impacted the underlying soil. This case was closed in 1988 (soil cleaned or removed). This property is also reported to ship potentially hazardous materials (tank bottom wastes) to recyclers.

Table 2-12
Summary of EDR® Properties Located Upgradient and within ¼ Mile of the Site

C13	RDO Equipment Co. 87400 Airport Blvd., Thermal, CA	HAZNET	This property was reported as shipping potentially hazardous materials (reported as other organic solids) to recyclers. There have been no reported hazardous material releases within this property.
B14	County of Riverside 56105 Highway 111, Thermal, CA	HAZNET	This property was reported as shipping potentially hazardous materials (reported as other organic solids) to recyclers. There have been no reported hazardous material releases within this property.
B15 B16	Joe's Tune Up 55951 Highway 111, Thermal, CA	LUST, Hist Cortese	Gasoline was released from an underground tank at this property. The impacted soil and groundwater have been remediated. This case was closed in 2014.
C17 C18 C19 C20	CV Organic Fertilizers, 55591 Highway 111, Thermal, Ca	HIST UST, LUST, HIST CORTESE, HAZNET	This property was reported with three underground fuel tanks that contained diesel and gasoline. Gasoline was release from one or more of the tanks. The impacted soil and groundwater were remediated. This case was closed in 1992.
D21	The Jewel Date Co. 56474 Highway 111, Thermal, CA	HAZNET	This property was reported as having shipped asbestos from this facility to a landfill. There have been no reported hazardous material releases within this property.
D22 D23 D24 D25 D26 D27	*Apple Market 1 56491 Highway 111, Thermal, CA	HAZNET, SWEEPS UST, CA FID UST	This property was reported as having shipped potentially hazardous materials (reported as aqueous solutions and tank bottom waste) to recyclers. It is also reported with 3 underground fuel tanks. Gasoline released from underground tanks at this property impacted the underlying soil and groundwater. Remediation of the impacted soil and groundwater remains underway.
41	Dunlap Nursery 57023 Highway 111, Thermal, CA	HIST UST	This property was reported with two underground fuel tanks containing diesel and gasoline. Releases have not been reported for either of these tanks.
H46 H47 H48	Mobile Lube Express/ Ron's Water Trucks 57100 Desert Cactus Dr., Thermal, CA	HAZNET, EDR US Hist Auto Stat.	This property was reported as having shipped potentially hazardous materials (reported as other organic solids and oil-containing waste) to a recycler. This property is also reported as having been an historic auto station. There have been no reported hazardous material releases within this property.
49 J58	Karahadian Ranches, Inc., 88200 Avenue 58, Thermal, CA	HIST UST, SWEEPS UST, CA FID UST	This property was reported with three underground fuel tanks containing diesel and gasoline. Hazardous material releases have not been reported for either of these tanks.
G42 G43 G44	SSA Management 86911 Airport Blvd., Thermal, CA	LUST, HIST CORTESE, RGA LUST	This property was reported as having spilled aviation fuel from an underground fuel tank. This case was closed in 1991, indicating that the impacted soils and groundwater have been cleaned to the satisfaction of the regulating agency.
I54 I55 I56	Coachella Sanitation Department/Coachella SD WWTP 87075 Avenue 54, Coachella, CA	HAZNET, FINDS, ENF, Cortese, NPDES, WDS	This property was reported as a wastewater treatment facility. It has shipped asbestos from this location to a landfill. It is also noted as having released potential pollutants (wastewater) into a waterway (under permit and by accident). The released wastewater is not considered a potential threat to soil and/or groundwater underlying the site.
K59	Ernie Ball, Inc. 53973 Polk St., Coachella, CA	RCRA-SQG, HAZNET	This facility was reported as being a small quantity generator of potentially hazardous materials. Hazardous material releases have not been reported at this facility.

Table 2-12
Summary of EDR® Properties Located Upgradient and within ¼ Mile of the Site

K60	Crop Production Services 53800 Polk St., Coachella, CA	RCRA NonGen / NLR	This facility was reported to handle potentially hazardous waste. Hazardous material releases have not been reported at this facility.
70	Burrtec Coachella Recycling Transfer 53600 Polk St., Coachella, CA	SWF/LF	This property was reported as being in use for waste and recycling services. Hazardous material releases have not been reported at this facility.

*Site identified as remaining in monitoring and remediation.

As noted on Table 2-12, potentially hazardous materials have been released at seven of the listed properties, six of which have been cleaned or not considered significant. The release at one of the properties, the Apple Market 1, has not been cleaned to the satisfaction of the regulating agency. This property, located approximately 600 feet west of the project site, currently contains groundwater-monitoring wells indicating the extent and nature of the gasoline-related contaminants, which have migrated approximately 300 feet to the south-southwest, along Highway 111, consistent with the gradient of the property and vicinity. Based on the data collected, migrating contaminants have not impacted soil and/or water within 250 feet of the channel improvement site, indicating the groundwater contamination is contained.

The remaining listed properties are located across or down gradient of the site. Hazardous materials released at these properties would be anticipated to migrate toward the south-southeast, or away from the site, consistent with property slope. Based on a review of the properties listed in the environmental databases searched, none are considered to have the potential to impact the soil and/or groundwater underlying the subject site.

Two properties are listed in the "Orphan Summary" of EDR's report. Such properties could not be geocoded by EDR because location information supplied by the regulatory agencies was insufficient to allow EDR to geocode the facility locations. Based on a review of the address provided for the orphan properties, neither is located within 1 mile of the site. Due to their distances and locations, the potentially hazardous materials spilled at these properties are not considered a potential threat to the soil and/or groundwater underlying the site.

Jacqueline Cochran Regional Airport

As noted in Section 2, the Jacqueline Cochran Regional Airport is located approximately one mile from the project area. The project site is located within the airport land use plan developed for the Jacqueline Cochran Regional Airport. Jacqueline Cochran Regional Airport is located at 56-850 Higgins Drive in the unincorporated community of Thermal. Jacqueline Cochran is a public airport, owned and operated by Riverside County. The airport has two runways and covers an area of approximately 1,850 acres. The airport is a locally important source of noise primarily associated with aircraft operations, where the closest runway is approximately one mile to the west. There is an average of 209 operations per day, 98% of which was general aviation operation. The CVSC planning area is located outside the airport's 60 and 65 dB CNEL boundaries.

2.10.6 Project Impacts

Approach to Analysis

The following discussion focuses on the potential to encounter hazardous substances in soil and groundwater during construction and the potential to discharge hazardous materials during construction, operation and maintenance of the Proposed Project, including the associated utility relocation projects. This

analysis addresses the project's potential to create a significant hazard to the public in regard to hazardous materials, substances, and waste; the potential to result in hazards relating to airports; the potential to impact an emergency response plan or evacuation plan; and the potential to expose persons or structure to hazards relating to wildfire. Applicable regulatory requirements were utilized to assess each potential impact.

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant. During construction of the subject channel improvements and associated project activities, temporary use of chemicals, oils, fuels, lubricants, paints, and solvents would occur. A wide variety of laws ensure the safe transportation, use, storage, and disposal of hazardous materials (see Section 2.10.3: Regulatory Framework). Daily transport of potential hazardous materials to and from construction areas and construction staging areas can result in the increase in the potential for accidents. However, limited amounts of these materials would be used for earthwork activities, construction of concrete channel lining and other construction activities. In the case of an accidental spill of materials, the provisions of law, required of every project, and the required best management practices associated with water quality management planning would assure that such an occurrence would be contained and remediated immediately. In the case of transport of materials to or from a construction area, the local Fire Department, Caltrans and the CHP regulate the transportation of hazardous materials and wastes, including container types and packaging requirements. These regulations also include licensing and training for hazardous waste haulers, chemical handlers, and truck operators.

There are no hazards or hazardous materials identified within the planning area for the channel improvement project. A buried 20-inch petroleum product pipeline passes under the channel and within the project area, damage to which could result in a significant hazardous materials release. The Proposed project has been designed to avoid impacts to this facility through project coordination with the owner/operator of this facility. Releases from the Coachella wastewater treatment plant are permitted and monitored by the CRWQCB and the channel improvement project will not affect the quality of wastewater discharged into the channel.

Over the operational life of the channel, maintenance activities are not expected to require the use of chemicals and cleansers for cleaning and/or maintenance of the facility. There is no planned use, storage and disposal of pesticides, herbicides and fertilizers for landscape maintenance or other purposes. It should be noted that the use, storage and disposal of potentially toxic cleaning solutions, pesticides, herbicides and fertilizers are regulated by federal, State and regional agencies, who implement the requirements of law for the use and transport of hazardous materials. Channel construction and maintenance contractors will additionally be regulated by CVWD, Riverside County Department of Environmental Health, and local Fire Departments in each jurisdiction. Impacts associated with the transport, use or disposal of hazardous materials will be less than significant.

Historic and Current Pesticide Use

Based on the periodic agricultural use of the properties located within the site's eastern portion, there is a potential that the near-surface soils within this area contain detectable pesticide concentrations. Due to the absence of orchards (relatively heavy users of pesticides) and vacant state since the early 1990s, the potential for elevated pesticide concentrations (greater than regulatory limits) is considered relatively low. The disposal of all hazardous materials involved with channel construction and its subsequent operation and maintenance are also regulated. All hazardous materials must be properly disposed of at a qualified landfill. Impacts would be less than significant.

In summary, given the limited and managed use of potentially toxic or hazardous materials in the construction and maintenance of the channel, and the programmatic regulation and oversight of their use, transport and disposal, the Proposed Project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

Utility Projects
Given the limited and managed use of potentially toxic or hazardous materials in the construction and maintenance of the proposed utility relocation projects, and the programmatic regulation and oversight of their use, transport and disposal, the utility relocation portion of Proposed Project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant. Evidence for aboveground or underground storage tanks, clarifiers, sumps, or other potentially hazardous material-containing structures was not encountered on any portion of the site during the Phase I site assessment or in documents obtained for the assessment. With the possible exception of pesticides and lead, potential releases of petroleum hydrocarbons and/or chemicals were not encountered during a reconnaissance of the site, or during a review of background materials for the site.

A buried 20-inch petroleum product pipeline passes under the channel and within the project area, damage to which could result in a significant hazardous materials release. The Proposed Project has been designed to avoid impacts to this facility and CVWD is coordinating with the owner/operator to firmly establish the location and depth of this line. Staking and controlled excavation and grading in proximity of this line will ensure that it is not damaged during construction of channel improvements.

Releases from the Coachella wastewater treatment plant are permitted and monitored by the CRWQCB and the channel improvement project will not affect the quality of wastewater discharged into the channel.

As described above, the un-remediated sites near or within the Proposed Project area will result in less than significant impacts to the channel, either during construction or over its lifetime.

Impacts Associated with Project Construction and Operation
With proper design and construction management, the construction and operation of the subject channel segment would not result in a significant hazard to the public from foreseeable upset. Cleaners, solvents, fertilizers and pesticides may be used on-site for routine maintenance and landscaping. Their use will be in small amounts, regulated by the Department of Environmental Health and the Fire Department of the jurisdiction in which the work occurs. These materials, if used, must be properly stored, handled and treated according to the regulations issued by the State of California (See Chapter 30, Title 22 of the California Code of Regulations). None of those cleaners, solvents, fertilizers and pesticides will be used in sufficient quantities to pose a threat to humans or cause a foreseeable chemical release into the environment.

The construction phase would involve heavy equipment, which uses limited amounts of oil and fuels and other potential flammable or otherwise hazardous substances. During construction, equipment would require refueling, lubricating and minor maintenance that could lead to fuel and oil spills. The contractor will be required to identify and properly prepare staging areas for storing materials. The use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, State, and local laws, including California Occupational Health and Safety Administration (CalOSHA) requirements. The Proposed Project would not result in a significant risk of explosion or accidental release of hazardous substances.

Aerially Deposited Lead (ADL)
Due to the relatively light use of Airport Boulevard and Highway 111, elevated lead concentrations are not anticipated in the near-surface soils along these roadways. Terra Nova Planning & Research, Inc. recently verified this by collecting representative surface soil samples and reported relatively low lead concentrations (not considered potentially hazardous to health based on current screening levels). Based on a review of current State requirements, the soil adjacent to those roadways could be handled as a non-hazardous waste and reused as construction fill. All of the reported lead concentrations were well below the California Human Health Screening Level for residential properties (80 mg/kg) and commercial properties (320 mg/kg).

Therefore, the soils adjoining the onsite roadways are not considered a potential threat to human health. Soils along the subject channel segment are not considered potentially hazardous based on current screening levels. Lead is only an issue if there is ground disturbance of soils that contain lead levels above established *Screening Levels*. As described above, the lead levels adjacent to existing roadways, even if disturbed as part of the construction of the subject channel improvements, would not be above *Screening Levels*. For this reason, impacts associated with ADL will be less than significant.

Utility Projects
It is not anticipated that the proposed utility relocations would result in a significant hazard to the public from foreseeable upset. The construction phase would involve heavy equipment, which uses limited amounts of oil and fuels and other potential flammable or otherwise hazardous substances. During construction, equipment would require refueling, lubricating and minor maintenance that could lead to fuel and oil spills. The contractor will be required to identify and properly prepare staging areas for storing materials. The use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, State, and local laws, including California Occupational Health and Safety Administration (CalOSHA) requirements. The relocation of the 8-inch gas line will require temporary evacuation of gas in the line in an approved manner. SCG will be required to comply with all applicable state and federal regulations for the safe replacement and relocation of active gas lines.

With proper protocols and management, the utility relocation portion of Proposed Project would not result in a significant risk of explosion or accidental release of hazardous substances.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Less than Significant. The Coachella Valley Unified School District provides public K-12 school services in the project area. The nearest school to the project site is John Kelly Elementary School, approximately 0.3 miles to the west of the project planning area. The construction, operation and maintenance of the subject channel segment will have no impact on schools from a hazardous materials perspective. The project will not result in the transport of these materials, as the purpose of the path is for recreational and personal use. Channel construction will involve the use of limited amounts of solvents, lubricants and ad fuels the use, storage and disposal of which will not come within 0.25 miles of this school.

Regardless of distance from the nearest school, neither the time needed for construction nor the amount or type of materials to be used would result in a significant impact. In addition, regulations controlling the use, transport and disposal of construction-related materials, included standard requirements imposed by the Riverside County Department of Environmental Health, the Highway Patrol and local police and fire departments such as container types, securing of materials, etc., would ensure that impacts would remain less than significant.

Utility Projects
The nearest school to the project site is John Kelly Elementary School, approximately 0.3 miles to the west of the project planning area. The construction, operation and maintenance of the relocated utilities will have no impact on schools from a hazardous materials perspective. Regulations controlling the use, transport and disposal of construction-related materials, included standard requirements imposed by the Riverside County Department of Environmental Health, the Highway Patrol and local police and fire departments such as container types, securing of materials, etc., would ensure that impacts would remain less than significant. Mitigation measures set forth below will further ensure that impacts to school and other sensitive receptors are less than significant.

d) Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to public to the public or the environment?

No Impact. No location within the project area is included on any lists of hazardous materials sites compiled pursuant to Government Code Section 65962.5. For this reason, this criterion is not applicable to the proposed channel improvement project or utility relocations and no impact will occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

No Impact (e and f). The Proposed Project will consist of channel grading and lining, and the limited relocation of agricultural irrigation and utility lines. No habitable structures are proposed as part of the project. The Jacqueline Cochran Regional Airport is located approximately one mile west of the CVSC project planning area, and its land use management plan encompasses the entire project planning area. The airport is a county-owned facility built during World War II and today is comprised of an area of 1,850± acres and provides two asphalt-paved runways that are 8,500 and 4,995 feet in length. The proposed channel improvement project will have no impact on airport operations, and as a non-structural project located at a considerable distance from any of the airports, will have no impact on the airports' land use plans.

There are no private airstrips located in the project vicinity, the closest private airstrip being the Bermuda Dunes Airport located 9.75± miles to the northwest, therefore no impact will occur.

Utility Projects
There are no private airstrips located in the project vicinity, the closest private airstrip being the Bermuda Dunes Airport located 9.75± miles to the northwest, therefore no impact will occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

No Impact. The County of Riverside and City of Coachella have adopted emergency response plans and emergency operations plans that involve their respective fire departments, County Sheriff and other emergency response staff. The construction of the planned channel improvements may create some temporary road detours, although these are expected to be limited in scope and duration. These will not conflict or physically interfere with established emergency response or evacuation plans.

Utility Projects
The relocation of utilities may create some temporary road detours, although these are expected to be limited in scope and duration. These will not conflict or physically interfere with established emergency response or evacuation plans. No impact will occur.

h) ***Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.***

No Impact. The project planning area does not occur in a wildfire hazard zone as defined in either the Coachella or County General Plans. The channel improvement project, including all utility relocations, will not increase the risk of wildland fires during construction or operational phases. Given that the entire project area is located primarily in urban and developed areas, and is not comprised of combustible materials, there will be no impacts associated with wildland fires or urban wildfires.

2.10.7 Mitigation Measures

The programmatic safety measures discussed in the analysis above are meant to preclude the spillage or discharge of hazardous or toxic materials into the air, ground or water. These include the following:

HAZ-1 The construction contractor shall maintain equipment off-site to preclude spillage onto the ground of fuel or other petroleum products.

HAZ-2 The construction contractor shall have an approved hazardous materials management plan prior to project staging (Soil and Groundwater Management Plan) that specifies the method for handling and disposal of both chemical products and hazardous materials during construction.

The plan shall also address any contaminated soils or groundwater encountered during construction. Contract specifications shall mandate full compliance with all applicable local, State, and federal regulations related to identifying, transporting, and disposing of hazardous materials. The contractor shall provide CVWD with copies of hazardous waste manifests documenting that disposal of all hazardous materials has been performed in accordance with applicable law. Elements of the plan shall include:

A. Measures to address hazardous materials and other worker health and safety issues during construction, including the specific level of protection required for construction workers.
B. Provisions for excavation of soil, stockpiling, dust, and odor control measures.
C. Measures to prevent off-site migration of contaminated soil and groundwater.
D. Location and final disposition of all soil and groundwater removed from the site.
E. All other necessary procedures to ensure that excavated materials are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations.

HAZ-3 If the pad-mounted or pole-mounted transformers situated within the project area must be removed during construction activities, they will be tested for PCBs prior to their removal and disposal. If PCBs are identified, the transformers and associated fluids shall be transported offsite and disposed of in accordance with the standards and requirements of the Riverside County Department of Environmental Health, including draining of materials into approved containers, and secured transport to approved disposal facilities. Imperial Irrigaiton District or its contractors shall be the responsible party for this mitigation.

HAZ-4 The project contractor shall clearly identify and stake the location of the petroleum pipeline that crosses beneath the channel and ensure controlled excavation and grading in proximity of this line to avoid damaged during construction of channel improvements.

2.10.8 Significance After Mitigation

No additional mitigation measures are required beyond the programmatic measures discussed above. With implementation of these programmatic measures, the construction and operation of subject channel segment and associated utility relocation projects will have less than significant impacts associated with exposure to or release of hazards and hazardous materials.

2.10.9 Cumulative Impacts

As analyzed above, the project would have less than significant impacts associated with hazards and hazardous materials during both construction and operations. The addition of the Proposed Project to the urban environment, when added to other future development in the Coachella Valley, will marginally increase the potential for impacts associated with hazards and hazardous materials. However, the Proposed Project and all future other projects are subject to stringent regulations imposed by local, regional, State and federal law. The construction and operation of the Proposed Project will not significantly impact this progressive increase, because it will not use or disperse significant amounts of hazardous materials. Any project occurring in the vicinity of the subject channel would be required to construct and operate facilities consistent with these same local, regional or State requirements. Therefore, the Project will not significantly contribute to cumulative impacts associated with hazardous materials.

2.11 Hydrology and Water Quality

2.11.1 Introduction

This section of the EIR describes existing conditions with regard to hydrology and water quality within the CVSC Improvement Project area and analyzes the potential impacts of the Proposed Project to the regional and/or local hydrological patterns and water quality. A wide range of data and information, ranging from research and hydraulic design of the channel improvements conducted for the subject site, to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects.[91] [92] The following discussion reviews the potential effects of the Project on the surrounding existing and planned hydrological setting, and recommends measures to ensure compatibility and protection of water quality, where necessary.

2.11.2 Thresholds of Significance

CEQA Guidelines

The following thresholds or criteria were used to determine the significance of the Proposed Project. These thresholds and criteria have been drawn from a variety of sources, including Appendix G: Environmental Checklist Form of the California Environmental Quality Act (CEQA) Guidelines. The Proposed Project would have a significant effect on hydrological setting and water quality if they:

a) Violate any water quality standards or wastewater discharge requirements.

[91] "Channel Improvement Project-Hydraulic Basis of Design, 50% Plan Set for the Proposed Coachella Valley Stormwater Channel Improvement Project from Avenue 54 to Thermal Drop Structure", prepared by Northwest Hydraulic Consultants August 2017.

[92] "Eastern Coachella Valley Stormwater Master Drainage Plan -0 Coachella Valley Stormwater Channel Alternatives Study", prepared by Tetra Tech, Inc. 2014

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or offsite.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of surface runoff in a manner, which would result in flooding on- or off-site.

e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

f) Otherwise substantially degrade water quality.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazards Boundary or Flood Insurance Road Map or other flood hazard delineation map.

h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flow.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

j) Inundation by seiche, tsunami, or mud flow.

2.11.3 Regulatory Framework

The Proposed Project may have a nexus with a variety of regulatory programs, including those managed by federal and state agencies, CVWD, as well as the City of Coachella and Riverside County. The project's regulatory environment associated with flooding, hydrology, and water quality is briefly described below.

Federal

Federal Emergency Management Agency (FEMA)

The FEMA was formed by Presidential Reorganization Plan No. 3 of 1978 and implemented by two Executive Orders on April 1, 1979. The agency's primary purpose is to coordinate the response to a disaster that has occurred in the United States and that overwhelms the resources of local and state authorities.[93] The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate FEMA to evaluate flood hazards. FEMA provides Flood Insurance Rate Maps (FIRMs) for local and regional planners to promote sound land use and floodplain development, identifying potential flood areas based on the current conditions. To delineate a FIRM, FEMA conducts engineering studies referred to as Flood Insurance Studies (FISs). The most recent FIS and FIRM were completed and published for the County of Riverside on August 18, 2014. Using information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas (SFHAs) on FIRMs.

CVWD, Riverside County and the City of Coachella are participants in the National Flood Insurance Program (NFIP), which is administered through FEMA. As a participant in the program, residents within these jurisdictions are eligible to purchase flood insurance. FEMA then requires each participating jurisdiction to adopt a floodplain management ordinance to ensure that any new construction and/or

[93] Federal Emergency Management Agency (FEMA).

substantial improvement within a mapped floodplain are done in a manner that reduces damage to the public and property, and discourage any new development within floodways. Riverside County Ordinance No. 458 (discussed below under Local Regulations) sets forth the process by which Riverside County implements the NFIP.

The Proposed Project involves improvements to the segment of the CVSC between Avenue 54 and the Thermal Drop Structure, a regional flood control facility that is the easterly extension of the Whitewater River Stormwater Channel. The CVSC is intended to provide at least 100-year flood protection to surrounding lands. Post-Hurricane Katrina flood control facility assessments indicated that the subject segment of the CVSC will not contain the 100-year flood, which has prompted CVWD to design the channel improvements that are the subject of this EIR.

US Army Corps of Engineers

Under Section 404 of the Clean Water Act (CWA), proposed discharges of dredged or fill material into waters of the United States require USACE authorization. Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands (with the exception of isolated wetlands). The USACE identifies wetlands using a multi-parameter approach, which requires positive wetland indicators in three distinct environmental categories: hydrology, soils, and vegetation.

According to the Corps of Engineers Federal Wetlands Delineation Manual, except in certain situations, all three parameters must be satisfied for an area to be considered a jurisdictional wetland. In certain cases, the Corps may assert jurisdiction over non wetland areas, particularly active flood plains lacking wetland vegetation or hydric soils. The Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008) is also used when conducting jurisdictional wetland determinations in areas identified within the boundaries of the arid west.

The Coachella Valley falls within the Arid West Region. A CWA Section 404 permit application has been filed with the US Army Corps of Engineers for project-related dredge and fill activities that will take place within “waters of the US”. Please see the discussion below and Section 3.5: Biological Resources of this EIR for a breakdown of temporary and permanent impacts to waters of the United States and of the State.

When applicable, the Construction General Permit requires that the landowner and/or contractor file permit registration documents prior to commencing construction and then pay a fee annually through the duration of construction. These documents may include a notice of intent, risk assessment, site map, stormwater pollution prevention plan (SWPPP), and signed certification statement. The SWPPP must include measures to ensure that: (1) all pollutants and their sources are controlled; (2) non-stormwater discharges are identified and eliminated, controlled, or treated; (3) site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges; and (4) BMPs installed to reduce or eliminate pollutants after construction are completed and maintained. The Construction General Permit specifies minimum BMP requirements for stormwater control based on the risk level of the site. The Permit also specifies minimum qualifications for a qualified SWPPP developer and qualified SWPPP practitioner. A SWPPP will be required for the Proposed Project.

Clean Water Act (CWA)

The federal Clean Water Act, enacted by Congress in 1972, as amended, is the primary federal law regulating water quality in the United States and forms the basis for several state and local laws and regulations throughout the country. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States. The CWA gives the U.S. Environmental Protection Agency (USEPA) the authority to implement federal pollution control programs, such as setting water quality standards for contaminants in surface water, establishing wastewater and effluent discharge limits for various industry contaminants in surface water, establishing wastewater and effluent discharge limits for

various industry categories, and imposing requirements for controlling nonpoint-source pollution. At the federal level, the Clean Water Act is administered by the USEPA and U.S. Army Corps of Engineers (USACE). At the state and regional levels in California, the act is administered and enforced by the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB). The Coachella Valley is within the Colorado River Basin RWQCB (Region 7).

Under Section 401 of the Clean Water Act, the RWQCB has regulatory authority over actions in waters of the United States and/or the State of California through the issuance of water quality certifications, which are issued in conjunction with any federal permit (e.g., permits issued by the USACE under Section 404 of the Clean Water Act, described below). Section 401 of the Clean Water Act provides the SWRCB and the RWQCBs with the regulatory authority to waive, certify, or deny any proposed activity that could result in a discharge to surface waters of the State. To waive or certify an activity, these agencies must find that the proposed discharge would comply with State water quality standards, including those protecting beneficial uses and water quality. If these agencies deny the proposed activity, the federal permit cannot be issued. This water quality certification is generally required for projects involving the discharge of dredge or fill material to wetlands or other bodies. Jurisdictional streambeds and associated riparian habitat are also regulated by the California Department of Fish and Wildlife (CDFW) under Section 1602 of the State Fish and Game Code (see below).

The federal CWA prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. The SWRCB is the water discharge permitting authority in California, and adopted an NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009, as amended by Order No. 2010-0014). The Order applies to construction sites that include one or more acre of soil disturbance. Construction activities include clearing, grading, grubbing, excavation, stockpiling, and reconstruction of existing facilities involving removal or replacement. When applicable, the Construction General Permit requires that the landowner and/or contractor file permit registration documents prior to commencing construction and then pay a fee annually through the duration of construction. These documents include a notice of intent, risk assessment, site map, stormwater pollution prevention plan (SWPPP), and signed certification statement. The SWPPP must include measures to ensure that: all pollutants and their sources are controlled; non-stormwater discharges are identified and eliminated, controlled, or treated; site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges; and BMPs installed to reduce or eliminate pollutants after construction are completed and maintained. The Construction General Permit specifies minimum BMP requirements for stormwater control based on the risk level of the site. The Permit also specifies minimum qualifications for a qualified SWPPP developer and qualified SWPPP practitioner.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permit triggering 401 Certification is a CWA Section 404 permit, issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project. A CWA 401 certification application has been prepared and is being processed by the regional Water Quality Control Board.

CWA Section 303(D) and Total Maximum Daily Loads (TMDLs)

The CWA contains two strategies for managing water quality. One is a technology-based approach that includes requirements to maintain a minimum level of pollutant management using the best available technology. The other is a water quality-based approach that relies on evaluating the condition of surface waters and setting limitations on the amount of pollution that the water resource can be exposed to without adversely affecting the beneficial uses of those waters. Section 303(d) of the CWA bridges these two strategies and requires that States make a list of waters that are not attaining standards after the technology-based limits are put into place.

For waters on this list, the States are required to develop total maximum daily loads or TMDLs. Total Maximum Daily Load (TMDL) refers to the amount of a specific pollutant a river, stream, or lake can assimilate and still meet federal water quality standards as provided in the CWA and addressed in the CWA 401 permit application. TMDL accounts for all sources of pollution, including point sources, non-point sources, and natural background sources. Section 303(d) requires that regulatory agencies determine TMDLs for all water bodies that do not meet water quality standards.

The Section 303(d) list of impaired water bodies provides a prioritization and schedule for development of TMDLS for the state. The SWRCB, in compliance with the Section 303(d) of the CWA (33 U.S. Code [USC] Section 1313[d], prepared, and USEPA approved, a 2010 list of impaired water bodies in California. The list includes a priority schedule for the development of TMDLs for each contaminant or "stressor" impacting the water body.

The Coachella Valley Stormwater Channel is listed as being impaired[94] and is on the TMDL required list for DDT (Dichlorodiphenyltrichloroethane), Dieldrin, Nitrogen, ammonia (Total Ammonia), PCBs (Polychlorinated biphenyls), Toxaphene, Toxicity and Indicator Bacteria under Section 303(d) of the Clean Water Act (CWA).

National Pollutant Discharge Elimination System (NPDES) Regulations

In 1987, amendments to the Clean Water Act added Section 402, which established a framework to protect water quality by regulating industrial, municipal, and construction-related sources of pollutant discharges to waters. In California, the NPDES program is administered by the SWRCB through the RWQCBs and requires municipalities to obtain permits that outline programs and activities to control wastewater and stormwater pollution.

The NPDES program provides two levels of control for the protection of water quality: technology-based limits and water quality-based limits. Technology-based limits are based on the ability of dischargers to treat the water, while water quality-based limits are required if technology-based limits are not sufficient to protect the water body. The water quality-based effluent limitations required to meet water quality criteria in the receiving water are based on the National Toxics Rule, the California Toxics Rule, and the Basin Plan (see below under Porter-Cologne Water Quality Control Act).

State

California Regional Water Quality Control Board

Responsibility for the protection of water quality in California rests with the SWRCB and the nine RWQCBs. The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and State water quality statutes and regulations. The RWQCBs develop and implement Water Quality Control Plans (WQCP) that considers regional beneficial uses, water quality characteristics, and water quality problems. In cases where a WQCP does not contain a

[94] Water Management Plan, prepared by the Coachella Valley Water District. 2010.

standard for a particular pollutant, other criteria are used to establish a standard. Other criteria may be applied from the SWRCB documents (e.g., the Inland Surface Waters Plan and the Pollutant Policy Document, or the California Toxics Rule) or from EPA water quality criteria developed under Section 304(a).

All projects resulting in discharges, whether to land or water, are subject to Section 13263 of the California Water Code and are required to obtain approval of Waste Discharge Requirements (WDRs) by the RWQCB. Land and groundwater-related WDRs (i.e., non-NPDES WDRs) regulate discharges of privately or publicly treated domestic wastewater and processed and wash-down wastewater.

CVWD and Riverside County NPDES Permit

The federal CWA prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. The SWRCB is the water discharge permitting authority in California, and adopted an NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009, as amended by Order No. 2010-0014). The Order applies to construction sites that include one or more acre of soil disturbance. Construction activities include clearing, grading, grubbing, excavation, stockpiling, and reconstruction of existing facilities involving removal or replacement. CVWD and Riverside County have been issued NPDES Permit No. CAS617002 for stormwater runoff by the Colorado River Region RWQCB. Riverside County and the Riverside County Flood Control and Water Conservation District (RCFCWCD) are principal permittees, and the CVWD and 10 cities are listed as co-permittees.

Porter-Cologne Water Quality Control Act (PCWQCA)

The PCWQCA establishes the SWRCB and each RWQCB as the principal State agencies for coordinating and controlling water quality in California. Specifically, the Act authorized the SWRCB to adopt, review, and revise policies for all waters of the State (including both surface and groundwater) and directs the RWQCBs to develop regional Basin Plans. Section 13170 of the California Water Code also authorizes the SWRCB to adopt water quality control plans on its own initiative.

In the project area, the Colorado River Basin Regional Water Quality Control Board (CRBRWQC) has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction. Water quality objectives for the Whitewater River watershed and its tributaries are specified in the Water Quality Control Plan (WQMP) for the Colorado River Basin adopted in June 2006 by the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB). The Plan divides the Basin area into 6 hydrologic planning areas, among them the Coachella Valley Basin in which the Whitewater River Watershed is located. The principal elements of the Basin Plan are the statement of beneficial water uses protected under the Plan, water quality objectives necessary to protect the designated beneficial water uses, and the strategies for achieving the water quality objectives. Because the Project site is located within the CRBRWQCB jurisdiction, all discharges to surface waters are subject to the Colorado River Basin Plan.

California Fish and Game Code 1602

California Fish and Game Code 1602 require that the California Department of Fish and Wildlife (CDFW) be notified prior to commencing any activity that may substantially divert or obstruct the natural flow of any river, stream or lake; substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or deposit debris, waste or other materials that could pass into any river, stream or lake.

For the Proposed Project, a 1602 Streambed Alteration Agreement application has been filed with and is being processed by the CDFW. The project would affect waters of the US and State and include a temporary diversion of the flow of water within the CVSC. The associated permit application describes temporary and permanent impacts to the waters of the State and channel flow. The permit will ensure that impacts to channel resources are avoided and/or minimized.

Municipal Separate Storm Sewer Systems (MS4)

The Municipal Storm Water Program regulates storm water discharges from municipal separate storm sewer systems (MS4s) throughout the state. U.S. EPA defines an MS4 as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned or operated by a State (40 CFR 122.26(b)(8)).

The project will be subject to the Federal Water Pollution Control Act (Clean Water Act) section 402(p), which requires the issuance of NPDES permits for five categories of storm water dischargers, including MS4s. The U.S. EPA defines an MS4 as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water." The SWRCB has identified CVWD as an owner/operator of an MS4 pursuant to federal regulations. CVWD's MS4 permit covers all District rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted. CVWD's MS4 Permit contains three basic requirements:

1. CVWD must comply with the requirements of the Construction General Permit (CGP, see below);
2. CVWD is a co-permittee that depends on the local Cities and Riverside County with land use authorities within its jurisdictional boundary to effectively control storm water and non-storm water discharges, and
3. CVWD's storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs) to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

Regional and Local

Regional Water Quality Control Board (RWQCB)

The RWQCB issues permits for activities that could cause impacts to surface waters and groundwater in the vicinity of the project site, including construction activities. The NPDES stormwater permitting program, under Section 402(p) of the federal CWA, is administered by the RWQCB on behalf of the EPA. The Proposed Project site falls under the jurisdiction of the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB), Region 7. Permits issued to control pollution (i.e., waste discharge requirements and NPDES permits) must implement SWRQB Basin Plan requirements (i.e., water quality standards), taking into consideration beneficial uses to be protected.

Riverside County Ordinance No. 458

Riverside County adopted Ordinance No. 458 in 1979 pursuant to the requirements of the National Flood Insurance Program, Title 42 United States Code 4001, et. seq., as amended, including all regulations adopted pursuant thereto. The purpose of the ordinance is to protect the public health, safety, and welfare and minimize public and private costs caused by flooding by regulating development within flood hazard areas. Flood heights may be increased by man-made or natural causes. Ordinance No. 458 specifically regulates development in Special Flood Hazard Areas identified on maps prepared by FEMA, the State of California, or the County that are based on the 1% potential for flooding, also referred to as the 100-year flood. The ordinance is codified in the Riverside County Code of Ordinances as Title 15, Chapter 15.80 Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program.

CVWD Ordinance No. 1234

As noted above, CVWD is the designated flood control agency within its service area. CVWD Ordinance No. 1234 provides conditions of approval for development in flood hazard areas within the CVWD stormwater service area. Ordinance No. 1234 provides design standards to minimize flood damage, and indicates that any flood protection facilities not designed and constructed to these standards will not normally be owned, operated or maintained by CVWD. CVWD has adopted the Development Design Manual (2013) that sets forth the standards that CVWD has set for stormwater facilities.

2.11.4 Environmental Setting

Climatic conditions in the Coachella Valley are characterized as "subtropical desert". Mean annual rainfall is very low on the desert floor and into the foothills, ranging from 2 to 4 inches per year and averaging about 5 to 6 inches along the foothills. Generally, temperatures decrease and precipitation increases with increasing elevation. In some years no measurable rainfall has been reported on portions of the valley floor. Most of the valley's rainfall occurs during the cooler months of November through March, but occasional high-intensity thunderstorms and tropical storms occur in late summer and early fall. Although the ground may be generally dry at the beginning of a storm, sufficient amounts and intensities of rainfall can saturate the surface, substantially reducing percolation and increasing runoff.

Floods that impact the project planning area can be attributed to three different types of storm events: general winter storms, combining high-intensity rainfall and rapid melting of the mountain snowpack; tropical storms out of the southern Pacific Ocean; and summer thunderstorms. Summer storms pose a greater threat of localized flooding than winter storms because of their high intensity and short duration of rainfall. Monsoons, and warm winter storms with snowmelt, can generate significant runoff over a much larger area.

Major historic storm events are used to gauge the potential for future flooding. Benchmark storms used by the U.S. Army Corps of Engineers (USACE) to calculate the most intense credible storm include the storm of September 24, 1939. It was centered over Indio and consisted of a thunderstorm that preceded a major storm off the west coast of Mexico. This intense storm generated 6.45 inches of rain in a period of 6 hours. Tropical storm Kathleen is another example of the storm runoff potential in the area. During September 9–11, 1976, very heavy general rainfall was generated over a three-county area, with Palm Desert receiving 6.81 inches of rain. In the past few years, highly localized late summer thunderstorms have generated rainfall intensities of almost three inches per hour, the equivalent of 200-year and 500-year storm events. The surrounding hills and mountains received as much as 14 inches, with rainfalls generally increasing with elevation.

Local and Regional Flood Control

The generation and management of stormwater runoff are typically divided into two separate categories, local and regional drainage, which are ultimately interrelated. Local drainage is either defined by the limited size of the drainage or the volume generated. Local facilities capture and convey local runoff to regional drainage facilities including the Whitewater River and the Coachella Valley Stormwater Channel.

Regional Flood Control

The CVWD is responsible for the management of regional drainage within most of the Coachella Valley, including the project. The District is empowered with broad management functions, including development review and conditioning, flood control planning, construction, operation and maintenance of regional drainage improvements, as well as watershed and watercourse protection related to those facilities. To carry out its mandate, the District also has powers of taxation, bonded indebtedness, land and water rights acquisition, and cooperative partnerships with local, State, and Federal agencies. An elected Board acts as the official decision-making body of CVWD.

FEMA and the Federal Flood Insurance Rate Maps

Many of the areas of the United States subject to flooding in 100-year storms have been mapped by the Federal Emergency Management Agency (FEMA). The resulting documents are the FEMA Flood Insurance Rate Maps (FIRMs), which serve as the basis for determining the need for and availability of Federal flood insurance. The FEMA maps for the project vicinity designate designated most lands as Zone X[95], which is outside the 100-Year flood zone. Since FEMA's last mapping of this area, some of these lands have recently been determined to be within the 100-year flood plain with possible inundation depths of up to 3 feet, which has prompted the need for the subject channel improvements. FEMA mapping and the consequences of project construction are discussed in detail in Section 3.10 of this EIR.

CVSC in the Project Area

In the project area, the CVSC is an excavated unlined channel, which is designated by FEMA as being in a Zone A flood zone. Just upstream of the project and Avenue 54, channel side slopes have been lined to protect against erosion. There are existing and planned drop structures within the subject drainage that accommodate changes in channel bottom elevations, as well as agricultural drains and other inlets, four bridges and abutments, and other structures within and adjacent to the drainage that affect channel hydraulics. In the subject channel reach, which drains an area of approximately 1,500 square miles, the modeled 100-year storm volume is 39,000 cfs and the Standard Project Flood volume is 82,000 cfs.

2.11.5 Existing Conditions

The following discussion describes the existing regional, local and planning area flooding and hydrological conditions that may affect the planning area and proposed channel improvements.

Geographic and Climatic Conditions

The surrounding mountains isolate the Valley from moist and cool maritime air masses from the west, creating a dry subtropical desert climate. Summer daytime temperatures can occasionally exceed 125°F and winter temperatures occasionally fall below freezing. The Coachella Valley is part of the West Basin of the Colorado River Watershed and drains the Salton Trough to its terminal lake, the Salton Sea, which straddles the Riverside and Imperial County lines at 228± feet below sea level. Mean annual rainfall on the Coachella Valley floor is between 2 and 6 inches[96], and while some years record no measurable rainfall, other years may be subjected to flash flood and other substantial rain events. Historic and prehistoric flooding has played a key role in shaping the valley's current hydrological setting.

Regional Surface Water Hydrology

The project planning area is located at the southwesterly boundary of the Colorado River Hydrologic Region (HR) in the Whitewater River Hydrologic Unit (HU), and falls under the jurisdiction of the Colorado River RWQCB (Region 7).[97] Within Whitewater River Hydrologic Unit, the Project site lies in the Whitewater River watershed. Much of the watershed consists of sparsely populated mountains, desert, and agricultural lands. Urbanized areas are principally located on the Coachella Valley floor between Banning and Indio along Interstate 10, and from Palm Springs to Coachella along State Highway 111.[98]

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95 Flood Insurance Rate Map Panel 2270, Map Number 06065C2270G. Effective August 28, 2008.

96 "Mean Annual Isohyets based on combined data of 1879-79 season to 1953-54 (from 1961 U.S. A.C.E. Report) and 1935-60 (From 1973-74 Riverside CO F.C.D. Report)"

97 Colorado River Hydrologic Region; http://www.water.ca.gov/pubs/groundwater/bulletin_118/california%27s_groundwater__bulletin_118_-_update_2003_/bulletin118_10-cr.pdf; Accessed October 2017.

98 Whitewater River Watershed Municipal Stormwater Program (Stormwater Management Plan 2001 - 2006), prepared by Camp Dresser and McKee, Inc.

The Whitewater River is the principal drainage course through the Coachella Valley.[99] It is typically dry, but flows southeasterly when it carries water. The Whitewater River has a total drainage area of approximately 850 square miles and drains areas as far away as the summit of San Gorgonio Pass and the steep southern and eastern slopes of Mount San Gorgonio.[100]

The Coachella Valley drainage area is approximately 65% mountainous and 35% typical desert valley, with alluvial fan topography buffering the valley floor from the steep mountain slopes.[101] Although the mean annual precipitation on the floor of the Coachella Valley is low (4 inches), high and intense precipitation in the steep surrounding mountains poses flood hazards. Floods that affect the Coachella Valley are typically of short duration with high peak volumes and carry large amounts of debris. In the Whitewater River basin, a major flood occurs on average every ten years. The largest flood on record was in March 1938, with peak discharge estimated at 42,000 cfs, almost twice the peak of the second largest flood, which reached 24,000 cfs in 1965.

Benchmark storms and historic data are used by the US Army Corps of Engineers and other flood control agencies to gauge the potential for future flooding. In the Coachella Valley, these include two distinct storm events that occurred in 1939 and 1979. The 1939 storm event occurred on September 24, was centered over Indio and originated off the west coast of Mexico. This storm generated 6.45 inches of rain in a 6-hour period. The 1979 storm event was due to the Tropical Storm Kathleen, which impacted the area from September 9 through 11 and generated 6.81 inches of rain in the low-lying areas of the central valley, and as much as 14 inches in the surrounding mountains. The projected 100-year 24-hour storm event in the planning area is 5.42 inches (NOAA Atlas 14).[102]

In the upper Whitewater River Stormwater Channel (WRSC) 100-year storm flows are calculated to be approximately 47,000 cubic feet per second (cfs) in the vicinity of the confluence Tahquitz Creek and the WRSC, to about 43,000 cfs at Point Happy in La Quinta. The Standard Project Flood (SPF) flow at these locations ranges from 85,000 cfs on the west to 83,000 cfs at Point Happy. East of Point Happy, the CVSC is projected to carry a 100-year flow of approximately 43,000 cfs and an SPF flow of about 82,000 in the eastern portion of the CVSC drainage area.[103] In the subject reach of the CVSC, the 100-year storm is calculated to 39,000 cfs with an SPF of 82,000 cfs.[104]

Throughout its length the Whitewater River Stormwater Channel and CVSC have been excavated below adjacent ground and is bounded by earthen embankments or levees. Most of the channel slopes are lined with concrete slope protection but the channel bed is only concrete-lined at drop structures and low water crossings. Golf courses occupy about 7 miles of the bottom of the channel; the remaining bed is sandy, with varying amounts of natural vegetation.

Whitewater River Stormwater Channel/Coachella Valley Stormwater Channel (WWRSC/CVSC)

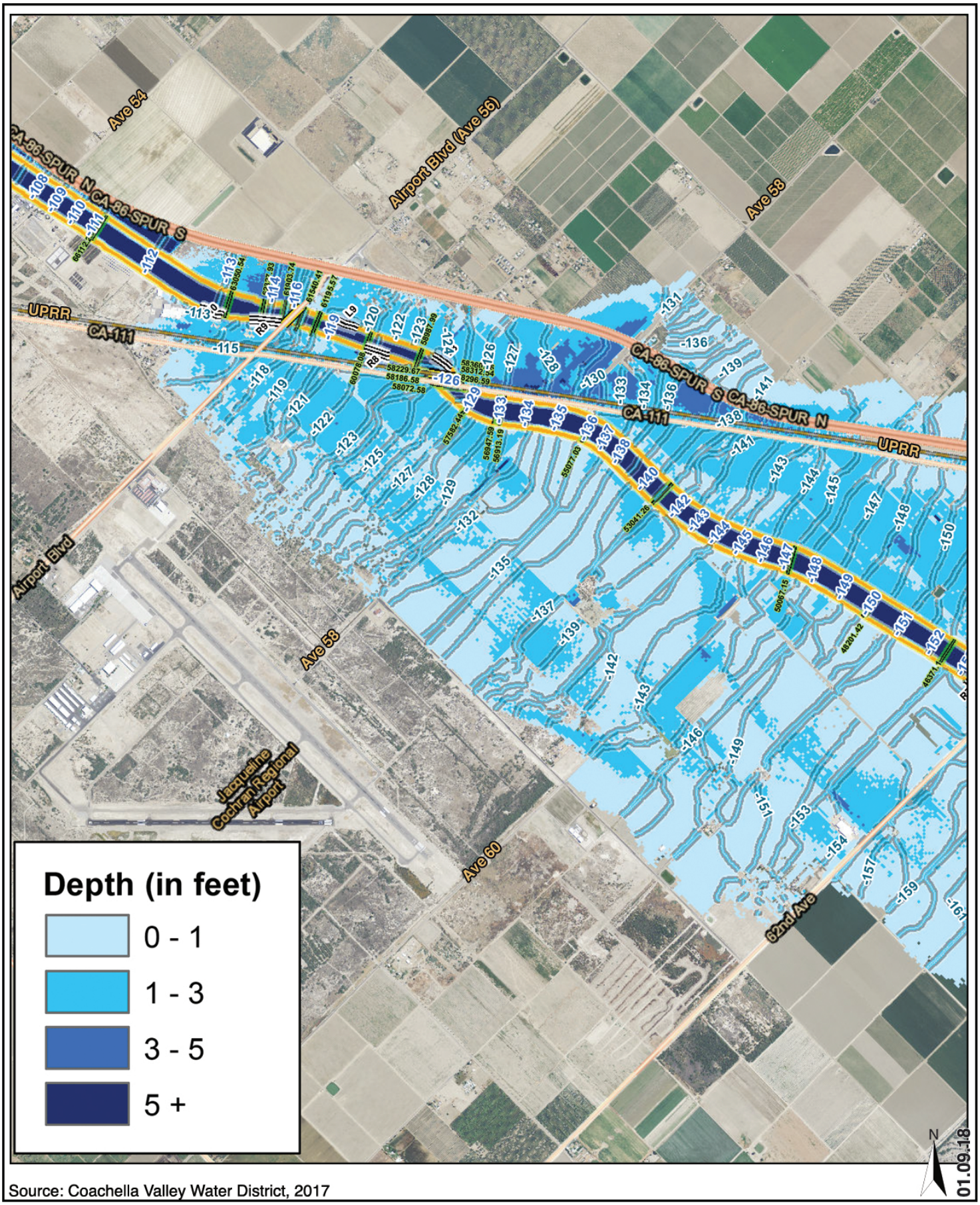
The CVSC is the easterly man-made extension of the WRSC. Its headwaters are in the San Bernardino Mountains and the terminus is the Salton Sea, a terminal lake with no outlet located in the Colorado Desert. The WWRSC/CVSC is located within the Salton Sea drainage basin and it is the dominant stormwater

99 City of Coachella General Plan EIR (2014).
100 Coachella Valley Water Management Plan Update Final Report (2012).
101 Ibid.
102 NOAA's National Weather Service Hydrometeorological Design Studies Center; accessed 07.08.2016.
103 Whitewater River/Coachella Valley Stormwater Channel Hydraulic Analysis (Ramon Road to Jefferson Street Bridges), prepared by Northwest Hydraulic Consultants and CVWD. September 2014.
104 "Channel Improvement Project-Hydraulic Basis of Design, 50% Plan Set for the Proposed Coachella Valley Stormwater Channel Improvement Project from Avenue 54 to Thermal Drop Structure", prepared by Northwest Hydraulic Consultants August 2017.

drainage facility in the Coachella Valley. The CVSC extends from Washington Street in La Quinta and downstream to the Salton Sea. The CVSC was constructed in segments between the late 1960s and early 1970s, and serves as a conveyance channel for agricultural irrigation return water, treated wastewater from three municipal wastewater treatment plants, and urban and stormwater runoff. Portions of the CVSC with adjacent development have been improved by levees and bank protections. The combined WWRSC/CVSC traverses a distance of approximately 50 miles.

Portions of the WWRSC/CVSC have been improved with concrete-slope protection to safely convey flood flows. Improvements typically consist of debris basins and concrete channels to capture debris and convey flash flood flows to the main channel. Debris basins also have the added benefit of capturing and infiltrating small storm flows, thus enhancing recharge of stormwater. Significant amounts of local mountain runoff in the western portions of the basin, including that conveyed by the San Gorgonio and Whitewater Rivers, are currently conveyed to the Whitewater River Groundwater Replenishment Facility near Windy Point. According to the updated CVWD Water Management Plan[105]an average of approximately 44,000-acre feet per year (AFY) of surface water recharges the Whitewater River Subbasin.

[105] Coachella Valley Water Management Plan Update Final Report (2012).



Source: Coachella Valley Water District, 2017

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Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Existing 100-Year Floodplain Map
Coachella Valley Water District

WATER DISTRICT

Exhibit

2-7

CVWD operates and maintains approximately 207 miles of stormwater protection facilities within the District to protect approximately 590 square miles from flooding. In addition to the WWRSC/CVSC, the regional flood control system consists of various regional tributary stormwater facilities. The system collects, detains, and conveys storm flows from the hills and mountains surrounding the Coachella Valley to the Salton Sea. The system also accepts storm flows from local jurisdictions, i.e., Riverside County and cities within the WWRSC/CVSC watershed. The County and cities are responsible for local flood control within their respective jurisdictions. CVWD conducts ongoing stormwater management planning and construction activities, in coordination with Riverside County Flood Control and other agencies and jurisdictions, to provide flood protection within its service area.

Groundwater Resources

As described by the California Department of Water Resources (DWR) Bulletin 118, the local groundwater basin is bounded on the easterly side by the San Bernardino and Little San Bernardino Mountains and on the westerly side by the Santa Rosa and San Jacinto Mountains. The lower or southern boundary is formed primarily by the watershed of the Mecca Hills and by the Salton Sea. Movement of groundwater within the basin is limited and controlled by fault barriers, physical and elevation constrictions in the basin profile, and areas of low permeability. Based on these physical factors, the basin has been subdivided into subbasins and subareas. The boundaries between subbasins are generally based upon faults that are effective barriers to the lateral movement of groundwater.

CVWD obtains groundwater from both the Whitewater River and the Mission Creek Subbasins of the Coachella Valley Groundwater Basin. The Whitewater River Subbasin is a common groundwater source which is shared by numerous public and private groundwater producers. None of the groundwater basins in the Coachella Valley are adjudicated, and there are no legal agreements limiting pumping from the Whitewater River and Mission Creek subbasins. CVWD works with local public water agencies and other Coachella Valley stakeholders to implement the water management plans identified above for the Whitewater River, Mission Creek, and Garnet Hill Subbasins. These plans define a long-term approach for eliminating groundwater overdraft and providing sustainable water supply for the Coachella Valley.

The Coachella Valley Groundwater Basin has been used for urban and agricultural supply since the early 20th century. The basin was first identified by DWR as being in a condition of overdraft in the 1940s. Overdraft is defined as the condition of a groundwater basin in which the outflows (demands) exceed the inflows (supplies) to the groundwater basin over the long term. The overdraft condition has caused Coachella Valley groundwater levels to decline in some areas, and has raised concerns about water quality degradation and land subsidence.

In-lieu groundwater replenishment using imported Colorado River water began in 1949 when the first deliveries from the Coachella Canal were received in the eastern portion of the Coachella Valley. To further address the overdraft conditions, CVWD and DWA jointly operate direct groundwater replenishment programs in the basin. Recharge activities using imported water commenced in the western portion of Coachella Valley in 1973, at the Whitewater River Groundwater Replenishment Facility. Additionally, recharge activities in the eastern portion of Coachella Valley was commenced in 1997 at the Dike No. 4 pilot recharge facility and expanded by CVWD in 2009; this facility is now called the Thomas E. Levy Groundwater Replenishment Facility (CVWD 2006). CVWD and DWA also began replenishment of the Mission Creek Subbasin in 2003. The water management plans identify the continued use of these recharge facilities as a critical component of the Coachella Valley's water supply. As of 2019, CVWD operates a fourth groundwater replenishment facility located in the central valley within the city of Palm Desert. Once fully built-out, the facility will have the capacity to recharge up to 25,000 acre feet annually.

Water Quality and Water Quality Standards

Water for construction and occasional channel maintenance will come from CVWD and/or Coachella Water Authority. The providers supply their customers from wells extracting groundwater. In the Lower Whitewater River Subbasin ground water recharge is being accomplished at the Thomas Levy Groundwater Replenishment Facility located at the westerly extension of Avenue 62 near the toe of slope of the Santa Rosa Mountains.

CVDW complies with state (California Department of Public Health) and federal (U.S. Environmental Protection Agency) drinking water quality standards. Each year, CVWD monitors domestic water wells for regulated and unregulated chemicals that are not detected during regular, ongoing monitoring. The domestic water supply meets current state and federal standards; however, drinking water supplied to some service areas does contain low levels of naturally occurring hexavalent chromium (Cr6), arsenic, radon, and nitrate.[106]

Impaired Water Bodies: The Coachella Valley Stormwater Channel is listed as being impaired for Toxaphene, DDT (Dichlorodiphenyltrichloroethane), Nitrogen, Dieldrin, ammonia (Total Ammonia), PCBs (Polychlorinated biphenyls), Toxicity and Indicator Bacteria under Section 303(d) of the Clean Water Act (CWA). Total Maximum Daily Loads (TMDLs) for the pollutants listed above have been established for the channel.

Surface Water Quality Objectives/Standards and Beneficial Uses

Being located within the Colorado River Basin Region, the Coachella Valley's surface water quality objectives include meeting or exceeding standards for the appearance or aesthetic quality of surface waters, any tainting substances, toxicity, temperature, pH, dissolved oxygen, suspended and settleable solids, total dissolved solids, bacteria, bio-stimulatory substances, sediment, radioactivity, chemical constituents and pesticide wastes.

Floodplain and Floodplain Management

A floodplain is flat or nearly flat land adjacent to a stream or river that experiences occasional or periodic flooding. It includes the floodway comprised of the subject stormwater channel and adjacent areas that carry flood flows. The flood plain may also be defined by the flood fringe, which are areas covered by the flood but which do not experience a strong current. The 100-year floodplain in the project planning area is shown on Exhibit 2-7, showing the depth of potential flooding outside of and beyond the CVSC in the project planning area.

CVWD implements a multi-pronged floodplain management program of corrective and preventative measures to maximize channel capacity, minimize flood damage potential, and preserving and enhancing natural resources in the floodplain. Such programs may include emergency preparedness plans, flood control works, adoption and implementation of floodplain management regulations and plans. The subject reach of the CVSC is narrower than other portions and is further affected and constrained by bridge crossings by State Highway 111, Airport Boulevard and two lines of the Union Pacific Railroad.

The subject reach also contains perennial flows that are maintained by a combination of municipal wastewater reclamation plant discharges and rising groundwater from subsurface drainage systems primarily serving agricultural lands. These wet conditions promote vegetation growth that must be periodically controlled to ensure optimum channel capacity and to avoid unmanageable debris loading and potential for debris dams in the vicinity of the aforementioned bridges and other structures.

[106] Coachella Valley Water District (2013-2014 Annual Review); http://www.cvwd.org/ ArchiveCenter/ViewFile/ Item/59; Accessed 8.30.2016.

2.11.6 Project Impacts

The Proposed Project will involve improvements to the existing stormwater channel, between Avenue 54 and Thermal Drop Structure, to ensure the safe conveyance of regional storm flows through the project area. The project is proposed to address existing channel capacity deficiencies that could result in local flooding during a 100-year storm event. The Proposed Project includes continuous channel side slope concrete-lining from Avenue 54 downstream a point approximately 300 feet downstream of the existing Thermal Drop Structure. Project improvements will also include channel bottom concrete-lining under and in proximity to the four bridges that cross the subject reach of channel. Agricultural drain outlets will also be improved or constructed.

As noted in the *Basis of Design* report, major items of the Proposed Project that will affect channel hydrology include: (1) elimination of the Thermal Drop Structure; (2) lowering the channel invert (bottom) profile between the Airport Boulevard bridge downstream to the Thermal Drop Structure and beyond; (3) concrete lining the channel side slopes along the entire length of the project reach; and (4) lining of the channel bottom at and near Airport Boulevard bridge; two UPRR bridges and Highway 111 bridge.

Design constraints along the project channel reach include the low bank and soffit elevations at the Airport Boulevard bridge, the sharp bend in the channel upstream of the UPRR bridge, and the relatively wide, miss-aligned piers and low soffit elevations at the UPRR bridges. The channel along the project reach will also be deepened (the project invert has been lowered) to convey the design flow through these system constraints.

The Proposed Project is designed to convey the peak 100-year flow rate of 39,000 cfs and provide 4 feet of freeboard to the top of the proposed concrete lining on the channel banks. All four existing bridges are incorporated into the plan with existing spans and soffit levels; no bridge modifications are proposed. Other improvements that affect channel hydrology include extended extension of channel slope lining below calculated scour levels and the introduction of two cutoff walls.

The existing project reach tends to accumulate sediment, and vegetation density within the channel has increased in recent years in the periods between maintenance activities. These same tendencies are expected to continue under with-project conditions. Sediment, debris and vegetation management will be required to maintain the design capacity of the project reach. Upstream and downstream hydraulic and channel stability impacts associated with the proposed plan are expected to be minimal.

The channel improvements planned under the Proposed Project will also include the relocation of existing utilities, including a SCG natural gas pipeline, an irrigation lateral, and IID power poles. The relocation of most utilities will be conducted by their respective owners; CVWD will be responsible for the relocation of Lateral 99.8.

In-channel activities will include establishment of staging areas, equipment movement, extensive grading, excavation and hauling, soil re-compaction and hydroconsolidation, import and placement of aggregate, placement of steel reinforcing bar, pouring and finishing concrete, and final grading. In stages, the current pilot channel will be temporarily re-routed to either side of the channel to allow construction of the sub-grade portion of the channel slope lining and bottom lining. Upon completion of section-by-section improvements, the low-flow pilot channel will be returned to its location along the channel centerline.

The Proposed Project has the potential to affect local and regional surface hydrology and could also impact water quality. Therefore, the following analysis has been conducted to determine if the project will result in significant impacts to surface hydrology or water quality.

a) Will the Project violate any water quality standards or waste water discharge requirements?

Less than Significant with Mitigation. The subject reach of the channel, and that portion between Dillon Road and the Salton Sea, has been identified as impaired for pathogens, and for toxaphene from Lincoln Street to the Salton Sea. It is listed as being impaired for DDT (Dichlorodiphenyltrichloroethane), Dieldrin, Nitrogen, ammonia (Total Ammonia), PCBs (Polychlorinated biphenyls), Toxaphene, Toxicity, and Indicator Bacteria under Section 303(d) of the Clean Water Act (CWA).[107, 108]

The CVSC is listed as impaired for the pathogens because surface waters in this reach violate water quality standards (WQSs) established by the Colorado River Basin Regional Water Quality Control Board (Regional Board) to protect the water contact recreation (REC I) and water non-contact recreation (REC II) beneficial uses (BUs).[109] The CVSC not only serves as a stormwater conveyance, but it also conveys agricultural irrigation return water, reclaimed municipal wastewater from three permitted municipal wastewater treatment plants, wastewater discharge from one permitted fish farm, and urban runoff.

Construction Impacts
For the Proposed Project, most of the construction activities will be occurring within the channel and atop the channel service road. Other activities will include the transport of materials into and out of the channel and the management of low flows in the channel as construction progresses. Construction activities at the site would entail the use of heavy equipment and associated potentially hazardous materials, such as fuels (gasoline and diesel), oils and lubricants, and cleaners (e.g., solvents, corrosives, soaps, detergents), which are commonly used in construction projects. During construction, accidental spills could occur and potentially cause a discharge of hazardous materials to surface or groundwater and violating water quality standards. Preparation of staging areas and construction site prior to construction will require clearing and grubbing. All removal will be mechanical and no use of herbicides is anticipated for this purpose. See Section 2.10.7 for related mitigation measures.

Excavation in the channel bottom will be required to construct the toe-down (sub-grade portions) of the channel side slope lining. This temporary activity will require temporary controlled re-routing of the perennial stream away from the excavation area. Project engineers plan to excavate and install the side slope lining in stages that will include areas of active construction to be de-watered due to high groundwater with groundwater to be pumped into adjoining de-silting basins before being pumped into the perennial stream flows. Subsequently, the next phase of lining will proceed along the channel side slope and a new temporary adjoining de-silting basin will be excavated. In this manner, excavation and de-silting basins will be constructed and backfilled as lining progresses down stream.

Several components of the project would include construction with concrete within the channel with limited amounts of elastomeric sealant (conforms to ASTM C 920) used to bond pour segments and provide for expansion. Uncured concrete is extremely alkaline with a pH near 12 and this caustic material is harmful to plants and wildlife. Of particular concern is concrete washout from cleaning ready mixed concrete trucks

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107 Total Maximum Daily Load (TMDL) and the 303(d) List of Impaired Water Bodies-2012 303(d) List, Attachment 1 (The 2010 303(d) List for the Colorado River Basin Region) issued by Colorado River Basin Regional Water Quality Control Board; https://www.waterboards.ca.gov/coloradoriver/water_issues/programs/tmdl/rb7_303d_list.shtml; Accessed on December 2017.

108 Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer System (Ms4) Within the Whitewater River Watershed (Order No: R7-2008-0001) prepared by California Regional Water Quality Control Board, Colorado River Basin Region (Regional Board) in 2008.

109 Total Maximum Daily Load And Implementation Plan For Bacterial Indicators Coachella Valley Stormwater Channel by California Regional Water Quality Control Board Colorado River Basin Region (2007).

and hoppers of concrete pump trucks, highly diluted concrete slurry. Concrete washout slurry can alter soil chemistry, inhibit plant growth, can degrade surface and groundwater, and result in violations of water quality standards.

Ground-disturbing activities during construction could result in increased soil erosion and input of sediment into water sources. It should be noted that in the existing channel soils are generally very dry and subject to fluvial and wind erosion. Under the Proposed Project, grading, excavation and other ground-disturbing activities may contribute to soil erosion. Project activities that could increase soil erosion and deposition into surface waters include:

- Demolition and excavation of existing concrete and earthen materials,
- Widening of channel bed and slopes via excavation and grading of earthen material,
- Use of heavy equipment for hauling excess cut and debris, and
- Stockpiling of excavated materials or soils to be used for backfill.

The potential for natural erosion type hazards is high in areas with a combination of the following conditions: 1) moderately steep to steep slopes (greater than 15 percent), 2) loose to unconsolidated soils and sediments, 3) little or no vegetation cover, and 4) uncontrolled surface water runoff. Changes in any of these conditions can increase erosion potential. Additionally, an increase in erosion can increase downstream sediment loads. Much of the project planning area is highly susceptible to wind erosion and the transport of fugitive dust and sand. [110]

Soils in the project area would be disturbed during construction as a result of material excavation along the channel bed and banks, and during construction and use of access roads. Erosion may also occur at staging areas, where initial grading and subsequent disturbance by construction equipment would destabilize soils, leaving them vulnerable to erosion. Soils stockpiling, hauling or backfill would be especially vulnerable to erosive effects of wind and rain. As soils in the project area are relatively easily erodible, even soils that are stockpiled properly may erode as a result of rain or high winds.

Impacts associated with excessive erosion include degraded water quality and excessive sedimentation. Erosion would be limited by application of a variety of methods and materials to stabilize disturbed surfaces, including on-going site watering, which is planned as part of project construction. While project construction has the potential to increase soil erosion and deposition into surface flows, it should be considered that the channel's normal function is to transport bulked flood flows that convey silt, sand and gravels along the channel. Necessary periodic channel maintenance also destabilizes channel soils and exposes them to wind and water erosion. Therefore, erodible channel soils are an existing and on-going condition in the dry desert climate.

Temporary or portable sanitary facilities provided for construction workers could be a source of sanitary waste that could affect the human use environment if not properly managed. The use and maintenance of these facilities, however, is regulated, and any contractor engaged to provide the service will be subject to and must implement these regulations.

Construction BMPs referenced above and required by Mitigation Measures HYD-3 and 4, HYD-6 through 9, below, will effectively reduce or avoid the discharge of any pollutants of concern that might enter nearby receiving waters by establishing limits of construction and the use of a variety of standard practices, including silt berms and fences, earth dikes, drainage swales, sediment traps, check dams, reinforced soil retaining systems, temporary sediment basins and flow diversion. In accordance with the Colorado River Basin Region NPDES Permit (NPDES No. CAS617002), the channel improvement project is not a Priority

[110] Draft EIR for the Coachella General Plan Update 2035, 2015.

Development project. Therefore, no post-construction BMPs are required. With the application of mitigation set forth below, including HYD-3, 4, 6, 7, 8 and 9, the project will not exceed wastewater discharge requirements, and impacts to water quality will be less than significant.

To protect the water quality during construction, SWRCB's existing construction policy (Construction General Permit Order 2009-0009-DWQ) will require the development of a project specific construction SWPPP in compliance with the State's General Construction Permit. Temporary construction BMPs considered and incorporated into the project, as appropriate, would include:

- Soil stabilization (erosion control) techniques such as on-going site watering, soil binders, etc.;
- Sediment control methods such as detention basins, silt fences, and dust control;
- Contractor training programs;
- Material transfer practices;
- Waste management practices such as providing designated storage areas and containers for specific waste for regular collection
- Concrete washout slurry shall be discharged and disposed of in an approved manner
- Channel cleaning/tracking control practices;
- Vehicle and equipment cleaning and maintenance practices; and
- Fueling practices.

By following the procedures outlined in the mitigation measures set forth below, as well as SWPPP, impacts to water quality associated with construction activities would be less than significant because pollution, contamination or nuisance as defined in Section 13050 of the CWC or violation of regulatory standards as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for receiving water body would be minimized and less than significant with mitigation.

Operational Impacts

Channel operation and maintenance impacts that could affect water quality will be very limited and less than significant. CVWD weekly channel inspections and annual channel maintenance will follow well-established protocols. Biological resources are dependent on aquatic resources downstream of the project site since the receiving waters have beneficial recreation uses. A wide range of project design elements, including inert and non-toxic paving materials, and regular maintenance, will ensure that post-construction the project does not violate any water quality standards or waste water discharge requirements, and will preclude adverse impacts to aquatic resources in the project area and downstream and therefore have a less than significant impact on water quality.

Impacts to the water quality would be less than significant with application of the mitigation measures set forth below.

Utility Projects

As with the channel improvement portion of the Project, application of mitigation measures set forth below will ensure that construction activities associated with the utility relocation projects will not exceed wastewater discharge requirements, and impacts to water quality will be less than significant.

To protect the water quality during construction, SWRCB's existing construction policy (Construction General Permit Order 2009-0009-DWQ) will require the development of a project specific construction SWPPP in compliance with the State's General Construction Permit. Temporary construction BMPs will be considered and incorporated as appropriate.

Impacts on water quality will be less than significant.

b) Will the Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less than Significant. The Proposed Project will generate demand for water resources for concrete, dust control, hydro-consolidation of soils, haul truck cleaning, and related construction activities. Water demand associated with project construction was calculated based on the extent and type of development. It is assumed, based on analysis of comparable construction projects, that construction of the Proposed Project could generate a demand of up to 4.42± acre-feet for concrete and 53± acre-feet for all other construction activities, including and especially hydroconsolidation and dust control over the course of construction.

Post-construction, annual channel maintenance will involve vegetation mowing and removal, and remediating channel grading that is anticipated to occur approximately every three years and generate an annual average demand of 2 acre-feet of water.

Putting the water demand for the subject channel improvements, operation and maintenance into context helps to understand the relative significance of this demand. For 2015, the Coachella Valley Integrated Water Management Plan has projected valley-wide water demand of 689,753 acre-feet.[111] The CVSC project's modest one-time demand of 57± acre-feet constitute a 0.008% increase in demand during the project's construction year.

Depending on location along the channel and the time of year, the Proposed Project may intrude into the perched groundwater table primarily associated with agricultural irrigation water, which is not the source of supply for domestic uses in the area. Therefore, the Proposed Project will not substantially deplete groundwater supplies nor will it interfere substantially with groundwater recharge, will not create a net deficit in aquifer volume or lower the local groundwater table level. Surround wells will be unaffected by the Proposed Project.

It should be noted that incremental excavation associated with channel side slope lining is expected to intercept groundwater in the perched aquifer that is primarily supported by agricultural irrigation and is high in dissolved solids and not potable or useful for crop irrigation. Intercepted groundwater will be discharged into temporary detention/de-silting basins and will either percolate into the groundwater or be discharged into the existing low-flow channel. Therefore, the Project will not result in lowering or net deficit in groundwater that would affect existing land uses or planned uses.

Therefore, the water demand associated with both construction and operation of the subject channel segment will be very limited, and any impacts to groundwater will be less than significant.

Utility Projects
Similar to the channel improvement portion of the Project, construction water demands for the utility relocation projects would be temporary and would end once construction and relocation is complete. There will be no operational water demands. Impacts will be less than significant.

[111] "Coachella Valley Integrated Water Management Plan", prepared by Coachella Valley Regional Water Management Group. 2010.

c) Will the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or offsite?

d) Will the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of surface runoff in a manner, which would result in flooding on- or off-site?

Less than Significant (c and d). The subject segment of the CVSC generally has a trapezoidal cross section and generally carries a perennial flow of 1 to 3 cfs fed by agricultural drains, municipal wastewater reclamation plant discharges and nuisance water. Winter flows tend to be turbid due to sediment loading from the upstream and from bank erosion along the channel. Lower summer flows can lead to stagnant water conditions, low dissolved oxygen content, and higher water temperatures.

The intent of the Proposed Project is to make improvements to the subject reach of the CVSC that are sufficient to contain the 100-year storm with adequate channel freeboard. While the project will significantly improve the channels capacity and function, it will also remove the surrounding lands from an existing 100-year flooding hazard that currently extends well beyond the subject channel. Currently, neither the channel side slopes nor channel bottom are lined, and are subject to both wind and fluvial erosion. The threat of erosion outside the channel in a large flooding event is mitigated by the Proposed Project.

The Proposed Project will not substantially alter the existing drainage pattern, excepting that it will contain the 100-year storm flow projected for this reach of the channel and also provide requisite freeboard. Therefore, as noted, the Proposed Project will remove approximately 4,577 acres of rural and urban lands from the existing 100-year flood hazard. Prior to construction of the CVSC, periodic large storms would flood large areas of agriculture, and rural and urban development. Meandering and difficult to predict and control flood flows were ultimately addressed through the engineered extension of the Whitewater River Stormwater Channel east of Washington Street.

The Proposed Project has a very limited potential to substantially increase the rate of surface runoff. The Proposed Project will construct approximately 21.12 acres of impermeable surface in the form of [concrete] channel slope and bottom lining[112]. The subject segment of the CVSC is projected to carry a 100-year flow of approximately 39,000 cfs and an SPF flow of about 82,000 cfs.[113] Therefore, due to the regional watershed served by the CVSC, the limited additional area of impermeable surface introduced into the watershed, and the lag time between local and regional runoff, the Proposed Project will not substantially increase the rate of surface runoff in a manner that would result in an increased flooding hazard either within the project planning area.

Utility Projects

The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways and graded shoulders, service roads, and existing utility structures. One IID power pole located within the channel would be removed, and the corresponding channel bottom will be excavated and lined at this location. The utility relocation projects will not substantially increase the rate of surface runoff in a manner that would result in an increased flooding hazard either within the project planning area. Post-utility relocation conditions would be similar to existing utility conditions, with the exception of the IID power pole being removed from within the channel, and the existing drainage pattern would not adversely be altered. Impacts would be less than significant

[112] Note cited surface area substantially greater than side slopes when measured perpendicular to horozontal.

[113] Draft Avenue 54 to Thermal Drop Channel Improvement Project Hydraulic Baisis of Design, Northwest Hydraulic Consultants. August 2017.

e) Will the Project create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant with Mitigation. Construction of the Proposed Project in itself would not generate large volumes of stormwater that would exceed the capacity of existing or planned stormwater channel improvements. However, the use of construction equipment, vehicles, and materials in the CVSC channel would create the potential for increases in polluted runoff during rain events. Construction materials and activities will be controlled and managed through pre-construction planning, thoughtful siting of construction staging areas, dust and runoff control plans, and the implementation of BMPs and mitigation measures set forth below in Section 2.11.7. With the implementation of BMPs and mitigation measures, the potential for the project to generate significant volumes of polluted runoff will be less than significant

As noted above, incremental excavation associated with channel side slope lining is expected to intercept groundwater in the perched aquifer that is primarily supported by agricultural irrigation and is high in dissolved solids and not potable or useful for crop irrigation. Intercepted groundwater will be discharged into temporary detention/de-silting basins within the channel and will either re-percolate into the aquifer or be discharged into the existing low-flow channel. Therefore, the Project will not result in the creation of or make a significant contribution to the channel's capacity nor will it result in an increase in polluted runoff.

Utility Projects
As with the channel improvement portion of the Project, construction materials and activities associated with all utility relocation projects will be controlled and managed through pre-construction planning, thoughtful siting of construction staging areas, dust and runoff control plans, and the implementation of BMPs and mitigation measures set forth below in Section 2.11.7. With the implementation of BMPs and mitigation measures, the potential for the project to generate significant volumes of polluted runoff will be less than significant

f) Will the Project otherwise substantially degrade water quality?

Less than Significant. The Proposed Project will involve channel excavation and the installation of concrete side slope and in some areas channel bottom lining. All of the planned construction materials are essentially inert once in place and concrete has cured. Once construction is completed, the planning area will be periodically monitored and channel maintenance performed. Post-construction, the project has a less than significant potential to substantially degrade local or regional water quality.

Utility Projects
All of the planned construction materials for the utility relocation project are essentially inert once in place and concrete has cured. Once construction is completed, the utilities will be periodically serviced and maintained as necessary. Post-construction, the utility relocations will have a less than significant potential to substantially degrade local or regional water quality.

g) Will the Project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazards Boundary or Flood Insurance Road Map or other flood hazard delineation map?

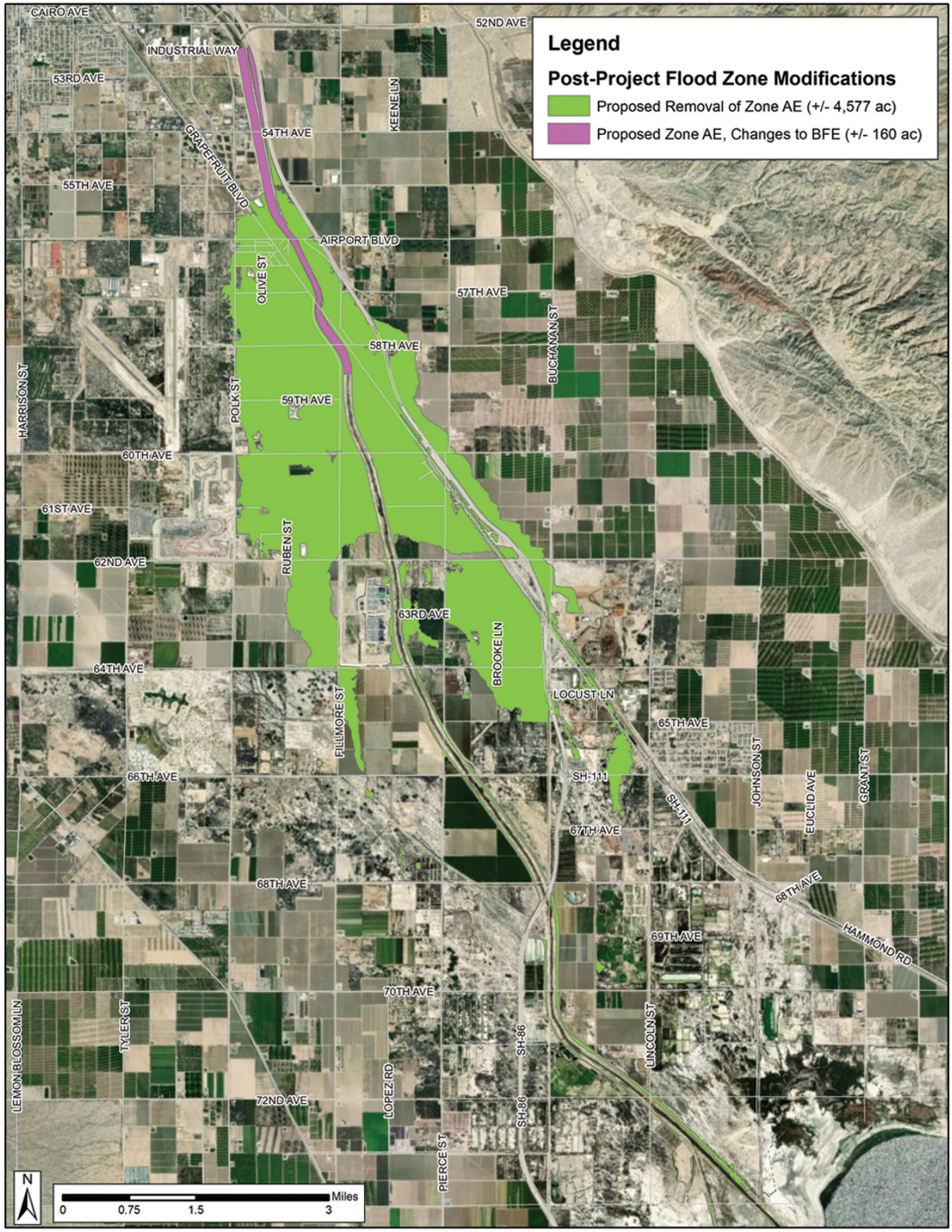
No Impact. The Proposed Project would not involve the construction of new housing. Rather, the project is designed to remove approximately 4,577 acres that include residential lands and development from the exiting 100-year flood plain. Therefore, the Proposed Project will have a beneficial environmental effect in this regard.

Utility Projects
The utility relocation projects would not involve the construction of new housing. No impact would occur.

h) Will the Project place within a 100-year flood hazard area structures, which would impede or redirect flood flow?

No Impact. The intent of the Proposed Project is to reduce the extent of the 100-year flood threat by improving the channel construction and capacity. In proximity to the four bridges that cross the channel in the project area, channel head walls and channel bottom lining are proposed to ensure that flows through bridge supports is as efficient as possible. The Proposed Project does not introduce new obstructions to flood flows nor will it impede or deflect such flows.

Utility Projects
As noted above, the purpose of the Project is to reduce the extent of the 100-year flood threat and to improve flood flows through the Coachella Valley. One of the utility relocation projects requires the removal of an IID power pole located within the channel in proximity to the Airport Boulevard Bridge, which essentially removes a structure that would otherwise impede or redirect flood flows. The SCG natural gas line and irrigation lateral will be buried once relocated, and no new obstructions would result from the utility relocations.



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Source: Esri; Northwest Hydraulic Consultants, Inc., 2018

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Coachella Valley Stormwater Channel Improvement
Avenue 54 to Thermal Drop Structure
Post-Project Protected Area Map
Coachella Valley Water District

WATER DISTRICT

Exhibit
2-8

i) Will the Project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. There are no impoundment levees or dams in the construction area and none are proposed. Temporary catchments and low-flow diversions are planned during construction to convey perennial flows through the site and to intercept and convey any groundwater that breaks out during excavation. Therefore, project construction will not result in an appreciable increase in channel flows and none of the flows constitutes a risk of damage, loss, injury or death.

Utility Projects
There are no impoundment levees or dams in the construction area, and none are proposed. Therefore, the utility relocation projects will not result in an appreciable increase in flooding and none of the flows constitutes a risk of damage, loss, injury or death.

j) Will the Project expose people or structures to inundation by seiche, tsunami, or mudflow?

No Impact. The construction area is not vulnerable to seiche or tsunami, and there are no project features that would increase exposure of people or structures to such occurrences. The project will not create any large impoundments that could affect people or property. Mudflows are an extremely rare event in this area. No impact is anticipated.

Utility Projects
The utility relocation areas are not vulnerable to seiche or tsunami, and there are no project features that would increase exposure of people or structures to such occurrences. The project will not create any large impoundments that could affect people or property. No impact is anticipated.

2.11.7 Mitigation Measures and Monitoring Programs

The channel improvement design process has taken into consideration the relationship to and potential impacts on the existing and long-term water quality in the channel. Overall, the project will have a significant beneficial impact on area drainage, provides substantial soft channel bottom to support a wide range of vegetation and associated bioremediation. The following measures are set forth to ensure that project impacts are below levels of significance.

HYD-1 Project Plan Review
Prior to finalizing the hydraulic design and engineering plans for CVSC improvements, said plans shall be reviewed and approved by CVWD to ensure that these improvements do not interfere with or adversely affect channel capacity or the ability of CVWD to manage and maintain these facilities.

HYD-2 NPDES Requirements
The Proposed Project shall comply with the requirements of the National Pollution Discharge Elimination System (NPDES).

HYD-3 General BMPs
The implementation of BMPs during construction activities shall ensure that erosion and siltation from earthmoving and other construction activities is limited. Exposed soil from excavated areas, stockpiles, and other areas where ground cover is removed shall be stabilized by wetting or other approved means to avoid or minimize the inadvertent transport by wind or water. Temporary construction BMPs considered and incorporated into the project, as appropriate, would include:

- Soil stabilization (erosion control) techniques such as on-going site watering, soil binders, etc.;
- Sediment control methods such as detention basins, silt fences, and dust control;
- Temporary de-silting basins will be constructed incrementally along the channel to store and clarify water adjoining de-watered areas in the channel, and will be backfilled as side slope lining progresses downstream.
- Contractor training programs;
- Material transfer practices;
- Waste management practices such as providing designated storage areas and containers for specific waste for regular collection
- Concrete washout slurry shall be discharged and disposed of in an approved manner
- Channel cleaning/tracking control practices;
- Vehicle and equipment cleaning and maintenance practices; and
- Fueling practices.

HYD-4 Stormwater Pollution Prevention Plan

The construction contractor shall implement a CVWD-approved (SWPPP) during construction of the Proposed Project. The SWPPP shall identify specific best management practices (BMPs) that will be implemented during project construction. BMPs implemented as a part of the project will ensure that the project meets the requirements of the California State Water Resources Control Board NPDES Construction General Permit.

Construction-related erosion and sediment controls, including any necessary stabilization practices or structural controls, shall be implemented at and in all potentially affected drainages. General structural practices may include, but are not limited to, silt fences, earth dikes, drainage swales, sediment traps, check dams, reinforced soil retaining systems, temporary or permanent sediment basins and flow diversion.

Temporary erosion and sediment control measures shall be installed during or immediately after initial disturbance of the soil, maintained throughout construction (on a daily basis), and reinstalled until replaced by permanent erosion control structures or final grading and other site disturbances are complete. In addition, the following specific actions shall be taken to ensure that impacts are less than significant.

a) The construction shall be avoided within the limits of identified waterways as depicted on the Jurisdictional Delineation Report prepared for this EIR, except as authorized by federal, state or local permits.
b) Protect inlets and outlets of culverts from construction material intrusions using temporary berms to prevent channel incision, erosion, and sedimentation.
c) Erosion control measures appropriate for on-the-ground conditions, including percent slope, length of slope, and soil type and erosive factor, shall be implemented.
d) Temporary erosion controls such as straw bales and tubes, geotextiles and other appropriate diversion and impounding materials and facilities shall be properly maintained throughout construction (on a daily basis) and reinstalled (such as after backfilling) until replaced with permanent erosion controls or restoration is complete.
e) Where jurisdictional waters are adjacent to or within the construction area, the contractor shall install sediment barriers along the edge of the construction right-of-way to contain spoil and sediment within the construction area and limit discharge into jurisdictional areas or waters.

f) Ensure that all employees and contractors are properly informed and trained on how to properly install and maintain erosion control BMPs. Contractors shall require all employees and contractors responsible for supervising the installation and maintenance of BMPs and those responsible for the actual installation and maintenance to receive training in proper installation and maintenance techniques.
g) Project scheduling will include efficient staging of the construction that minimizes the extent of disturbed and destabilized work area, and reduces the amount of soil exposed and the duration of its exposure to wind, rain, and vehicle tracking.
h) The use of a schedule or flow chart will be incorporated to lay out the construction plan and will allow proposed CVSC improvements to proceed in a manner that keep water quality control measures synchronized with site disturbance, paving and other construction activities.
i) The sequencing and time frame for the initiation and completion of tasks, such as site clearing, grading, excavation, concrete lining and other construction, shall be planned in advance to ensure minimization of potential impacts.

HYD-5 Petroleum BMPs

To prevent petroleum products from contaminating soils and water bodies in the channel, the following BMPs shall be implemented:

a) Construction equipment and vehicles shall be properly maintained to prevent leakage of petroleum products.
b) Vehicle maintenance fluids and petroleum products shall be stored, and/or changed in staging areas established at least 100 feet from delineated streams and other drainages. These products must be discarded at disposal sites in accordance with state and federal laws, rules, and regulations.
c) Drip pans and tarps or other containment systems shall be used when changing oil or other vehicle/equipment fluids.
d) Areas where discharge material, overburden, fuel, and equipment are stored shall be designed and established at least 100 vegetated (permeable) feet from the edge of delineated streams.
e) Any contaminated soils or materials shall be disposed of off-site in proper receptacles at an approved disposal facility.
f) All erosion control measures shall be inspected and repaired after each rainfall event that results in overland runoff. The project contractor shall be prepared year round to deploy and maintain erosion control BMPs associated with the project.
g) Existing culverts shall be carefully maintained in place in order to ensure that they function properly. Considerations include: maintenance of inlet and outlet elevations, grade, adequate compacted material cover, and inlet/outlet protection.

2.11.8 Significance After Mitigation

As discussed above, the Proposed Project is intended to protect a large area of the east Coachella Valley by improving the subject reach of the CVSC so that it can convey at least the 100-year storm along its length. The project will enhance and improvement existing drainage conditions and flood control. The project will also have a de minimis impact on surface and groundwater, and will continue to provide significant opportunity for groundwater recharge and bioremediation along the channel reach. The project will not substantially altering existing drainage patterns or alter the course of a stream or river, nor would the project result in substantial erosion of siltation. The Proposed Project will not place housing or any structure that would impede or redirect flows within a 100-year floodplain. During storm events, access to stormwater channel will be restricted. There are no flooding hazards associated with the failure of a levee, dam, other impoundment or from other causes. Through required on-going consultation and plan approval process, as well as the implementation of the above cited mitigation measures, potential impacts to hydrology and water quality will be reduced to a less than significant level.

2.11.9 Cumulative Impacts

The geographic scope for the analysis of cumulative surface water hydrology and water quality/resources impacts consists of the subject channel reach and downstream portions of the channel. The scope of analysis also includes and takes into consideration the effects of other development on the subject flood control facilities, including development and agricultural activities along all areas tributary to this drainage. The various stormwater management and facilities maintenance plans implemented by CVWD include implementation of control measures that protect both surface and groundwater quality. During grading, excavation and channel lining activities soil surfaces will be exposed and will be susceptible to soil erosion and sediment transport downstream. Construction BMPs set forth above and as required by CVWD, will also be implemented to minimize the polluted included into the drainages.

Temporary or portable sanitary facilities provided for construction workers could be a source of sanitary waste. Construction BMPs shall be implemented during construction activities to reduce any pollutants of concern that may enter nearby receiving waters, which would help reduce short term water quality impacts caused by the construction of the Proposed Project.

The Proposed Project will incrementally reduce the land area and improvements that are currently subject to flooding and/or inundation in a 100-year storm event in the subject reach of the channel. While construction of the Proposed Project has the potential to degrade surface water quality through soil erosion or accidental discharges, this potential will be avoided or minimized through the implementation of standard BMPs and the above described mitigation measures. Therefore, the Proposed project will not make a substantially considerable contribution to local or regional hydrology or water quality.

2.12 Land Use/Planning

2.12.1 Introduction

The following section describes the existing land uses in the vicinity of the project, and evaluates the compatibility of and potential impacts to those land uses from implementation of the Proposed Project. Land use regulations that address land use planning in the area are provided for evaluation of land use compatibility. Potential land use impacts from project construction and operation are evaluated. Design elements that serve to avoid or minimize impacts are described, as are mitigation measures that would avoid or reduce impacts. The Proposed Project is not located within or adjacent to a Conservation Area established by the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP). Please refer to Section 3.5 Biological Resources for a comprehensive resource-based discussion of the channel improvement project's potential effects on species and habitats covered by the MSHCP. Agricultural land use is discussed in Section 2.3: Agricultural and Forestry Resources.

2.12.2 Thresholds of Significance

The thresholds of significance analyzed herein have been taken from Appendix G of the State CEQA Guidelines. For purposes of this EIR, the proposed channel improvement project would have a significant effect on existing and planned land use if it were to:

a) Physically divide an established community.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

2.12.3 Regulatory Framework

There are a limited number of federal or state land use regulatory plans that are relevant to the subject channel improvement project. These include regional habitat conservation plans such as the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), which is a federal, state and local habitat management plan. Finally, county and local General Plans and implementing planning documents also establish and regulate the land use pattern on non-federal lands. These plans are briefly discussed below.

Federal

The federal government (US Fish and Wildlife Service) has issued an "incidental take" permit pursuant to Section 10(a) of the federal Endangered Species Act (ESA) for species covered under the CVMSHCP. No portion of the proposed channel improvement project interfaces with conservation lands managed under this plan.

State

The State of California (Department of Fish and Wildlife) is a participating agency under the CVMSHCP and has a role in regulating biological diversity land use based upon the Natural Communities Conservation Plan (NCCP) as a part of the overall MSHCP. No portion of the proposed channel improvement project interfaces with conservation lands managed under this plan.

The state has other regulatory roles associated with the protection of water quality and jurisdictional waters of the state. These resources and potential project impacts are discussed in Section 2.10: Hydrology and Water Quality of this EIR.

Regional/Local

The Riverside County and Coachella General Plans are the primary local planning documents regulating land uses on non-federal lands in the project area. The following sets forth goals, policies and programs from each jurisdiction's General Plans that are relevant to the channel project.

City of Coachella[114]
The project planning area is designated *Open Space* on the City of Coachella General Plan Land Use Map. Applicable General Plan goals and policies are set forth below.

Safety Element

Goal 3.	Flood hazards. A community that is minimally disrupted by flooding and inundation hazards.
Policy 3.2	Flood mitigation in repetitive-flooding areas. Identify repetitive flood problem areas in existing development, prioritize hydrological studies of areas that flood repeatedly during storms and develop feasible engineering solutions to mitigate these sites.
Policy 3.5	Storm drainage facilities. Maintain, develop and improve where needed, the storm drain facilities (including bridges and other stormwater channel crossings) with an emphasis on those areas in the City that flood repeatedly.

[114] Coachella General Plan, 2015.

Goals 4. Stormwater Capacity. Sufficient stormwater drainage facilities and services that are environmentally sensitive, accommodate growth and protect residents and property.

Policy 4.2 New stormwater facilities. Ensure all new drainage facilities are adequately sized and constructed to accommodate stormwater runoff in urbanized areas.

Policy 4.3 Regional stormwater facilities. Coordinate efforts with Riverside County and other agencies in the development of regional stormwater facilities.

Riverside County

The County General Plan includes the main document and various area plans, including the Eastern Coachella Valley Area Plan where the project planning area is located.

Safety Element

The County General Plan Safety Element includes goals and policies relevant to the project. These include the following:

Policy S 4.6 Direct flood control improvement measures toward the protection of existing and planned development.)

Policy S 4.7 Any substantial modification to a watercourse shall be done in the least environmentally damaging manner possible practicable in order to maintain adequate wildlife corridors and linkages and maximize groundwater recharge.

Policy S 4.10 Require all projects anywhere in Riverside the county to address and mitigate any adverse impacts that it may have on the carrying capacity of local and regional storm drain systems.

County Eastern Coachella Valley Area Plan

County Eastern Coachella Valley Area Plan designates the project planning area as *Water* on the Area Land Use Plan. The Area Plan defines these lands as including bodies of water and natural or artificial drainage corridors.

ECVAP 18.1 Protect life and property from the hazards of flood events through adherence to the Flood and Inundation Hazards section of the General Plan Safety Element.

ECVAP 18.2 Adhere to the flood proofing, flood protection requirements, and Flood Management Review requirements of the Riverside County Ordinance No. 458 Regulating Flood Hazard Areas.

ECVAP 18.3 Require that proposed development projects that are subject to flood hazards, surface ponding, high erosion potential or sheet flow be submitted to the Coachella Valley Water District for review.

Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP)

The project area is not located within or adjacent to a Conservation Area associated with the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP). The MSCHP is a regional conservation plan coordinated by the Coachella Valley Association of Governments through Coachella Valley Conservation Commission (CVCC) in cooperation with its member jurisdictions and several state and federal agencies. The latter include the California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), the National Park Service (NPS), Bureau of Land Management (BLM), and U.S. Forest Service (USFS). The MSHCP planning area is comprised of approximately 1.1 million acres in the Coachella Valley, including the project planning area. CVWD is a “Permittee” under the Plan.

2.12.4 Environmental Setting

The Coachella Valley is located in the central portion of Riverside County at the westernmost limits of the Sonoran Desert. The San Jacinto Mountains and San Bernardino Mountains form the western portions of the valley, while the Little San Bernardino and Santa Rosa Mountains form the northern and southern boundaries, respectively. Much of the urbanization in the Coachella Valley has initially taken place along the toe of the slopes of the Santa Rosa and San Jacinto Mountains, and has spread progressively onto the valley floor and southeastward through Coachella to the communities of Thermal and Mecca.

The region is noted for prime agricultural lands in the east valley areas, and for exclusive resort residential and world-class tourist developments primarily in the western and central portions of the valley, although this trend is continuing to move east. In the western portions, agriculture developed (primarily dates and citrus) early in the 20th Century gave way to resort, residential and commercial development. The area's natural assets, including mountain views, varied wildlife and sunny weather, and a dependable water supply, have become progressively important to the local economy and environment, and have contributed to the region's character and desirability.

The region is served by major transportation arteries, including US Interstate-10, State Highways 111, 74, 62 and 86, and the Union Pacific Railroad, which (as Southern Pacific Railroad) was primarily responsible for opening up the area in the mid-1800s. State Highway 111 and lines of the Union Pacific Railroad pass through the project planning area. The Palms Springs International Airport and secondary general aviation facilities, including the Jacqueline Cochran Regional Airport a short distance west of the project area, also serve the region.

General Plan Land Use Designations

Lands adjacent to and in proximity of the proposed channel improvement project are primarily designated for *Light Industrial*, *Low Density Residential* and *Commercial Retail*. An area designated *High Industrial* is located on the west side of the channel between Airport Boulevard (Ave 56) and Ave 54. The channel itself is designated *Public Facilities*. Lands south of the project south limits are primarily designated *Agriculture*. Also please see Exhibit 2-9 Land Use Map.

Existing and Surrounding Land Use

The project planning area extends approximately one mile north and south of Airport Boulevard (Avenue 56) and is located in the city of Coachella and adjacent to the unincorporated community of Thermal, with residential development located both east and west of the existing channel. While potential improvements to the existing channel have been in place for several decades and much of the residential development on the east side of the channel has occurred since the channel's construction. Table 2-13 below identifies current land uses and General Plan land use designations on the project site and surrounding lands.

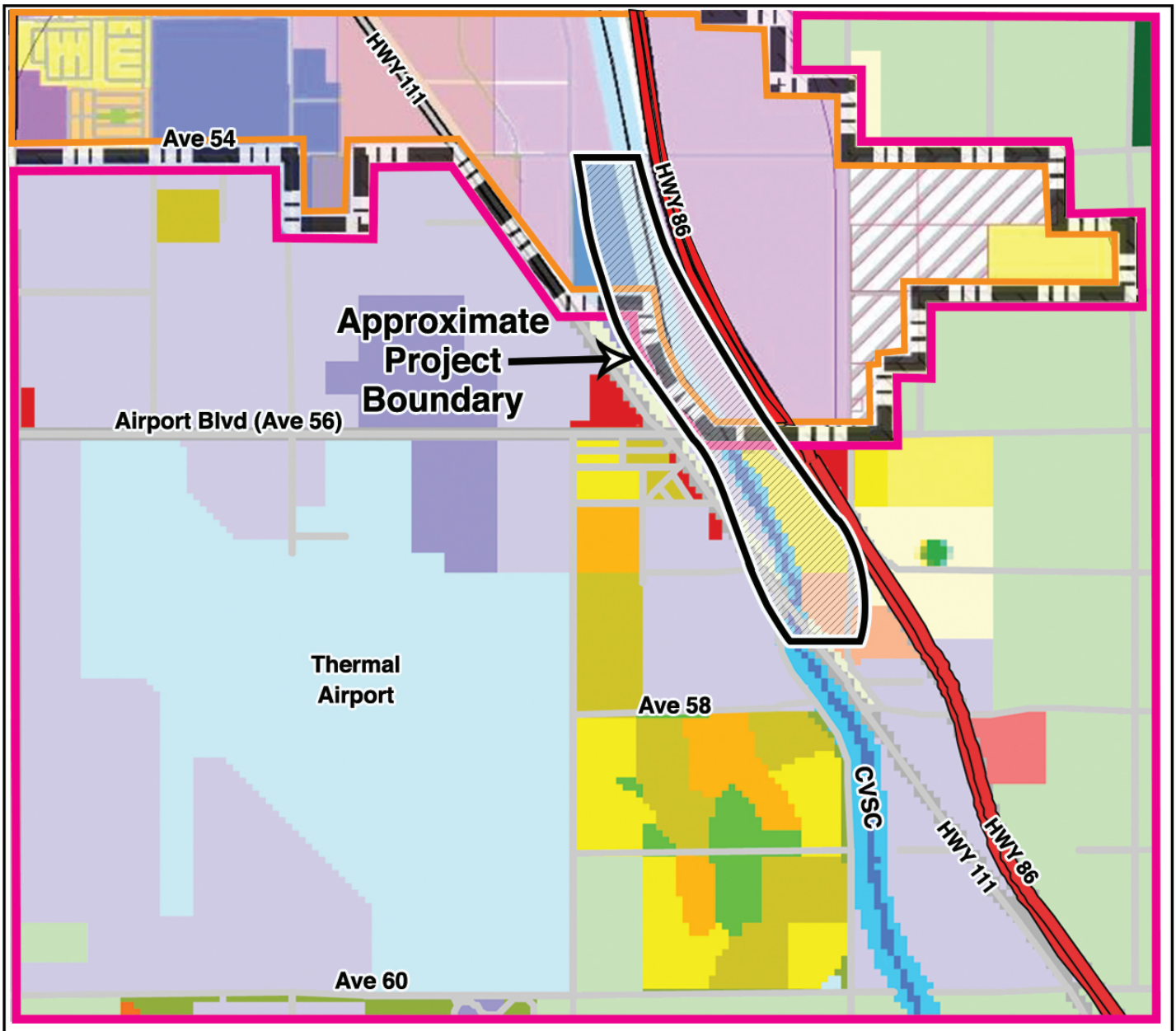
Table 2-13 Land Uses in the Project area

	Current Land Use	General Plan Land Use Designation
North	Channel / industrial / agricultural / vacant lands	Public Facilities, Light Industrial, Agriculture
East	Hwy 86 / vacant lands / residential / agriculture / Union Pacific RR	Light Industrial, Medium Density Residential, Business Park, Ag
South	Channel / agriculture / vacant lands	Light Industrial, Agriculture
West	Wastewater treatment plant / light industrial / residential / school / agriculture / Union Pacific Railroad	Light Industrial, High Industrial, Commercial, Medium and Medium High Density Residential

2.12.5 Existing Conditions

The Coachella Valley Stormwater Channel is a manmade extension of the Whitewater River Stormwater Channel and extends from the vicinity of Washington Street in La Quinta on the west to the Salton Sea on the southeast. The CVSC passes through lands that are in various states of urban and agricultural development, as well as, vacant/undeveloped land. In the immediate project vicinity, lands adjoining the project site north of Airport Boulevard are limited to lands in active cultivation on the east and in conservation (Highway 86 mitigation lands), while lands on the west include the Coachella wastewater treatment plan, a solar energy array, ag-industrial uses and limited vacant lands. Coachella lands adjoining the project area are designated as *Industrial*.

Lands in the project vicinity and south of Airport Boulevard include a small (20± unit) mobile home park at the southeast corner of Airport Boulevard and the channel and a Highway 86 interchange the highway to the immediate east, and IID electric power substation, mostly small holdings of agricultural lands in both fallow and cultivated states, scattered single family residential, the 13± unit Campos Mobilehome Park off of Desert Cactus Drive, incidental ag-equipment storage, and the bridges of Airport Boulevard (Ave 56), State Highway 111, and the Union Pacific Railroad. County lands adjoining the project area are designated for *Low Density Residential*, *Agriculture*, and *Light Industrial.*



Riverside County General Plan Land Use

- Estate Density Residential
- Very Low Density Residential
- Low Density Residential
- Medium Density Residential
- Medium High Density Residential
- High Density Residential
- Very High Density Residential
- Commercial Retail
- Commercial Tourist
- Highways
- Light Industrial
- Heavy Industrial
- Business Park
- Public Facilities
- Rural Community - Estate Density Residential
- Rural Desert
- Agriculture
- Conservation Habitat
- Open Space Recreation
- Water

Coachella General Plan Land Use

- Downtown Center
- Urban Employment Center
- Neighborhood Center
- Suburban Retail District
- Industrial District
- General Neighborhood
- Suburban Neighborhood
- Public Facilities
- Coachella Vineyards Specific Plan
- Coachella City Limits

Airport Compatibility Zones

- Zone A
- Zone B1
- Zone B2
- Zone C
- Zone D
- Zone E

N

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Source: Coachella General Plan 2015; Riverside County General Plan 2015

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Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
General Plan Land Use Map
Coachella Valley Water District

WATER DISTRICT

Exhibit

2-9

2.12.6 Project Impacts

This analysis evaluates the potential for land use impacts, including short-term impacts on existing land uses that could result from temporary construction activities, and long-term impacts that could result from the construction, operation, and maintenance of the subject channel segment. This section analyzes the relationship between this portion of the CVSC and the land use conditions during construction and operation, as well as the project's consistency with local planning documents. Local planning documents and maps, described above, were reviewed and site surveys were conducted to characterize existing land uses on and adjacent to the project area. Applicable plans and policies were reviewed to determine their applicability to the project and whether the proposed channel improvements would be consistent with the relevant policy, plan, or regulation.

CEQA requires an analysis of the potential of the conflict between the project and an applicable land use plan, policy or regulation of an agency with jurisdiction over the project that has been adopted for the purpose of avoiding or mitigating an environmental effect. There are several land use plans relevant to the proposed channel improvement project. These are considered and evaluated below.

Channel Project Impacts and Thresholds of Significance

The following discusses the channel improvement project in the context of applicable thresholds of significance. The responses to these threshold questions are based in part upon the Proposed Project and extensive analysis of existing and planned land uses. It is also based upon the project description, assessments of existing conditions and the above analysis of potential impacts. In this regard, will the Proposed Project:

a) Physically divide an established community?

Less than Significant Impact. The CVSC Proposed Project will be constructed primarily within the existing CVSC channel cross-section and atop the existing flood control channel maintenance roads. The channel already serves to divide the communities to some degree, but connectivity between lands to the east and west will continue to be well provided by Airport Boulevard, Highway 111 and Cactus Drive. It is also important to note that Highway 86 constitutes a more significant physical division of lands in this area. During the construction phase, access to one mobile home park and adjacent lands could be temporarily disrupted by channel construction activities and short-term lane closures or detours. Mitigation Measure TRA-1 addresses and will preclude these potential impacts.

In light of the scope, scale and location of the proposed channel improvements there is no potential for the construction of the project to divide or isolate parts of an established community. The subject channel alignment does not traverse or physically divide an established community. Impacts would be less than significant.

Utility Projects
The proposed utility relocation projects will primarily occur on lands previously disturbed by roadways, service roads, and utility structures. No utility relocation will traverse or physically divide an established community. There will be no impacts.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less than Significant Impact. CVWD is the Lead Agency for this project and has sole jurisdiction over the subject channel improvement project. Total length of the subject channel segment is approximately two miles. The Proposed Project is consistent with and implements goals, policies and programs of both the County and Coachella General Plans.

It is also consistent with CVWD's current Draft *East Coachella Valley Stormwater Master Plan* (2017). The project also protects existing lands, improvements and homes that are currently subject to damage in the event of a 100-year storm, and protects and makes possible the development of additional lands without the threat of flood damage in such an event. Once constructed, the subject channel improvements will also remove lands from the need for flood insurance coverage.

In summary, potential short-term land use conflicts between the channel improvement project and adjoining lands will be minimal and less than significant. Post-construction, the Proposed Project will facilitate implementation of land use and other policies set forth in the County and Coachella General Plans. Therefore, the project will not result in a significant conflict with any applicable land uses, land use designations, or other land use plan, policy, or regulation. Impacts would be less than significant.

Utility Projects
The utility relocation projects will not result in a change to, or interfere with any applicable land uses, land use designations, or other land use plan, policy, or regulation. All relocations will be in close proximity to their respective impact areas. Impacts would be less than significant.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

Less than Significant with Mitigation. The subject analysis is also supported by the Biological Resource Assessment Report and Coachella Valley Multiple Species Habitat Conservation Plan Compliance Analysis, provided in Appendix C. Approximately 50 sensitive biological resources, including individual species, have been identified with the potential to occur in the project vicinity, of which 18 have been determined to be absent, including all of the plant species, the cheeseweed owlfly, the razorback sucker, Coachella Valley fringe-toed lizard, and the Colorado Valley woodrat.

Of the remaining 32 species, seven are fully covered and conserved by the CVMSHCP: desert pupfish, flat-tailed horned lizard, southwestern willow flycatcher, least Bell's vireo, western yellow bat, Palm Springs pocket mouse, and Coachella Valley (Palm Springs) round-tailed ground squirrel. One sensitive species that occurs in the project planning area is the burrowing owl, which is a covered species under the CVMSHCP; the federal permit for the CVMSHCP does not allow take of this species under the MBTA. This species nests and roosts underground and is particularly vulnerable to ground disturbing activities.

Neither the County of Riverside nor the City of Coachella have local ordinances protecting biological resources. Both jurisdictions and CVWD are signatories to and participate in the implementation of the CVMSHCP. The CVMSHCP recognizes the importance of maintaining regional flood control facilities and makes provision for such maintenance in Conservation Areas.[115] The Proposed Project is located outside of a CVMSHCP Conservation Area. As a Permittee under the CVMSHCP, CVWD must comply with all applicable terms and conditions of the CVMSHCP and Implementing Agreement (See Section 13.0 of the CVMSHCP Implementing Agreement). This includes, but not limited to, implementation of "Land Use Adjacency Guidelines", where applicable.

[115] Coachella Valley Multiple Species Habitat Conservation Plan, Section 7.3.1.1: Covered Operation, Maintenance, and Safety Activities within Existing Rights-of-Way or Easements.

Compliance with the mitigation measure presented below (also see Mitigation Measures BIO-1, BIO-2, BIO-4, and BIO-10 through 12 in Section 2.5) including compliance with all requirements of the CVMSHCP, will ensure that the CVSC improvement project will not conflict with any local policy, ordinance, or Habitat Conservation Plan. Therefore, with mitigation, impacts will be less than significant.

Utility Projects
For all utility projects, compliance with the mitigation measure presented below (also see Mitigation Measures BIO-1, BIO-2, BIO-4, and BIO-10 through 12 in Section 2.5) including compliance with all requirements of the CVMSHCP, will ensure that the utility relocations will not conflict with any local policy, ordinance, or Habitat Conservation Plan. Therefore, with mitigation, impacts will be less than significant.

2.12.7 Mitigation Measures

LU-1 Construction Staging
Construction activities shall be staged at least 100 yards from residential land uses. Construction activities that have the potential to affect safety, privacy, structures or landscaping, are to be minimized to the greatest degree practicable through standard Best Management Practices.

Issues associated with potential conflicts with existing recreational facilities are addressed in Section 2.16, Recreation al Resources.

2.12.8 Significance After Mitigation

The channel improvement project will have beneficial effects on land uses and long-term land use plans in the project area. Potential land use impacts will be limited to temporary access, will occur only during construction and will be of short duration. With the implementation of the mitigation measure above, impacts associated with land use and land use compatibility will be less than significant.

2.12.9 Cumulative Impacts

As described herein, the majority of the proposed channel improvement project will occur within CVWD rights-of-way with most limits of disturbance occurring in areas that are currently periodically disturbed as part of regular channel maintenance. Any cumulative project impacts related to land use would be typical of the land uses in the cumulative study area but the subject project would not have an adverse long-term or permanent effect on the character of the vicinity. The geographic scope for the analysis of cumulative impacts on land use consists of each project area and the immediate vicinity around each of these sites where adverse land use impacts could occur. There are no potential project conflicts or inconsistencies with applicable adopted plans, policies and regulations, and the project would not combine with others to result in a substantial cumulative impact. Given the nature and physical extent of the project, construction will be carried out in stages and its effects will be short-lived. During the operation and maintenance of the improved channel facility, the surrounding land uses will benefit and flooding conditions on adjoining lands will be enhanced by the project. In the overall, there will be a less than cumulatively substantial effect on existing and planned land uses generated by this project.

2.13 Mineral and Energy Resources

2.13.1 Introduction

This section of the EIR describes existing conditions with regard to mineral and energy resources within the CVSC Improvement Project planning area and analyzes the potential impacts of the project on these resources. The region is important in terms of both construction-related mineral resources and in the production of energy from renewable resources. Mineral resources are largely associated with fluvial deposits in the Indio Hills, Mecca Hills, and foothills of the Little San Bernardino Mountains. The Proposed

Project will depend on aggregate for its construction, insofar as much of the channel will be constructed with cement or similar products. A wide range of data and information, ranging from research to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects.

2.13.2 Thresholds of Significance

The following analysis criteria and thresholds are based on Appendix G and derived from Appendix F of State CEQA Guidelines. A project would have a significant impact relating to energy and mineral resources if it would:

a) Use large or excessive amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner?

b) Constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand?

c) Require or result in the construction or expansion of new electrical generation and/or transmission facilities, the construction of which could cause significant environmental effects?

d) Conflict with existing energy standards, including standards for energy conservation?

e) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

f) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

2.13.3 Regulatory Framework

Federal

No federal regulations relative to mineral and energy resources would be applicable to the proposed CVSC improvement project.

State

Surface Mining and Reclamation Act of 1975

The State Mining and Reclamation Act (SMARA) was enacted in 1975 in response to land use conflicts between urban growth and essential mineral production. In accordance with SMARA and as discussed below, the State has established the Mineral Land Classification System to help identify and protect mineral resources in areas that are subject to urban expansion or other irreversible land uses that would preclude mineral extraction. Protected mineral resources include construction materials, industrial and chemical mineral materials, metallic and rare minerals, and non-fluid mineral fuels.

Regional and Local

Climate Action Plan

Riverside County and the City of Coachella have adopted climate action plans that quantify the current level of GHG emissions in their respective jurisdictions and the approach and programs that will be pursued to reduce GHG emission in the long-term.[116,117] These plans provide more stringent energy reduction requirements than those currently in effect. The project will not to conflict with any applicable GHG plans, policies or regulations intended to reduce impacts associated with construction-related emissions.

[116] County of Riverside Climate Action Plan, 2015.
[117] City of Coachella Climate Action Plan, 2014.

2.13.4 Environmental Setting

The region is important in terms of both construction-related mineral resources and in the production of energy from renewable resources. Mineral resources are largely associated with fluvial deposits in the Indio Hills, Mecca Hills and foothills of the Little San Bernardino Mountains. Energy resources are becoming more distributed in the Valley, with wind turbine development focused in the San Gorgonio Pass area and geothermal at the south end of the Salton Sea. Solar photovoltaic systems are being developed throughout the Valley.

Mineral Resources

In the Coachella Valley, mineral resources are largely limited to aggregates such as sand, gravel, and crushed stone. These are major components of concrete, plaster, stucco, road base and fill, which are essential to the construction industry. There are important deposits of these materials that occur within the region and project vicinity that are being actively developed.

Other mineral deposits in the region are generally limited to rocky outcroppings within the Little San Bernardino and Santa Rosa Mountains and have not been mined. These resources include copper, limestone, specialty sands, and tungsten. There are decorative stone deposits that are being mined on public land in the Painted Hills area west of Desert Hot Springs, as well as clay deposits at the base of the Mecca Hills east of Thermal on public and private land. These may be used as an impermeable layer for lining landfills, ponds, and similar construction applications, and some of these deposits have been permitted for mining.

The California Department of Conservation Division of Mines and Geology (DMG) has prepared a report identifying aggregate materials in the 629± square mile Palm Springs Production-Consumption Region.[118,119,120] The report was part of a state-wide program to geologically delineate/classify aggregate resources in rapidly urbanizing areas. The report was prepared to determine quantities of available aggregate resources, and to evaluate the adequacy of permitted aggregate reserves for meeting the future needs of each region. The Palm Springs region contains 3.2± billion tons of aggregate resources.

The report assigned Mineral Resource Zone (MRZ) classifications to all lands within the region. MRZ classifications describe the location of significant PCC-grade aggregate deposits and are as follows.

MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. Includes Quaternary alluvial deposits of the central upper Coachella Valley, the Imperial Formation of the Indio Hills, Garnet Hill, the hills west of Whitewater River Canyon, and the Borrego Formation of the southeastern Coachella Valley.

MRZ-2: Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists. Includes the following areas: 1) Whitewater River floodplain extending from the Whitewater River Trout Farm to the City of Palm Springs, 2) San Gorgonio River floodplain from Cabazon to its confluence with the Whitewater River, 3) the river

118 "Draft Environmental Impact Statement for the California Desert Conservation Area Plan Amendment for the Coachella Valley," prepared by the U.S. Department of the Interior Bureau of Land Management, June 2002. Figure 2-7 Windparks and Sand and Gravel Mining.

119 "Mineral Land Classification: Aggregate Materials in the Palm Springs Production-Consumption Region," prepared by the California Department of Conservation Division of Mines and Geology, 1988.

120 The Palm Springs Production-Consumption Region generally extends from Cabazon on the west to Mecca on the east.

channel in the lower part of Little Morongo Canyon, 4) a small alluvial wash north of Thousand Palms, 5) the confluent alluvial fans of Berdoo and West Berdoo Canyons, 6) the alluvial fan of Fargo Canyon, 7) an alluvial fan north of Indio, and 8) an alluvial wash and fan east of Thermal.

MRZ-3: Areas containing mineral deposits, the significance of which cannot be evaluated from available data. Includes lands composed of Cabazon Fanglomerate, Ocotillo Conglomerate, Painted Hills Formation, Palm Springs Formation, Mecca Formation, and metamorphic rocks of the San Jacinto Mountains and the San Gorgonio Complex.

Lands within the CVSC project planning area are classified as MRZ-1,[121] indicating that no significant mineral resources occur or are expected to occur in this area. The Proposed Project area and much of the surrounding land is developed or otherwise unavailable for mining. The Coachella Valley has nearly a dozen permitted aggregate operations, which contain approximately 272 million tons of mineable aggregate.[122] These reserves are expected to meet the demand and provide adequate supply at current rates of consumption for approximately 130 years.

The construction of the proposed channel improvement project is estimated to require approximately 53,776 cubic yards (CY) of concrete and 25,948 CY of aggregate, materials that are in good supply in the Coachella Valley and which is locally mined at several locations. Therefore, total aggregate demand for the project is approximately 26,000 CY or 0.01% of permitted aggregate.

Energy Resources

The following discussion considers production and transmission facilities for each of the major energy sectors associated with and having facilities in the region. Energy sectors in the region include those associated with the movement of petroleum products, natural gas and electricity from their points of production to those of use.

Imperial Irrigation District (IID) provides electric power services to the planning area and most of the east valley. IID utilizes a combination of coal, natural gas, wind, hydroelectric, and geothermal power sources. IID has high-voltage transmission lines of up to 500 kilovolts across its service area and locally has several overhead lines within and near the project planning area. These include IID's K and K47 lines that parallel the channel and also cross the channel north of the Union Pacific Railroad bridges. IID also has a substation located just west of the channel and south of Airport Boulevard. The Proposed Project will not impact any of the energy resources upon which IID depends.

The Proposed Project will not generate impacts that would adversely affect energy resources. Specifically, the project will not use large or excessive amounts of fuel or energy or use energy in an unnecessary, wasteful, or inefficient manner. The project's construction will not constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand. The project will require the relocation of several IID power poles; however, their relocation will not cause significant environmental effects. Neither will the project conflict with existing energy standards, including standards for energy conservation.

[121] Figure OS-6 Mineral Resources Zones, Conty of Riverside General Plan, Multipurpose Open Space Element, 2015.

[122] Ibid.

2.13.5 Existing Conditions

Mineral Resources

The mountains and foothills surrounding the Coachella Valley have a history of mining that dates back to the late 1800s. Mines in the Santa Rosa and San Jacinto National Monument have produced gold, asbestos, beryllium, limestone, tungsten, copper, tourmaline, and garnet. With the exception of limestone, however, these mineral deposits have not been extensively mined, are limited, or are not precisely known.

The surrounding mountain ranges and eroding hills have filled the valley with deep and extensive deposits of sand and gravel, known collectively as aggregate. Aggregate is used for asphalt, concrete, road base, stucco, plaster, and other similar construction materials. The Palm Springs Production-Consumption (P-C) Region is a 631 square mile area in the Coachella Valley that is heavily mined for aggregate. [123,124,125] This region covers the area east of Cabazon, south of Morongo Valley and Joshua Tree National Park, west of the Mecca Hills, and north of the community of Mecca and the San Jacinto Mountains. According to California Geological Survey, the Palm Springs P-C Region has 30,072 acres classified as land where significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists. The Palm Springs region contains 3.2± billion tons of aggregate resources.

Lands within the CVSC project planning area are classified as MRZ-1,[126] indicating that no significant mineral resources occur or are expected to occur in this area. The Proposed Project area and much of the surrounding land is developed or otherwise unavailable for mining. The Coachella Valley has nearly a dozen permitted aggregate operations, which contain approximately 272 million tons of mineable aggregate.[127] These reserves are expected to meet the demand and provide adequate supply at current rates of consumption for approximately 130 years. Existing permitted sand and gravel operations located in the vicinity of the subject property include the following:

Indio Quarry/Indio Hills Fan: Sand and gravel is the mineral commodity excavated from the Indio Quarry. The subject resource area consists of a moderate sized deposit that is located within 750 acres of an alluvial fan adjacent to and immediately south of the Indio Hills. It is located in the CVMSHCP Indio Hills Palms Conservation Area. The deposit contains approximately 73 million tons of aggregate resource to an average depth of approximately 200 feet and includes aggregate meeting the specifications for making Portland cement concrete-grade aggregate. The Indio quarry is the largest producer of concrete (PCC)-grade aggregate material in the Palm Springs Production-Consumption (P-C) Region.

Thermal Area 1: In the Thermal area 1 are deposits on an alluvial fan and wash near the mouth of an unnamed canyon about three miles east of the community of Thermal and the project site. The area is located adjacent to the CVMSHC Mecca Hills/Orocopia Mountains Conservation Area. PCC-grade aggregate is produced in the upper and lower portions of this deposit. These lesser-quality deposits have a relatively high (65%) ratio of sand to gravel. The deposit is crossed by the Coachella Branch of the All-American Canal, and the southwesterly deposit is now inactive.

Thermal Area 2: Another approved and active quarry in this area encompasses 120± acres and is a source of PCC-grade aggregate and clay deposits occurring on adjoining alluvium. Permitted in 1995-96, this site is located within the CVMSHCP Mecca Hills/Orocopia Mountains Conservation Area and is east of the Coachella Branch Canal and the mining area described immediately above.

123 Op cit. (BLM 2002..
124 Op cit. CA Mines and Geology. 1988..
125 The Palm Springs Production-Consumption Region generally extends from Cabazon on the west to Mecca on the east.
126 Figure OS-6 Mineral Resources Zones, Conty of Riverside General Plan, Multipurpose Open Space Element, 2015.
127 Ibid.

Naturally occurring mineral deposits are nonrenewable resources that cannot be replaced once they are depleted. The primary mineral resources within the Coachella Valley are aggregates such as sand, gravel, and crushed stone. Other mineral deposits in the region are generally limited to rocky outcroppings within the Little San Bernardino and Santa Rosa Mountains and have not been mined. These resources include copper, limestone, specialty sands, and tungsten. There are decorative stone deposits that are being mined on public land in the Painted Hills area west of Desert Hot Springs, as well as clay deposits at the base of the Mecca Hills east of Thermal on public and private land. These may be used as an impermeable layer for lining landfills, ponds, and similar construction applications, and some of these deposits have been permitted for mining.

Energy Resources
The following discussion considers production and transmission facilities for each of the major energy sectors associated with and having facilities in the region and/or project vicinity. Energy sectors in the region include those associated with the movement of petroleum products, natural gas and electricity from their points of production to those of use.

Electrical Power: In the Coachella Valley, Southern California Edison (SCE) and the Imperial Irrigation District (IID) provide electric power services. IID serves those portions of the valley generally east of Washington Street, including the project planning area. IID utilizes a combination of coal, natural gas, wind, hydroelectric, and geothermal power sources, most of which are located outside the valley. In the project planning area, IID has high-voltage transmission lines of up to 500 kilovolts across its service area and locally has several overhead lines within and near the project planning area. These include IID's K and K47 lines that parallel the channel and also cross the channel in the vicinity of the Airport Boulevard bridges. IID also has a substation located just west of the channel and south of Airport Boulevard. The Proposed Project will not impact any of the energy resources upon which IID depends but will require the relocation of several power and support poles in the vicinity of Irrigation Lateral 99.8 (see Section 2.19 for a discussion of potential project impacts on utility facilities). The Coachella municipal water reclamation site has been partially developed as a photovoltaic electric power array and is located immediately west of the channel and north of Airport Boulevard.

Natural Gas: Natural gas is found in association with petroleum deposits. It is generally considered a clean and efficient fuel. The region contains no retrievable sources of natural gas. The Southern California Gas Company (Sempra Energy) provides natural gas service to much of the Coachella Valley, including the project planning area. Natural gas supplies are transported from Texas to the Coachella Valley through three east-west trending gas lines, which cross the Valley near and parallel to Interstate-10, and continue west to Los Angeles. The Gas Company facilities in the planning area include an 8-inch high-pressure line crossing beneath the channel south of Highway 111 and a 4-inch gas line that crosses beneath the channel in the vicinity of Avenue 54 and within the project planning area. The 8-inch line will require relocation as part of the Project.

Petroleum Products
A 20-inch Kinder Morgan petroleum pipeline that extends from approximately 200 feet upstream and 200 feet downstream of the channel, between Highway 111 and the UPRR lines.

2.13.6 Project Impacts

Construction Energy Demand
Construction related energy demand comes from the operation of construction equipment and the manufacture of construction materials. While it is challenging to calculate actual energy demand for construction equipment operations, it is possible to calculate the embodied energy in the concrete that will be needed for this project.

The embodied energy of concrete is dominated by production of Portland cement, which involves calcium (usually limestone) and silicon (such as clay or sand). This process converts calcium carbonate into calcium oxide. Calcium carbonate is heated at high temperature (900-1650^{0}C) to allow the release of a carbon dioxide molecule from the calcium carbonate forming calcium oxide, which is mixed with other materials to form clinker. This is then combined with gypsum to create cement. Other individual components of concrete production, such as mixing and processing, consume much less energy than cement production.

Much like asphalt, the embodied energy of concrete includes the extraction, crushing, and stockpiling of aggregate. However, concrete production does not require aggregates to be dried prior to mixing. Estimates of embodied energy for concrete are typically around one megajoule per kilogram of concrete produced. Typical electrical energy consumption is of the order of 40-45 kwh per ton of cement produced[128], with two tons per cubic yard yields a power demand of approximately 80 to 90 kwh per cubic yard of concrete.

According to design plans for the Proposed Project, the project will require up to 54,000 cubic yards of concrete, which implies a potential energy demand ranging from 4.32 million kwh to 4.86 million kwh. It should also be noted[129]that the method of concrete manufacturing can greatly reduce the embodied energy in concrete, including the use of recycled concrete.

Operational Energy Demand
On-going operation and maintenance of the subject channel segment will typically generate a low demand for energy, that demand being associated with regular site visits and inspections, periodic access and channel grading and vegetation management, and hauling. Standard fossil fuels are expected to be the primary energy source for the foreseeable future to run utility and water trucks, grading and hauling equipment. However, energy use associated with these ongoing activities will be de minimis and will generate a very low demand for energy resources.

Mineral Resources Demand
As noted above, the construction of the proposed channel improvement project is estimated to require approximately 53,776 cubic yards (CY) of concrete and 25,948 CY of aggregate. Therefore, total aggregate demand for the project is approximately 26,000 CY or 0.01% of permitted aggregate.

a) Would the Project use large or excessive amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner?

Less than Significant Impact. Limited amount of fossil fuels will be used for the construction equipment at the site, which will be used by utility trucks, water trucks, graders and compactors, concrete and other haul trucks and ancillary equipment. The type and number of pieces of equipment to be involved in the channel's improvements has been evaluated by the project engineers and those data have been used to conduct air quality and other analysis. Construction information and project-specific assessment were used to estimate gasoline and/or diesel fuel consumption on the construction site. The project's energy demand will be temporary and ends with completion of the proposed channel improvements. The project is not expected to result usage of large or excessive amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner and energy demand will be de minimis once construction is completed. Less than significant impact is anticipated.

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128 US Concrete. 2016. Slag cement requires nearly 90 percent less energy to produce than an equivalent amount of Portland cement. Reducing the use of Portland cement in concrete by substituting a portion of it with slag reduces the embodied energy in a cubic yard of concrete by 30 to 48 percent. Concrete containing ground granulated slag develops strength over a longer period, leading to reduced permeability and more durability properties. Since the unit volume of Portland cement will also be reduced, concrete is less vulnerable to alkali-silica and sulfate attack.

129 Ibid.

Utility Projects
As with the channel improvement portion of the Project, the utility relocations will only require energy during the construction period. The utility facilities will not, in and of themselves, result in the usage of large or excessive amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner and energy demand will be de minimis once construction is completed. Less than significant impact is anticipated.

b) Constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand?

No Impact. During construction, the project would require electricity to serve construction trailers, power tools, work and storage areas, de-watering equipment and other facilities and equipment associated with development activities. Electricity would be expected to be supplied by gasoline, propane, or diesel-powered generators with minimal or no reliance on the electrical grid. Overall, electricity consumption that would be required during construction would be limited and temporary. Therefore, construction activities associated with buildout of the project would not create electrical system capacity problems or result in the construction of new or expanded electricity facilities. As a majority of the construction activities would not draw power from the local electrical grid, impacts on available electricity supplies would be less than significant.

Once constructed, the CVSC improvement project [site] will not require any grid-sourced electricity. Gasoline and diesel fuels are in ready supply and are expected to be so for the foreseeable future. Therefore, overall demand will be limited and temporary and would not constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand. No impact is anticipated.

Utility Projects
Energy required during utility relocation activities would be limited and temporary. The majority of construction activities would not draw power from the local electrical grid, and impacts on available electricity supplies would be less than significant.

Once constructed, utility facilities will not require any grid-sourced electricity. Therefore, overall demand will be limited and temporary and would not constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand. No impact is anticipated.

c) Require or result in the construction or expansion of new electrical generation and/or transmission facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact. As noted above, construction of the project will result in a temporary, and less than significant demand for electrical power. At buildout, the project will not require any grid-sourced electricity; rather, electric power will be provided by free-standing gasoline or diesel generators. Gasoline and diesel fuels are in ready supply and are expected to be so for the foreseeable future. At buildout, the project will not result in electrical demand. Overall, the project will not require or result in the construction or expansion of new electrical generation and/or transmission. Less than significant impact is anticipated.

Utility Projects
As noted above, construction of the project will result in a temporary, and less than significant demand for electrical power. At buildout, the project will not require any grid-sourced electricity. Overall, the project will not require or result in the construction or expansion of new electrical generation and/or transmission. Less than significant impact is anticipated. No impact is anticipated.

d) Conflict with existing energy standards, including standards for energy conservation?

No Impact. There are no standards for energy conservation related to construction of flood control facilities applicable to the Proposed Project. Contractors bidding on the Proposed Project are expected to incorporate energy management practices in their proposal and work as a function of cost control. The project's energy consumption will be limited, and much of the project's energy will be embedded in channel concrete providing long-term return on this energy investment. Energy investment will largely end with completion of construction, and neither construction nor operation of the project will conflict with any current energy standards or conservation goals.

Utility Projects
There are no standards for energy conservation related to the relocation of utility facilities. Upon completion of the relocation activities, the utility facilities will have no demand for energy. Neither construction nor operation of the project will conflict with any current energy standards or conservation goals.

e) Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Less than Significant Impact. As noted above, lands assessed for their resource potential within the Project planning area are classified as MRZ-1,[130] indicating that no significant mineral resources occur or are expected to occur in this area. The construction of the Proposed Project would require approximately 22,200 to 27,750 CY of aggregate. With approximately 272 million tons of mineable aggregate currently permitted in the Coachella Valley, the project's total aggregate demand is approximately 0.01% of permitted aggregate at all operating mining operations in the valley. The impact of the project on the availability of the sand and gravel resource would not be significant because the volume of material already permitted for mineral extraction in the valley is sufficient to meet demand for approximately 130 years at current rates of consumption. The Proposed Project, including the utility relocation projects, will not physically affect these mineral resources. The Project's impact on the known mineral resources would be less than significant.

f) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. As noted above, lands assessed for their resource potential within the Project planning area are classified as MRZ-1,[131] indicating that no significant mineral resources occur or are expected to occur in this area. The Project is not located close to known locally important mineral resource recovery site delineated on a local general plan. No impact is anticipated.

Utility Projects
No utility relocation will occur near known locally important mineral resource recovery site delineated on a local general plan. No impact is anticipated.

2.13.7 Mitigation Measures

No mitigation measures and monitoring programs are required.

2.13.8 Significance After Mitigation

There will be less than significant impacts to energy and mineral resources as a consequence of the construction of this project.

130 "Mineral Land Classification: Aggregate Materials in the Palm Springs Production-Consumption Region," prepared by the California Department of Conservation Division of Mines and Geology, 1988.
131 Ibid.

2.13.9 Cumulative Impacts

As the Coachella Valley continues to grow, cumulative demand for energy resources will also continue to increase. The demand for energy at the completion of the Proposed Project would not trigger the need for new electrical or natural gas generation facilities, as it will generate its electric power needs from portable equipment rather than from the utility grid. The project's contribution to a cumulative impact on energy resources would not be cumulatively considerable. Buildout of channel improvements would not directly or indirectly induce growth in the project area or the region, which might increase energy use in the long-term, because it will not result in additional residential units, businesses or increased population.

As development in the valley continues, the demand for mineral resources will also continue to expand. The Proposed Project will result in a demand for about 0.01% of the total permitted aggregate currently permitted for extraction in the Coachella Valley. Other construction projects, particularly those requiring foundations, concrete and stucco for structures such as homes and commercial buildings, will collectively result in a much higher demand for aggregate than that created by the Proposed Project. Although the aggregate required for the Proposed Project will contribute to the continued reduction in this material, the Proposed Project will not be cumulatively considerable.

2.14 Noise

2.14.1 Introduction

This section of the EIR describes existing conditions with regard to the local noise environment within the CVSC Improvement Project area and analyzes the potential impacts of the project to surrounding sensitive receptors. Construction of the project will take place adjacent to noise-sensitive residential land uses and, therefore, represents a temporary, short-term noise level increase on the existing ambient noise environment. A wide range of data and information, ranging from research to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects.

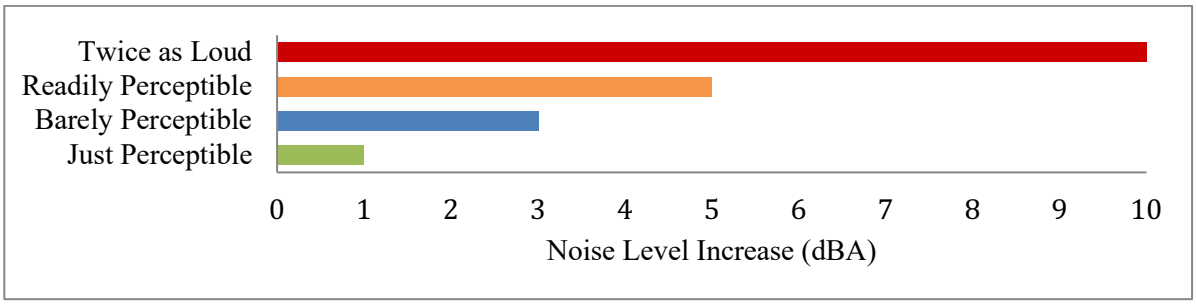
Noise Fundamentals

The discussion describes terminology associated with noise measurements. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10. Measuring intensity using the decibel scale, each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud.

The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA at approximately 100 feet, which can cause serious discomfort. An increase or decrease of 1 dBA cannot be perceived except in carefully controlled laboratory experiments, a change of 3 dBA are considered barely perceptible, and changes of 5 dBA are considered readily perceptible[132].

[132] U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch, June, 1995

Noise Level Increase Perception



Another important aspect of noise is the duration of the sound and the way it is described and distributed in time. To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors L_{50}, L_{25}, L_8 and L_2, are commonly used. The percentile noise descriptors are the noise levels equaled or exceeded during 50 percent, 25 percent, 8 percent and 2 percent of a stated time. Sound levels associated with the L_2 and L_8 typically describe transient or short-term events, while levels associated with the L_{50} describe the steady state (or median) noise conditions. Most noise codes rely on percentile noise levels to describe the stationary source noise level limits. While the L_{50} describes the mean noise levels occurring 50 percent of the time, the Leq accounts for the total energy (average) observed for the entire hour. Therefore, the Leq noise descriptor is generally 1-2 dBA higher than the L_{50} noise level.

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24- hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 5 decibels to dBA Leq sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA Leq sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. CNEL does not represent the actual sound level heard at any particular time, but rather represents the total sound exposure. The local cities and the County rely on the 24-hour CNEL level to assess land use compatibility with most noise sources.

2.14.2 Thresholds of Significance

Standards and guidelines establishing thresholds of significance have been taken from Appendix G: of the California Environmental Quality Act (CEQA). The following factors have been considered in analyzing potential noise-related impacts that can result from the construction of the subject channel improvements. Project impacts associated with noise are considered significant if the project would result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels;

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

2.14.3 Regulatory Framework

Federal

There are no federal regulations that apply to the proposed CVSC improvement project.

State

California Noise Control Act

The State Guidelines were published in 1976 as a requirement of Health and Safety Code Section 46050(g), also known as the California Noise Control Act.[133] The guidelines recommend acceptable exterior noise levels for various land uses. Under the State Guidelines, an exterior noise level of 70 dBA Ldn/CNEL is typically the dividing line between an acceptable and unacceptable exterior noise environment for all noise-sensitive uses, including schools, libraries, churches, hospitals, day care centers, and nursing homes of conventional construction. Noise levels below 75 dBA Ldn/CNEL are typically acceptable for office and commercial buildings, while levels up to 80 dBA Ldn/CNEL are typically acceptable for industrial uses. Section 65302(f)(1) of the California Government Code requires that each jurisdiction recognize the State Guidelines while preparing its general plan; however, the California Government Code does not mandate application of the compatibility matrix to development projects.

Regional/Local

County of Riverside General Plan

The County's General Plan Noise Element relies on CNEL standards, consistent with other jurisdictions in the Coachella Valley. Relevant policies of the Noise Element include:

Policy N 1.5: Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.

Policy N 2.3: Mitigate exterior and interior noises to the levels listed in the table below to the extent feasible, for stationary sources.

Policy N 4.3: Ensure any use determined to be a potential generator of significant stationary noise impacts be properly analyzed, and ensure that the recommended mitigation measures are implemented.

Policy N 13.1: Minimize the impacts of construction noise on adjacent uses within acceptable practices.

[133] These guidelines are most currently published by California Governor's Office of Planning and Research in State of California General Plan Guidelines, Appendix C: Guidelines for the Preparation and Content of the Noise Element of the General Plan, Office of Planning and Research, 2017.

Policy N 13.2: Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.

Policy N 13.4: Require that all construction equipment utilize noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

Policy N 16.2: Consider the following land uses sensitive to vibration: hospitals, residential areas, concert halls, libraries, sensitive research operations; schools; and offices.

Table 2-14 Stationary Source Land Use Noise Standards*

Land Use	Interior Standards	Exterior Standards
Residential		
10 p.m. to 7 a.m.	40 L_{eq} (10 minute)	45 L_{eq} (10 minute)
6 a.m. to 10 p.m.	55 L_{eq} (10 minute)	65 L_{eq} (10 minute)
* These are only preferred standards; final decision subject to County jurisdiction are made by the Riverside County Planning Department and Office of Public Health.		

It should be noted that capital improvement projects of a governmental agency (such as CVWD) are exempt from County Noise Ordinance No. 847 as set forth in Section 2 of that Ordinance.

Coachella's Municipal Code

The City's Municipal Code Title 7 establishes noise control standards for sensitive and non-residential structures. Construction activities are exempt from the noise standards, as long as they comply with permitted days and hours of construction described in Section 7.04.070 of the Municipal Code. Between October 1st and April 30th, construction is permitted Monday through Friday from 6:00 am to 5:30 pm, and Saturday, Sunday, and Holidays from 8:00 am to 5:00 pm. Between May 1st and September 30th, construction is permitted Monday through Friday from 5:00 am to 7:00 pm, and Saturday, Sunday, and Holidays from 8:00 am to 5:00 pm.

Coachella General Plan

The Noise Element of the Coachella General Plan establishes goals, policies, and programs intended to protect sensitive land uses from exposure to excessive noise levels within its jurisdictions. It includes a Land Use/Noise Compatibility matric that defines "normally acceptable," "conditionally acceptable," and clearly "unacceptable" noise limits based on the California Department of Health Services "Guidelines for the Preparation and Content of the Noise Element of the General Plan" (1990). "Normally acceptable" noise limits for residential land uses (single- and multi-family, duplex, and mobile homes) are up to 60 dBA CNEL. "Normally acceptable" noise limits for commercial land uses (office building, research and development, utilities, and City office building) are up to 70 dBA CNEL. "Normally acceptable" noise limits for agriculture land uses are up to 80 dBA CNEL.[134] Each of these land uses occurs in the Project area.

Local jurisdictions also apply restrictions to construction hours, which have a direct relationship to the noise generation of construction activities. Coachella's and the County's construction hour restrictions are shown in Table 2-15.

[134] Figure 10-1: Coachella General Plan 2015.

Table 2-15
Construction Noise Standards

Jurisdiction	Municipal Code Section(s)	Permitted Hours of Construction Activity		Construction Activity Exempt from Noise Standards?	Construction Noise Level Standards
County of Riverside	9.52.020	6 a.m. to 6 p.m. June to September; 7 a.m. to 6 p.m. October to May		Yes	n/a
Coachella	7.04.070	*October 1st to April 30th* 6 a.m. to 5:30 p.m. Mondays to Fridays	*May 1st to September 30th* 5 a.m. to 7 p.m. Mondays to Fridays	Yes	n/a
		Prohibited 8 a.m. to 5 p.m. Saturdays, Sundays, and holidays			

"n/a" = Jurisdiction's municipal code does not specify specific construction noise level standards.

Riverside County Airport Land Use Compatibility Plans

The proposed channel improvement project is located less than 2 miles from Jacqueline Cochrane Regional Airport. The airport is under the jurisdiction of the County's Airport Land Use Commission, which has adopted standards for acceptable noise levels associated with aircraft noise. For sensitive land uses, including parks and playgrounds, "clearly acceptable" exterior noise levels are those below 55 dBA CNEL, "normally acceptable exterior noise levels are up to 65 dBA CNEL, and "marginally acceptable" exterior noise levels are those between 65 to 70 dBA CNEL due to aircraft noise. The channel in its current and improved state is not a receptor sensitive to airport noise impacts.

Vibration

In addition to elevated noise levels, construction activities can also result in higher levels of vibration. Vibration is defined as the periodic movement of mass over time, and is described in units of velocity (inches or millimeters per second). It is discussed in decibel (dB) units in order to compress the range of numbers required to describe vibration. The human threshold of perception for vibration is 65 Vdb, or 0.0018 inches/second, and is not usually significant until 70 Vdb, or 0.0031 inches/second. Typical levels of ground vibration range between 50 Vdb and 100 Vdb. Vibration caused by heavy truck traffic is generally around 65 Vdb. In comparison, construction related vibration can range between 90 Vdb and 100 Vdb.

The effects of ground-borne vibration generally include movement of building floors, rattling of windows, and rumbling sounds. Ground-borne vibrations associated with construction attenuate rapidly as one moves away from the source. According to Caltrans, vibration caused by truck traffic attenuates to below perception levels at distances greater than 130 feet. The County has specific standards for construction vibrations, but Coachella does not. Table 2-16 provides a summary of these standards, and also includes the Caltrans standard for reference and comparison.

Table 2-16
Construction Vibration Standards

Jurisdiction	Municipal Code Section(s)	Construction Vibration Standards
Caltrans	Transportation- and Construction-Induced Vibration Guidance Manual	**Building Damage:** 0.12 in/sec PPV* **Human Annoyance:** 0.01 in/sec PPV
County of Riverside	County of Riverside General Plan Noise Element, Policy 16.3	0.01 in/sec RMS (0.254 mm/sec RMS)
Coachella	n/a*	n/a

***Notes:** "PPV" = Peak Particle Velocity; "RMS" = Root-Mean-Square;
"n/a" = Jurisdiction's municipal code does not specify specific construction noise level standards.

Vibratory equipment planned for use in this project is expected to be limited to vibrator plate compactors, which can generate noise levels as high as 104 dBA and vibratory impulses of 25 to 31 mm/second at the source.[135] Ground bourn vibration can fall off quickly with distance, dropping to about 6 mm/second (0.23 inch/sec) at 15 meters (49.2 feet) from the source and can also be further reduced by "soft site" conditions as is the case with the soils in the channel. There are some uncertainties associated with soil conditions and surrounding structures that might influence wave propagation. Therefore, the soils being compacted will act to absorb some of the vibratory energy of the compactor. This type of noise source is considered to be "continuous/frequent" as opposed to transient.

2.14.4 Environmental Setting

Excessive and/or sustained noise, including ground-born noise and vibration, can contribute to both temporary and permanent physical impairments, such as hearing loss and increased fatigue, as well as stress, annoyance, anxiety, and other psychological reactions in humans. The evaluation and mitigation of noise in a community is essential to protecting the health and welfare of the general public, and preserving the inherent value of recreation, open space and conservation lands. Furthermore, it can help define the need for additional remedial measures, which mitigate noise problems.

Noise Rating Scales

The most common unit used to measure noise levels is the A-weighted decibel (dBA), which is a measurement of the noise energy emitted from a monitored noise source. The A-weighted frequency scale has been adjusted to correlate noise or sound to the hearing range of the human ear, and ranges from 1.0 dBA at the threshold of hearing, to 140 dBA at the threshold of pain. The quiet rustling of leaves typically measures approximately 10 dBA, a normal conversation at 5 feet measures 55 dBA, and a jet taking off at 200 feet measures 125 dBA. See Table 2-17 below.

Other noise rating scales utilize measurements that are weighted and averaged over time. The Single Event Noise Exposure Level (SENEL) measures a single noise event in decibels. The equivalent sound level (Leq) converts sound which varies over time, to a constant level that emits the same amount of acoustic energy. The day-night average sound level (Ldn) measures the cumulative noise exposure of a community, and accounts for the subjective annoyance of noises that occur during normal sleeping hours. Ldn measurements

[135] Hoe, H., Curtin University, "Measurement of plate compaction-induced ground vibrations". Southern Cross University. 2014.

combine hourly noise measurements over a 24-hour period, and apply a weighting penalty factor to those measurements occurring between 10:00 p.m. and 7:00 a.m. Community Noise Equivalent Levels (CNEL) include weighting penalty factors for noises that occur during nighttime hours (10:00 p.m. to 7:00 a.m.) and evening hours (7:00 p.m. to 10:00 p.m.).

Land Use Compatibility

Elevated Ambient noise levels can have a direct impact on the desirability of parks and open space, residential and other use of lands by the community and businesses, and can negatively affect their long-term social and economic viability. For this reason, land use compatibility with the surrounding noise environment is one of the most important aspects of a noise impact analysis. This includes the identification of sensitive receptors that are particularly sensitive to noise intrusion, such as residences, schools, libraries, churches, hospitals and other health care facilities, and nursing homes. Day care centers, parks, and other outdoor recreation and conservation areas may also be considered sensitive receptors. Moderately sensitive land uses include cemeteries, golf courses, country clubs, hotels and motels, and dormitories. The least sensitive uses include commercial and industrial developments, heavy manufacturing facilities, agricultural lands, parking lots, warehousing operations, and transit terminals. Noise standards have been developed by a variety of agencies to help reduce noise impacts to sensitive receptors and to enhance the overall noise environment of urban areas. Most local jurisdictions have adopted noise ordinances, which specify acceptable interior noise standards for various land uses. The California Office of Noise Control has established noise control guidelines to be used in developing Noise Elements of municipal General Plans, as shown in Table 2-17, below.

Table 2-17 Typical Noise Levels

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE
THRESHOLD OF PAIN		140	INTOLERABLE OR DEAFENING	HEARING LOSS
NEAR JET ENGINE		130		
		120		
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		
LOUD AUTO HORN		100	VERY NOISY	
GAS LAWN MOWER AT 1m (3 ft)		90		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80		SPEECH INTERFERENCE
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60		
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		SLEEP DISTURBANCE
QUIET SUBURBAN NIGHTTIME	LIBRARY	30	FAINT	NO EFFECT
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20		
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0		

Source: Environmental Protection Agency Office of Noise Abatement and Control, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA/ONAC 550/9-74-004) March 1974

Existing Noise Environment in the Plan Area

The existing noise environment in the CVSC planning area varies substantially during the day and evening hours, and is affected by several major noise sources, including roadway traffic on State Highways 111 and 86 and Airport Boulevard, and from rail traffic on the two Union Pacific Railroad lines that pass through the planning area. An additional source of noise is aircraft operations at the Jacqueline Cochran Regional Airport where the closest runway is approximately one mile to the west. The Project is located outside the airport's 60 and 65 dB CNEL boundaries.

Rail (primarily freight) traffic on the Union Pacific lines that pass through the planning area can be expected to generate a 60 L_{dn} dBA noise contour from 2,200 feet to 3,600 feet. While rail traffic fluctuates with the times of the year and regional economic activity, on average of 50 to 60 freight trains pass through daily. The existing CNEL noise levels measured at 100 feet from the roadway centerline and associated with planning area roadway traffic is expected to range from 52.5 CNEL dBA to 65.7 CNEL dBA.[136] [137]

2.14.5 Existing Conditions

Existing Noise Environment

Ambient noise is characterized by the equivalent sound level (Leq), which represents the average constant noise level over a given amount of time. The Community Noise Equivalent Level (CNEL) averages noise levels over a 24-hour period and is weighted to recognize that noise is more evident and appears louder during evening and nighttime periods. Noise in eastern Coachella Valley is generally related to linear sources, or "noise corridors," such as roadways and railroads, or to aircraft. Within the project area, principal noise corridors are major roadways such as Highway 111 and Highway 86/86s; Southern Pacific Railroad; about 0.5 mile west of the CVSC; and the Jacqueline Cochran Regional Airport. Other sources of vehicular noise include the local streets in the project area. Transportation noise is concentrated along these roadways and can vary with the volume of traffic, the vehicular speed, the vehicular mix and the roadway cross-section.

The existing ambient noise environment in the project area is characteristic of an urban environment and includes transportation sources (i.e., vehicle traffic, trains, and aircraft overflights) and community sources (i.e., commercial and industrial operations). Regional and local roadways running through the City of Coachella and unincorporated areas are the major noise contributors in the project area, which include Highway 111, Highway 86/86s, and Southern Pacific Railroad lines, and major arterial roadways.

According to the Coachella General Plan, the primary noise source is traffic. The City is host to a range of facilities including regional freeways, major highways and other arterials, and collector and local streets. The highest volume roadways in the city are SR111, which runs through the project area, and the SR86S expressway, which roughly parallels SR111 just east of the channel. Operations on the UPRR lines that also pass through the City are also a major source of noise, which are periodically at intrusive levels. According to noise modeling conducted for the Coachella General Plan, future (2035) noise levels of 75.1 and 77 dBA CNEL are expected to extend to 165 and 631 feet from the centerlines of the SR111/Grapefruit Boulevard and SR86S.[138]

136 "City of La Quinta General Plan Update Noise Element Technical Report" prepared by Urban Crossroads, Inc. June 2011.
137 "2014 Traffic Volumes on California State Highways", Caltrans 2015
138 Table 4.10-4 Noise Modeling Results, Future Conditions (2035), Coachella General Plan DEIR.

Portions of the project within unincorporated Riverside County are within the General Plan's Eastern Coachella Valley Area Plan boundaries. The project area is located approximately 4,500 feet east of the nearest 60 CNEL noise contour the airport is projected to generate in the Year 2025.[139] The Proposed Project is also identified as occurring within Land Use Compatibility Zones D and E of the Jacqueline Cochran Airport Master Plan.[140] Compatible land uses include low to medium density residential, while there are no land use compatibility conflicts for lands that are allocated in Zone E.[141]

Groundborne Vibration

In addition to generating noise, traffic and heavy construction equipment can generate groundborne vibration, and are the principle sources of existing ground vibration in the planning area. The effects of groundborne vibration include perceptible movement of the building floors and walls, rattling of windows, and rumbling sounds. The overall effect of vibration caused by construction activities is generally limited only to people living close to the vibration sources. Building damage can also occur but only at exceptionally high vibration levels not commonly encountered except for vibration- sensitive structures very close to large vibration sources. The County of Riverside has specific standards for construction vibrations, but not the City of Coachella. According to the County's Noise Element – Policy 16.3, the construction vibration standard is 0.01 in/sec RMS (Root-Mean-Square).

2.14.6 Project Impacts

The following discussion analyzes whether the proposed channel improvement project will result in substantial increases in ambient noise level in the vicinity of planning area. Additionally, this assessment utilizes local noise standards and applicable daytime exceptions as the significance thresholds for noise impacts. The assessment of vibration impacts was conducted using information on anticipated vibration during construction and operation of the project planning area. For analysis purposes, periodic is defined as intermittent or short-term and only construction activities are consistent with this definition.

Potential impacts related to construction noise were analyzed using a variety of factors, including the distance between project-related noise sources to noise-sensitive land uses, typical noise levels associated with construction equipment, the potential for construction noise levels associated with construction equipment, the potential for construction time limits or noise limits established in local ordinance. No meaningful noise impacts are associated with the operation and maintenance of the improved channel. Each impact discussion analyzes impacts on sensitive receptors nearest the project planning area.

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Less than Significant with Mitigation. Project construction would require the use of heavy equipment that would temporarily increase noise levels at properties near the work sites. A variety of construction activities are necessary for the different project components. Common construction activities for the Proposed Project include excavation from the channel banks and bed, and channel easements. In addition to extensive earthwork, including grading and excavation, channel slope and bottom lining will also be ongoing construction activities. The construction equipment to be used include: utility trucks, drill (boring) rigs, graders and excavators, water trucks, compactors, front-end loaders, trenchers and haul trucks. Table 2-18 provides reference noise level at 50 feet associated with the construction equipment to be used for the project.

139 "East County Airports Background Data" prepared by the Riverside County Airport Land Use Ciommission. 2004.
140 Figure 5 Eastern Coachella Valley Area Plan – Jacqueline Cochran Airport
141 Op. sit.

Typical noise levels at 50 feet from an active construction area range up to 91 dBA Lmax during the noisiest construction phases. The site preparation phase, which includes grading, excavation and compacting, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three or four minutes at lower power settings.

Noise associated with the use of construction equipment is estimated between 74 and 85 dBA Lmax at a distance of 50 ft from the active construction area for the grading phase. As seen in Table 2-18, the maximum noise level generated by each piece of equipment is assumed to be approximately 85 dBA Lmax at 50 ft from the grader in operation. The worst-case composite noise level at the nearest noise-sensitive receptor during this phase of construction would be 85 dBA Lmax (at a distance of 50 ft) from an active construction area).

The closest residences (mobile home park at Airport Boulevard and the channel) are located within 50 ft of the project construction areas, including mobile homes that appear to be encroaching into the CVWD channel right-of-way. Southeast of the mobile home park is a single-family home located approximately 280 feet from the channel, and three homes to the east that are 480± feet from the channel. The last sensitive receptor on the east side of the channel is a single-family house 660± feet south of Airport Boulevard and 100± feet east of the channel. Sensitive receptors on the west side of the subject channel segment are limited to one single-family residence located 240± feet south of Airport Boulevard and 70± feet from the channel.

Until completed, occasionally the construction unshielded maximum noise levels would exceed the daytime sound level limits set forth in the Riverside County Noise Ordinance and the City of Coachella Noise Ordinance. During construction and at a quarter-mile from the noise generator, the total unshielded maximum noise level could reach 57 dBA Lmax occasionally and intermittently, but at these levels will not exceed the daytime noise standards for residential uses in unincorporated Riverside County or the City of Coachella.

Table 2-18
Typical Construction Equipment and Associated Noise Levels

Equipment Type[142]	Reference Noise Level at 50 feet (dBA Lmax)
Flat Bed Truck	74.0
Rubber Tired Dozer	82.0
Tractor/Loader/Backhoe	79.0
Excavator	81.0
Grader	85.0
Auger Drill Rig	85.0
Rubber Tried Dozer	82.0
Rollers	80.0
Drum Mixer	80.0
Vibration Plate Compactor	104

[142] Table 1 – CA/T Equipment Noise Emissions And Acoustical Usage Factors Database; FHWA Roadway Construction Noise Model User's Guide (2006) by U.S. Department of Transportation.

As shown in the table above, noise levels could occasionally reach decibels in the 74 to 85 dBA at 50 feet from the noise source, depending on equipment and machinery used at a given time. Vibration plate compactors may also be required to ensure adequate soils compaction, and while compactors may generate the highest noise levels they will occur exclusively within the channel and will be separated from sensitive receptors by intervening terrain.

Based on this analysis and nature of the project, most construction activities will take place within the channel and at a distance from sensitive receptors, with the exception of those portions of the project near Airport Boulevard and the aforementioned mobile home park at this location. A 13-unit mobile home park is also located in the planning area on south Desert Cactus Drive but its closest approach to the construction area is 470± feet, well outside the potential construction noise impact zone. No other sensitive receptors have been identified within the potential project construction noise impact zone.

It should be noted that in the area of the 20±-unit mobile home park located on Airport Boulevard at the channel, project construction will occur intermittently over the course of several months. Construction activities will occur during the least sensitive (daylight) times of the day. Construction activities in the immediate vicinity of these residences will include service road and channel grading and compaction, excavation and installation of concrete lining. Channel improvements at and near the east end of the Airport Boulevard bridge will also generate noise impacts in this area. Once construction in the vicinity of these homes is completed, construction activities will move elsewhere along the channel and subsequent noise impacts to these residences will be limited.

Noise may be an annoyance to sensitive receptors in proximity to the source, but project construction noise is not expected to be excessive on an on-going basis but will be occasionally intrusive, intermittent and temporary. Once construction is completed, the ambient noise environment in the planning area, including in the vicinity of sensitive receptors, will be the same as that before project construction.

It should also be noted that Section 7.04.070 of the Coachella Municipal Code (CMC) specifically exempts noise sources associated with construction and related activities, provided that such activities take place during daytime hours, as follows:[143]

October 1st through April 30th	**May 1st through September 30th**
Monday – Friday: 6:00 a.m. to 5:30 p.m.	Monday – Friday: 5:00 a.m. to 7:00 p.m.
Saturday: 8:00 a.m. to 5:00 p.m.	Saturday: 8:00 a.m. to 5:00 p.m.
Sunday: 8:00 a.m. to 5:00 p.m.	Sunday: 8:00 a.m. to 5:00 p.m.
Holidays: 8:00 a.m. to 5:00 p.m.	Holidays: 8:00 a.m. to 5:00 p.m.

For the unincorporated lands of the County, the allowed start time for construction activity from June 1 through September 30 is 6:00 a.m. per Ordinance No. 847 Section 2. It should also be noted that, as with the City of Coachella, County Ordinance 9.52.020 exempts construction activities from County noise standards. To further reduce the potential for construction activity to exceed Riverside County's evening noise standards (10:00 p.m. – 7:00 a.m.) an allowed start time of 7:00 a.m. is reflected instead as follows:

October 1st through May 31st	**June 1st through September 30th**
Any Day: 7:00 a.m. to 6:00 p.m.	Any Day: 7:00 a.m. to 6:00 p.m.

Limiting the hours for construction activities within the project area will minimize the exposure of the residences during quite hours. To further mitigate the noise impact to the nearest residential development within 50 feet during construction, mitigation measure N.1 and N.2 are provided. The N.1 and N.2 will

[143] Section 7.04.070 Construction activities, City of Coachella Municipal Code.

ensure that work is conducted during normal working hours (except in an emergency), construction equipment is equipped with adequate mufflers or with manufacture's standard noise control devices, and haul truck traffic is limited to the hours of construction. For these reasons and with implementation of mitigation set forth below, this impact will be less than significant.

Utility Projects

The Project-related utility relocations are of two types, the first involves using conventional augers to excavate foundation holes for power and guy poles. The second involves the use of horizonal drill equipment to bore holes for an 8-inch natural gas line and for the 72-inch casing for the subject irrigation lateral. The potential noise impacts associated with these two project types are described below.

IID Pole Relocation/Airport Boulevard: As notes in Section 1 and elsewhere in this EIR, the channel improvement Project will require IID to relocate a few of its poles where they conflict with planned channel improvement. At Airport Boulevard, potential noise-generating activities are primarily associated with excavating (auger) foundation holes for three new poles, two on the west bank of the channel (one power pole and one guy pole) and one on the east bank (one power pole). These excavations will be approximately 15 feet deep and can be accomplished in a day. Auger drill rigs can generate noise levels of up to 85 dBA measured at 50 feet.[144] The use of an auger drill for pole foundation holes will occur within 50 feet of mobile homes on the west bank and within 80 feet of one mobile home and 200± of a single family residence on the west bank. Noise associated with this construction activity will have an intrusive short-term impact on these residences. However, the time required to excavate the foundation hole is expected to be only a few hours each and will occur during the least sensitive time of the day. IID will be required to notify nearby residents at least seven days prior to this construction activity.

IID Pole Relocation/Lateral 99-8: Utility relocations where IID facilities conflict with the planned relocation of Lateral 99-8 largely involve pole removal but does include the installation of three new poles. As at Airport Boulevard, this activity will include the use of an auger drill rig for pole foundation excavation. However, there are no nearby occupied residences and Highway 111 and the UPRR lines intervene between the work site and the nearest residence located nearly 900 feet to the west. The nearest residence is located more than 1,100 feet to the east and beyond the east side of the channel. Therefore, construction noise associated with this power pole relocation project will be less than significant.

SCG Gas Line & CVWD Irrigation Lateral Relocations:

Both of these utility relocation projects will require setup and operation of horizontal directional drilling equipment, which will be a substantial generator of noise during the daytime hours. The horizontal boring equipment for both of these projects will be located along the west side of Highway 111 and will generate a peak noise level of 82± dBA at 50 feet.[145] The SCG rig will be located on Highway 111 approximately 600 feet northwest of the Filmore Street center line (see Exhibit 1-6B). The CVWD rig for the irrigation lateral will be located at the intersection of Avenue 57 and Highway 111 (see Exhibit 1-6A); these two locations are within 100 feet of each other. The nearest occupied residence is located approximately 600 feet west of these drill rig areas and is the only sensitive receptor in proximity of the drilling operations. Based on atmospheric dispersion, which occurs at the rate of about 6 dB per doubling of the distance (soft site), these drill rigs will generate 64 dBA at 400 feet. Drill rig noise will also be obscured by traffic on Highway 111 and the UPRR lines immediately east of the se drill site. Therefore, impacts to sensitive receptors from operation of the horizontal directional drilling operations will be less than significant.

144 "Construction Noise Handbook, Chapter 9-Construction Equipment Noise", prepared by the Federak Highway Administration, US Department of Transportation. August 24, 2017.

145 Ibid.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Significant and Unavoidable. As noted above, for purposes of this analysis vibratory noise impacts are measured in ground acceleration of inches or millimeters per second and are represented as a Peak Particle Velocity (PPV). As air is compressed and noise travels through the air, ground vibration is also the conducting of a compression wave but through soil or rock. A roller compactor will generate a PPV of 0.210 in/sec at 25 feet and 0.105 in/sec at 50 feet.[146] Human annoyance from construction vibration is approximately 0.01 in/sec PPV. Therefore, during short-term and intermittent earthwork, including soil compaction in proximity to 10± residences, there will be periods of occasionally intrusive ground vibration.

There will be no pile driving or comparable high-impact construction equipment used in constructing the channel improvements. As noted above, there may be a need for the use of vibratory plate compactors to ensure adequately compacted soils where concrete lining is planned. This use would occur along the full length of the subject channel segment, including in proximity to several residences. The mobile home park at Airport Boulevard and the channel) are located within 50 ft of the project construction areas, including mobile homes at the corner of Airport Boulevard and the channel, as well as a single-family home located approximately 280 feet from the channel, and a single-family home 100± feet east of the channel. Sensitive receptors on the west side of the subject channel segment that will be occasionally impacted by ground vibration are limited to one single-family residence located 240± feet south of Airport Boulevard and 70± feet from the channel.

The common County and Caltrans vibratory noise standard is more conservative than the frequently used RMS (Root-Mean-Square), which measures vibration mean versus the PPV (Peak Particle Velocity) that represents the highest disturbance. In order to assure a conservative determination in its analysis, the County/Caltrans standard is used to determine the level of impact likely from vibration during construction of the Proposed Project.

The subject channel improvements will be constructed in phases over a period of approximately one year. As a result, it is expected that ground-borne vibration from construction would cause intermittent, localized intrusion but temporary impacts, which will quickly diminish with distance. Grading activities, construction equipment and trucks hauling project materials would have the potential to generate low levels of ground-borne vibration within the Project. Table 2-19 provides vibration levels construction equipment.

Table 2-19
Construction Equipment Vibration Levels

Equipment	PPV (in/sec) at 25 feet
Small bulldozer	0.003
Jackhammer	0.035
Loaded Trucks	0.076
Large bulldozer	0.089
Plate Compactor[1]	0.23

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006
1. Comparable to a vibratory roller at 0.210 in/sec.

146 Transportation and Construction Vibration Guidance Manual (2013) by Caltrans.

As shown in the above table, the highest vibration generators are compactors and large bulldozers. They would generate a peak source of vibration with a reference velocity of 0.23 and 0.089 in/sec PPV, respectively, at a distance of 25 feet. The noise analysis used these reference measurements, and the anticipated equipment proposed for the project's construction (as detailed in the Air Quality Report provided in Appendix B) to determine vibration levels during project construction. These are summarized in Table 2-20.

Table 2-20
Project Vibration Levels

Distance to Const. Activity (Feet)	Receiver PPV Levels (in/sec)[1]						Threshold Exceeded?[2]
	Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Plate Compactor	Peak Vibration	
25'	0.003	0.035	0.076	0.089	0.23	0.23	Yes
50'	0.001	0.012	0.027	0.031	NA	0.031	Yes
100'	0.000	0.004	0.010	0.011	NA	0.011	Yes
125'	0.000	0.003	0.007	0.008	NA	0.008	No

[1] Based on the Vibration Source Levels of Construction Equipment included on Table 4.12-13.
[2] Does the peak vibration exceed the maximum acceptable vibration threshold of 0.01 in/sec PPV?

As shown in above table, at distances ranging from 25 to 125 feet from the project site, construction vibration velocity levels are expected to range from 0.23 in/sec PPV at 25 feet to 0.089 in/sec PPV at 125 feet. Using the Caltrans construction vibration standards for human annoyance, the Proposed Project construction activities will exceed the vibration standard of 0.01 in/sec PPV at receiver locations within 100 feet of plate compactors and large bulldozers during construction. If used as part of the project, large bulldozers within 100 feet of nearby sensitive residential land uses would be a significant impact. Mitigation measures N-1 and N-4 are provided below to reduce construction vibration levels to the greatest extent possible; however, plate and other compactors, and large bulldozers will operate within proximity to residences. As a result, impacts associated with groundborne vibration during construction will remain significant and unavoidable.

Utility Projects

The Project-related utility relocations are of two types, the first involves using conventional augers to excavate foundation holes for power and guy poles. The second involves the use of horizonal directional drill equipment to bore holes for an 8-inch natural gas line and for the 72-inch casing for the subject irrigation lateral. Neither the auger nor the horizontal directional drill operations generate significant ground vibration. Therefore, these activities, which will be of temporary and short duration, will not expose sensitive receptors to or generation of excessive groundborne vibration or groundborne noise levels.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

No Impact. The Project will not result in permanent increases in ambient noise levels in the project vicinity. Long-term channel maintenance will be limited to periodic inspections, continued occasional vegetation mowing in the channel bottom, and occasional repairs of the levees and service roads that will be short-lived. Otherwise, the Project will generate no new permanent noise, and no adverse impacts will occur.

Utility Projects
The utility relocation projects will not result in permanent increases in ambient noise levels in the project vicinity. Long-term maintenance will be limited to periodic inspections by SCG and CVWD personnel. Otherwise, the Project will generate no new permanent noise, and no adverse impacts will occur.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Less than Significant with Mitigation. The project area is in proximity to the Highway 111, Highway 86/86s, and Southern Pacific Railroad lines, with railroad lines and highways and streets passing through the project site. Portions of the planning area are also within the area of influence of the Jacqueline Cochran Regional Airport, operations at which occasionally generate intrusive noise levels in the vicinity. Surrounding roadway traffic generates a relatively continuous noise profile, while operations on the UPRR lines are periodic and can be highly intrusive, with up to 55 trains per day passing through the area. Therefore, the planning area is exposed to substantial temporary and periodic increase in ambient noise levels without the proposed improvements.

Project construction will temporarily increase ambient noise levels in the vicinity due to the presence and operation of a wide variety of construction equipment and construction traffic. Noise generating construction activities will include construction staging, incremental grading, site watering, excavation, soil compaction, placement of reinforcing steel, pouring of concrete and final grading.

These construction operations will result in occasional high, intrusive noise levels at nearby sensitive receiver receptors. However, construction activity will progress from upstream, will be of relatively short duration, and will fall below acceptable levels as construction progresses downstream. Noise levels decrease at a rate of 6± dBA for each doubling of distance from construction equipment. Therefore, the noise levels of 89.7 dBA generated during the grading phase and measured at 50 feet would be reduced to 83.7 dBA at 100 feet, and 77.7 dBA at 200 feet from the source to the receiver. These impacts will be short-term and will not represent a long-term perceptible increase in noise levels surrounding the project area. Increases to the noise environment as a result of short-term construction are determined to be significant and unavoidable impacts. The mitigation measures set forth in Section 2.14.7, below, shall be implemented to reduce the impacts to the greatest extent practicable.

Utility Projects
As discussed above, the IID pole relocations at Airport Boulevard will involve excavations of approximately 15 feet deep, which can be accomplished in a day. Auger drill rigs can generate noise levels of up to 85 dBA measured at 50 feet.[147] The use of an auger drill for pole foundation holes will occur within 50 feet of mobile homes on the west bank and within 80 feet of one mobile home and 200± of a single family residence on the west bank. Noise associated with this construction activity will have an intrusive short-term impact on these residences. However, the time required to excavate the foundation hole is expected to be only a few hours each and will occur during the least sensitive time of the day. IID will be required to notify nearby residents at least seven days prior to this construction activity.

The IID pole relocation near CVWD's Lateral 99-8 will include the use of an auger drill rig for pole foundation excavation. However, there are no nearby occupied residences and Highway 111 and the UPRR lines intervene between the work site and the nearest residence located nearly 900 feet to the west. The nearest residence is located more than 1,100 feet to the east and beyond the east side of the channel. Therefore, construction noise associated with this power pole relocation project will be less than significant.

147 "Construction Noise Handbook, Chapter 9-Construction Equipment Noise", prepared by the Federak Highway Administration, US Department of Transportation. August 24, 2017.

Both the *SCG gas line and CVWD irrigation lateral relocations* will require setup and operation of horizontal directional drilling equipment, which will be a substantial temporary generator of noise during the daytime hours. The horizontal boring equipment for both of these projects will be located along the west side of Highway 111 and will generate a peak noise level of 82± dBA at 50 feet.[148] The SCG rig will be located on Highway 111 approximately 600 feet northwest of the Filmore Street center line (see Exhibit 1-6B). The CVWD rig for the irrigation lateral will be located at the intersection of Avenue 57 and Highway 111 (see Exhibit 1-6A); these two locations are within 100 feet of each other. The nearest occupied residence is located approximately 600 feet west of these drill rig areas and is the only sensitive receptor in proximity of the drilling operations. Based on atmospheric dispersion, which occurs at the rate of about 6 dB per doubling of the distance (soft site), these drill rigs will generate 64 dBA at 400 feet. Drill rig noise will also be obscured by traffic on Highway 111 and the UPRR lines immediately east of the se drill site. Therefore, even temporary impacts to sensitive receptors from operation of the horizontal directional drilling operations will be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. Jacqueline Cochran Regional Airport is a county owned, public use airport located 1.25 miles west of the project area. The project area does not lie within the sensitive noise contours (<60 dBA CNEL) of the Jacqueline Cochrane Regional Airport so there will be no impact.[149] The project will not expose people working in the project area to excessive noise levels generated by operations at the regional airport. No mitigation is required.

Utility Projects
The project area does not lie within the sensitive noise contours (<60 dBA CNEL) of the Jacqueline Cochrane Regional Airport so there will be no impact.[150] The project will not expose people working in the project area to excessive noise levels generated by operations at the regional airport. No mitigation is required.

2.14.7 Mitigation Measures

As described above, the Proposed Project could have significant construction-related noise and vibration impacts, which require mitigation. The following mitigation measures are recommended to reduce construction-related noise impacts to the lowest level practicable.

N-1 Construction Hours
Project construction activities shall only occur between the permitted hours of each local jurisdiction's Municipal Code. The project construction supervisor shall ensure compliance.

N-2 Equipment Noise Reducing Measures
During all project site construction, all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction supervisor shall place all stationary construction equipment so that emitted noise is directed away from the noise-sensitive receivers nearest the construction zone.

148 Ibid.
149 Exhibit JC-5: Future 2025 Noise Impacts. Jacqueline Cochran Regional Airport Master Plan. Riverside County APLUC. December 2004.
150 Ibid.

N-3 Equipment Staging
The construction supervisor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receivers nearest the project site (i.e., at the planned staging areas or farther from nearby sensitive receiver locations if possible) during all project construction.

N-4 Sensitive Land Uses
The use of large bulldozers and compacting equipment within 100 feet of nearby sensitive land uses (residences) shall be minimized and avoided where possible.

N-5 Truck Deliveries
The construction supervisor shall limit haul truck deliveries to the same hours specified for construction equipment by each local jurisdiction's Municipal Code.

N-6 IID Notification
At least seven days prior to the initiation of power pole foundation drilling on the west and east sides of the channel at Airport Boulevard, IID shall notify nearby residents, including all of those within the adjoining mobile home park on the west bank, of the drilling and related construction activity.

Mitigation Summary
With the mitigation measures set forth above, construction-related project vibration and other noise impacts at nearby sensitive receiver locations will be greatly reduced but will still exceed acceptable limits and impacts will be potentially significant and practicably cannot be further mitigable. The impacts to the closest sensitive receivers are unlikely to be sustained during the entire construction period, but will occur rather only during the times that construction activities are scheduled in proximity to these sensitive receptors. Construction will be restricted to daytime hours consistent with local jurisdiction, thereby eliminating potential vibration and other potential noise impacts during the sensitive nighttime hours. With the implementation of these mitigation and minimization measures, construction and operational noise impacts will be less than significant for most but not for all sensitive receptors.

2.14.8 Significance After Mitigation

Operation of the improved channel will not exceed noise standards, and impacts will be less than significant. However, the construction of the subject improvements may create substantial short-term noise increases, and cause perceptible vibration if large bulldozers and/or compactors are used in proximity to sensitive uses along the channel. Implementation of the mitigation measures detailed above would reduce noise impacts during construction to the extent practicable by requiring that activities be limited to the hours of the local municipal codes. The operation of stationary equipment will be located as far from sensitive receptors as is practicable. However, although construction hours exempt construction activities from noise standards, noise levels, in the form of groundborne vibration, during construction will exceed local jurisdiction standards at locations immediately adjacent to sensitive receptors along the channel. There is no feasible mitigation for these short-term but occasionally impacting noise levels, and construction noise will be significant and unavoidable.

2.14.9 Cumulative Impacts

As described above, the Proposed Project will not result in a permanent stationary noise source. The proposed channel improvements are expected to operate at noise levels that are essentially the same as current conditions. During construction, the noise sources will be mobile and will come and go as construction moves down the channel. In most cases, unmitigated noise levels will not exceed 65 dBA Leq at 25 feet from the project planning area for any sensitive receptor except within the allowable hours of 7

a.m. and 5 p.m. for construction-related noise, which would be within the site boundaries of project planning area. The exception is noise and ground vibration associated with construction activities in proximity to residences, where impacts may be significant even with mitigation.

Operational noise levels resulting from the Proposed Project would not exceed city or county standards for sensitive receptors, nor would they result in substantial permanent increases in ambient noise levels in the project vicinity above levels existing without the project. Cumulative noise impacts occur when multiple sources of noise, though individually not substantial, combine to result in excessive, cumulative noise exposure at noise sensitive areas. Noise generated from maintenance and operation of the channel will be infrequent and transient in nature, and will not exposed sensitive receptors for a substantial amount of time. Therefore, noise impacts associated with operation of the Proposed Project would not be cumulatively considerable.

2.15 Population, Housing and Socio-Economic Resources

2.15.1 Introduction

This section of the EIR describes existing conditions with regard to population, housing and socio-economic resources within the CVSC Improvement Project area and analyzes the potential impacts of the project to these resources. A wide range of data and information, ranging from research to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects.

2.15.2 Thresholds of Significance

Project impacts are analyzed below using the thresholds of significance provided in Appendix G of the CEQA Guidelines.

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

2.15.3 Regulatory Framework

Federal

No federal regulations relative to population, housing, and socio-economic resources would be applicable to the proposed CVSC improvement project.

State

No state regulations relative to population, housing, and socio-economic resources would be applicable to the proposed CVSC improvement project.

Regional/Local

No regional/local regulations relative to population, housing, and socio-economic resources would be applicable to the proposed CVSC improvement project.

2.15.4 Environmental Setting

City of Coachella

The population of Coachella was 40,704 residents in 2010 and is estimated to grow to 70,200 by 2020, although the city does not appear to be on track to realize such strong growth. The city had 8,998 dwelling units in 2010 with about half of these units being built between 2000 and 2010. The city has a higher than average household size of 4.51 persons per household. Assuming the same household size in the future, project 2020 population growth would correspond to approximately 6,500 new dwelling units. Agriculture has historically been the main source of jobs in the City of Coachella, providing about 30% of all employment in 2010, followed by retail (14.7%) and transportation/warehousing/utilities (12.6%).[151] The median household income was $43,018 in 2010, a substantial improvement from $28,590 in 2000.

Community of Thermal[152]

The 2015 population of Thermal was approximately 3,106, of which about 1,133 were employed. The median household income in 2015 was estimated to be $25,643. The community had 842± dwelling units in 2010 and a higher than average household size 3.68 persons. Considerable acreage in the Thermal area has been designated by the County for Light Industrial and Heavy Industrial. Higher density residential designations are provided in the village area of Thermal and in an area east of the airport. A variety of new uses, including expanded airport operations, are emerging at the Jacqueline Cochran Regional Airport. Commercial Tourist land use designations are provided in the vicinity of the new State Route 86/Highway 111 interchange.[153]

2.15.5 Existing Conditions

Population

The area surrounding the project site is comprised of incorporated areas of the City of Coachella and the unincorporated community of Thermal. Currently, the population of the City of Coachella is approximately 45,407.[154] The 2016 population of Thermal was approximately 3,634.[155] In 2016, the average household size in Coachella was 4.43 and in Thermal was 3.58.[156] In the east Coachella Valley, the County projects that the unincorporated area population will increase from 32,454 in Year 2010 to 89,606 by Year 2020 and 206,313 by the Year 2035.[157]

151 2010 US Census
152 2010 US Census American Community Survey and DataUSA 2017.
153 "Eastern Area Plan – Riverside County General Plan", Adopted 2015.
154 California Department of Finance- Demographic Research Unit, Population Estimates for Cities, Counties, and the State. January 2015 and 2016 (Report E-1).
155 Dept. of Finance did not report a 2016 population estimate for Thermal. An estimate is provided here using the lowest positive growth rate of the surrounding communities (1.8%) to provide a conservative estimate. Basis: 2010 U.S. Census and 2010-2014 American Community Survey 5-Year Estimates.
156 Ibid.
157 Riverside County General Plan 2015, Appendix F-1: Population and Employment Forecast, Table 6. 2015.

Housing
In the east Coachella Valley, the County projects that the unincorporated area housing will increase from 7,363 in Year 2010 to 22,971 by Year 2020, and 55,286 by the Year 2035.[158] Most of the new housing in the project area is being constructed in Coachella. Housing in the project area is comprised primarily of conventional single-family residences and mobile homes. There is no residential development adjacent or in proximity to the north project area extending from Avenue 54 south to Airport Boulevard, where existing and planned land uses are primarily industrial and agriculture. Residences along and near the subject channel reach include a 20±-unit mobile home park at the southeast corner of Airport Boulevard and the channel. A single residence is also located adjacent to the east bank of the channel and south of the aforementioned mobile home park, as well as a single residence located in the west bank of the channel, just south of Airport Boulevard. It should be noted that large areas with residences and residential lands are currently located within a 100-year floodplain with inundation forecasted as deep as 3 feet (see Exhibit 2-7).

Socio-Economic Resources
Several features contribute to the socioeconomic setting of an area: population and housing characteristics, trends in employment and the labor force, the makeup of businesses and local industries, and government and finance characteristics. Collectively, these characteristics (described above) provide a comprehensive view into the existing socioeconomic condition of an area.

Agriculture has historically been the main source of jobs in the City of Coachella and the east Coachella Valley, providing about 30% of all employment in 2010, followed by retail (14.7%) and transportation/warehousing/utilities (12.6%). The median household income was $43,018 in 2010, a substantial improvement from $28,590 in 2000. Whereas, the median household income for the Community of Thermal in 2015 was estimated to be $25,643.

According to Riverside County and as indicated in the population projections above, the east Coachella Valley is expected to grow at a substantial rate in the next two decades. In the east valley, the County projects that the unincorporated area employment will increase from 6,78 jobs in Year 2010 to 15,849 jobs by Year 2020, and 35,577 jobs by the Year 2035.[159] These optimistic projections notwithstanding, the existing 100-Year flood threat will be a serious impediment to future development in the city and unincorporated areas that would be protected by the Proposed Project.

2.15.6 Project Impacts

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The Proposed Project consists of improving the subject reach of the CVSC to eliminate the 100-Year flood threat that currently exists. The project is not expected to directly induce new development or population growth, but will ensure that current and future development is protected from the 100-year flooding threat. Given the finite time frame within which the project will be constructed there will be no induced household formation or population growth that could substantially increase the local population or affect demand for new housing, or additional roads or urban infrastructure. No impact is anticipated.

158 Ibid.
159 Riverside County General Plan 2015, Appendix F-1: Population and Employment Forecast, Table 6. 2015.

Utility Projects
None of the utility relocation projects will directly induce new development or population growth. No new supplies of irrigation water, electrical power or natural gas will be generated by these utility relocation projects. There will be no impacts.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. As noted above and elsewhere in this EIR, the project planning area includes single-family residences and mobile homes that are located adjacent or in proximity to the channel improvement construction site. These include mobile homes that actually encroach into CVWD rights-of-way just south of Airport Boulevard. Nonetheless, the Proposed Project's design will avoid these residences, which should remain occupiable during project construction and following project completion.

No adjacent or nearby residence or resident will be displaced. A few will be impacted by noise and ground vibration during short periods of channel construction in their immediate vicinity. These impacts will be limited to the least sensitive times of the day, will be intermittent and will only occur when activity is in proximity, and are temporary and will end once the subject improvements are completed.

The Proposed Project will eliminate the existing 100-Year flooding threat, which could damage or destroy these and other homes in the project's area of benefit. The Proposed Project will not displace a substantial number of person or houses requiring the construction of replacement housing.

Utility Projects
The project planning area includes single-family residences and mobile homes that are located adjacent or in proximity to the utility relocation sites. These include mobile homes that actually encroach into CVWD rights-of-way just south of Airport Boulevard, near where one new IID power pole will be located. Nonetheless, the new power pole will avoid these residences, which should remain occupiable during and following project completion. The utility relocation projects will not displace persons or houses, nor will it require the construction of replacement housing.

2.15.7 Mitigation Measures

The Proposed Project will not have a significant adverse effect on area or regional population, housing or socio-economic conditions.

2.15.8 Significance After Mitigation

The Proposed Project will not have a significant adverse effect on area or regional population, housing or socio-economic conditions. Rather, the project will provide flood protection to hundreds of existing homes, businesses and other urban improvements that are within FEMA's current Flood Insurance Rate Map area.

2.15.9 Cumulative Impacts

Implementation of the Proposed Project will not increase the local population or increase demand for housing or socio-economic resources. The Proposed Project would have a cumulatively considerable beneficial effect by removing the identified flooding threat.

2.16 Public Services

2.16.1 Introduction

The following section describes the existing public services in the project vicinity and analyzes the potential impacts associated with the CVSC improvement project. A variety of local and regional data and information, ranging from research and analysis conducted for the project site, to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects on public services.

2.16.2 Thresholds of Significance

Project impacts are analyzed below using the thresholds of significance provided in Appendix G of the CEQA Guidelines.

a) The project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- Fire Protection
- Police Protection
- Schools
- Parks
- Other Public Facilities

2.16.3 Regulatory Framework

Federal

There are no federal regulations governing public services that apply to the proposed CVSC improvement project.

State

There are no state regulations governing public services that apply to the proposed CVSC improvement project.

Regional and Local

No regional or local regulations regarding public services are applicable to the proposed CVSC improvement project.

2.16.4 Environmental Setting

Fire Protection

The Riverside County Fire Department provides fire protection and emergency services in unincorporated Riverside County, including portions of the project site. The balance of the planning area is located in the City of Coachella. The nearest fire station to the project area is the County's Thermal Fire Station No. 39 at 86911 Avenue 58 in Thermal. The City of Coachella has a fire station in the downtown area at 1377 6th Street, approximately 1.5 miles northwest of the project planning area. During construction, the project may

require either temporary partial or full lane closures on one or more area streets that that could impact emergency roadway access. CVWD will require the construction contractor to prepare and implement a Construction Traffic Control Plan (see Section 2.18 Transportation and Traffic) that minimizes potential traffic impacts during construction and assures that mobility and accessibility in the project area are maintained to the greatest extent practicable. Therefore, project will have a less than significant impact on fire protection of other emergency services and issues of fire protection are not further discussed.

Police Protection

The Riverside County Sheriff's Department provides police protection in the project area, including the City of Coachella and unincorporated lands. The nearest police station to the Proposed Project is located approximately 0.5 miles to the west of the project planning area at 86625 Airport Boulevard in Thermal. The County Sheriff's Department provides contract police protection services to the City of Coachella out of the Thermal Sheriff's Station.

As described above, the Proposed Project will not require either temporary partial or full lane closures on any of the area's streets that that could impact the ability of the Sheriff's Department to provide protection service. CVWD will require that the construction contractor develop and implement appropriate construction site security and a Construction Traffic Control Plan that will minimize adverse impacts to the provision of police services to less than significant levels.

Schools

The Coachella Valley Unified School District provides public K-12 school services in the project area. The nearest school to the project site is John Kelly Elementary School, approximately 0.3 miles to the west of the project planning area. The channel improvement project will not generate any residential units or habitable structures that would increase the demand for school services or require the construction of new schools. With the implementation of the requisite Construction Traffic Control Plan, project construction will not adversely impact school traffic. The project will have less than significant impacts on schools.

Libraries

The principal provider of library services in the Coachella Valley is the Riverside County Library System, a network of public libraries serving Riverside County, which includes a library location in Coachella, approximately 2.0 miles from the project planning area. The County of Riverside, under contract with the cities where libraries are located, operates these facilities. Among the services offered are a Countywide literacy program, volunteer programs, adult computer courses, youth programs, guest speaker lectures and presentations, musical events, and access to internet and computer facilities. The proposed channel improvement project will not adversely impact area libraries.

Parks

Riverside County owns and maintains a wide range of parks and community facilities in the project area, the closest being the Thermal Ball Park located on Olive Street in Thermal, approximately 0.25 miles west of the project planning area. The project does not propose any new residential units or habitable structures that would increase the use of parks or recreation services or require the construction of new facilities. There are no City of Coachella parks located in the project vicinity. No adverse impacts to community parks will occur.

Other Public Facilities

In the project area, Imperial Irrigation District provides electricity, and Verizon provides telephone and digital communication services. No natural gas services are provided in the project area. The Thermal US Post Office is located approximately 0.25 miles west of the planning area at 87200 Airport Boulevard. The Proposed Project is not expected to have a significant adverse impact on these or other public facilities in the vicinity. Also see Section 2.18: Utilities and Service Systems, below.

2.16.5 Existing Conditions

Fire Protection Services
The Riverside County Fire Department (RCFD) provides fire protection and emergency services in unincorporated Riverside County and the City of Coachella, including the projects site. The nearest fire stations to the project area is the County's Thermal Fire Station No. 39 and City of Coachella's Fire Station No. 79. The Fire Station No. 39 is located at 86911 Avenue 58 in Thermal, approximately 0.90 miles east of the project site. Fire Station #79, located at 1377 6th Street, is approximately 2.50 miles northwest of the site.

Police Protection Services
The Riverside County Sheriff's Department provides police protection to unincorporated county and incorporated city lands in and surrounding the project area. The nearest police station to the project area is located approximately 0.81 miles to the west at 86625 Airport Boulevard in Thermal. The County Sheriff's Department also provides contract police protection services to the City of Coachella out of the Thermal Sheriff's Station.

Schools
The Coachella Valley Unified School District (CVUSD) provides public school services in the project area. The nearest school to the project site is John Kelly Elementary School, approximately 0.36 miles to the west of the project area.

Parks
Riverside County owns and maintains a wide range of parks and community facilities in the project area. The nearest park to the project site is Thermal Ball Park located on Olive Street in Thermal approximately 0.43 west of the project area. The recently approved CV Link multi-modal transportation project includes a path along the west (right) bank of the channel and along the northern portion of the project area from Avenue 54 south to Airport Boulevard. The 20±-foot CV Link path will be constructed atop the channel service road.

Other Public Facilities
No other public facilities have been identified that could be affected by the Proposed Project.

2.16.6 Project Impacts

Fire Protection Services
Less than Significant: During construction, the Proposed Project should not require either temporary partial or full lane closures on any of the area's streets that could impact emergency roadway access. Construction Traffic Control Plan (mitigation measure TRA-1) will be implemented to minimize potential traffic impacts during construction and assures that mobility and accessibility in the project area are maintained to the greatest extent practicable. Therefore, the Project would not adversely affect the provision of fire protection services or result in the need for new or physically altered facilities. The project will have a less than significant impact on fire protection services.

Police Protection Services
Less than Significant As discussed above, construction Traffic Control Plan will be implemented to minimize potential traffic impacts during construction and assures that mobility and accessibility in the project area are maintained to the greatest extent practicable. Therefore, the Project would not adversely affect the provision of police protection services or result in the need for new or physically altered facilities. The proposed CVSC improvement would not generate any demand for police protection services; therefore, it will have a less than significant impact on police protection services.

As discussed above, a Construction Traffic Control Plan will be implemented to minimize potential traffic impacts during construction and assures that mobility and accessibility in the project area are maintained to the greatest extent practicable. Therefore, the Project would not adversely affect the provision of police protection services or result in the need for new or physically altered facilities. The Proposed Project would not generate any demand for police protection services, therefore, it will have a less than significant impact on fire protection services.

Schools
No Impact: The project does not include any residential units or habitable structures and would not result in a permanent increase in the local population and would not result in substantial increases in the demand for school services. So, it would not require the provision of new or additional school facilities, nor would it affect the enrollment or capacity of the schools within the project area. No project-related impacts would occur to public school services.

Parks/Other Public Facilities
No Impact: The Proposed Project would not result in any land development or population increase that could generate increased demand for parks or any other public services. The Proposed Project improvements will not have an adverse effect on the recently approved CV Link multi-modal transportation project. Therefore, no impact to public services is anticipated.

Utility Projects
None of the utility relocation projects would result in any land development or population increase that could generate increased demand for public services. Staging areas, including equipment storage areas, will be secured and will not generate a significant demand for additional police or fire services. As discussed above, a Construction Traffic Control Plan will be implemented to minimize potential traffic impacts during construction and assures that mobility and accessibility in the project area are maintained to the greatest extent practicable. Public utilities and agricultural irrigation will not be expanded but will be upgraded with new facilities.

2.16.7 Mitigation Measures

No mitigation measures are required.

2.16.8 Significance After Mitigation

The Proposed Project would not result in any significant impacts to public services.

2.16.9 Cumulative Impacts

Construction of the Proposed Project could conceivably require fire and/or police protection and emergency medical services in case of emergencies, theft or vandalism. However, that demand would not result in a need for expansion of fire, police or other public services or facilities. Therefore, the Proposed Project will not have a considerable cumulative contribution to impacts or demand for public services.

2.17 Recreational Resources

2.17.1 Introduction

This section of the EIR describes the existing recreational resources at and in proximity to the Project planning area, and evaluates potential impacts on those recreational resources from the Proposed Project, including causing deterioration of or increased demand for such facilities.

2.17.2 Thresholds of Significance

The thresholds of significance analyzed herein have been taken from Appendix G: Environmental Checklist of the State CEQA Guidelines. For purposes of this EIR, the Proposed Project would have a significant impact on recreation if it were to:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

2.17.3 Regulatory Framework

Federal

No federal regulations associated with recreational resources are applicable to the proposed CVSC project.

State

No state regulations associated with recreational resources are applicable to the proposed CVSC project.

Local
No local regulations associated with recreational resources are applicable to the proposed CVSC project.

2.17.4 Environmental Setting

Riverside County owns and maintains a wide range of parks and community facilities in the project area, the closest being the Thermal Ball Park located on Olive Street in Thermal, approximately 0.42 miles west of the project planning area. The City of Coachella has nine public parks[160], including two pocket parks, none of which are located in proximity of the subject channel improvement project. The Riverside County East Area Plan of the Comprehensive General Plan calls for several trails and bike paths in the CVSC planning area, including a regional trail along both sides of the stormwater channel, along Airport Boulevard, Avenue 58, and Fillmore Street. None of these facilities have been constructed. Also included in planned facilities is the approved southern segment of the CV Link multi-modal path, which has been approved by CVAG for development as far south as Airport Boulevard and extending north along the west bank of the stormwater channel.

2.17.5 Existing Conditions

Recreation provides identity for citizens and are a major factor in the perception of quality of life in a given community. Recreation services are often cited as one of the most important factors in surveys about livable communities. In the County's Eastern Coachella Valley General Plan, approximately 455 acres of land are designated as Open Space-Recreation (OS-R) to improve the quality of life in east valley communities.[161]

In the City of Coachella, recreational facilities include the Coachella Valley Boxing Club, Jack Delgado Karate Club, and Eleanor Shadowen Senior Citizen Center. Non-governmental organizations also offer recreational programs and services for the City. These organizations include the Boys and Girls Club of Coachella, the Esperanza Youth and Family Center, churches, and Parent-led Sports Programs. The Boys and Girls Club of Coachella is located at 85350 Bagdad Avenue in the City of Coachella. The Esperanza Youth and Family Center is located at 1536 Seventh Street in the City of Coachella.

160 City of Coachella General Plan, Figure 3-8: Park Service Area. 2015.
161 Table 2: Statistical Summary of Eastern Coachella Valley Area Plan.

The recently approved CV Link multi-modal transportation project includes a path along the west (right) bank of the channel and along the northern portion of the project area from Avenue 54 south to Airport Boulevard. The 20±-foot CV Link path will be constructed atop the channel service road.

2.17.6 Project Impacts

The Proposed Project would have a significant adverse impact on recreational facilities if it would:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

No Impact. The Proposed Project will not have a direct or indirect adverse impact on community parks and/or open space areas. There are no parks in the immediate vicinity, the closes being 0.42± miles to the west, and all site disturbance will be within the CVSC boundaries. Neither have these or other recreational facilities been identified that would be adversely impacted. The project would not increase the use of existing neighborhood or regional parks or other recreational facilities, nor will it require the construction or expansion of recreational facilities.

The recently approved multi-modal path along the west (right) bank of the channel will extend through a portion of the project between Avenue 54 south to Airport Boulevard. The 20±-foot wide CV Link path will be constructed atop the channel service road, which will be further enhanced and improved by the Proposed Project. No adverse impacts, including increased use, to neighborhood or regional parks, other recreational are anticipated.

Utility Projects
The proposed utility relocation projects will not increase the use of existing neighborhood or regional parks or other recreational facilities, will not affect access to such facilities, and will not require the construction or expansion of recreational facilities. No impacts would occur.

2.17.7 Mitigation Measures

No impacts to recreational facilities will occur and no mitigation is required.

2.17.8 Significance After Mitigation

As discussed above in Section 3.16.5, neither the construction nor the operation of the improved stormwater channel will have a significant impact on recreational resources in the project area. Therefore, no impact is anticipated.

2.17.9 Cumulative Impacts

City of Coachella and Riverside County General Plan policies support the commitment to maximize access to recreational facilities and programs regardless of income, age, disability, location of residence, or another category. The proposed improvements to the CVSC could not increase demand or the need for additional facilities nor will it require the construction or expansion of recreational facilities. The effect of this project on recreational resources is not cumulatively considerable.

2.18 Transportation and Traffic

2.18.1 Introduction

This section of the EIR describes existing conditions with regard to the local transportation network and traffic volumes within the CVSC Improvement Project area, and analyzes the potential impacts of the project on the surrounding transportation system and traffic conditions. Construction of the project will take place adjacent to major roadways such as Highway 111 and Highway 86/86s, and local streets including Avenue 54, Airport Boulevard (Ave 56), and Avenue 58. The project could also affect operation of the two Union Pacific Railroad lines and associated bridges that cross through the project area. A wide range of data and information have been used in researching and analyzing the project and its potential effects on the local transportation network and traffic, and is cited in this section.

2.18.2 Thresholds of Significance

The following thresholds or criteria are derived from Appendix G: Environmental Checklist of the CEQA Guidelines, and are used to determine the level of potential effect associated with a Proposed Project. The Proposed Project would have a significant effect on transportation/traffic if it would:

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersection) or incompatible uses (e.g., farm equipment).

e) Result in inadequate emergency access.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

2.18.3 Regulatory Framework

Federal

No federal regulations associated with transportation and traffic is applicable to the proposed CVSC project.

State

Railroads

The California Public Utilities Commission (CPUC) has regulatory authority over numerous railroads operating within the state, including the Union Pacific Railroad (UPRR) operating lines that cross through the project area. CPUC oversees rail safety, including railroad safety, rail transit safety and rail crossing safety. With regard to the UPRR facilities in the project area, the CPUC employs federally certified inspectors to ensure that UPRR complies with both federal and state railroad safety regulations. The CPUC has launched its first state-run railroad bridge safety program, which parallels federal practices while coordinating with operator bridge personnel.

Highways

California Department of Transportation (Caltrans) has jurisdiction over state highway facilities, including freeway segments, signalized intersections on state highways, and on- and off-ramp intersections with local roadways. Caltrans Guidelines recommend a target Level of Service (LOS)[162] between LOS C and LOS D for their facilities. If the location under existing conditions operates worse than the appropriate target LOS, then the existing LOS should be maintained (Caltrans 2002).

Regional/Local

County Congestion Management Program

The Riverside County Congestion Management Program (CMP) is prepared by the Riverside County Transportation Commission (RCTC) with the express purpose of more directly linking land use and transportation, and improve air quality throughout the County. The CMP was last adopted in 2011. The portion of State Highway 111 within the project area is a CMP roadway that extends from US I-10 to the west to the Imperial County line to the south.[163]

County General Plan Policies

Riverside County General Plan Policy C 2.1 states that the County will maintain the following County-wide target level of service (LOS): LOS C on all County-maintained roads and conventional State Highways. As an exception, LOS D may be allowed in Community Development areas at intersections of any combination of Secondary Highways, Major Highways, Arterial Highways, Urban Arterial Highways, Expressways or conventional State Highways. LOS E may be allowed in designated Community Centers to the extent that it would support transit-oriented development and pedestrian communities. For CMP streets or highways, the County accepts LOS E.

CVAG Active Transportation Plan

The Coachella Valley Association of Governments (CVAG) Active Transportation Plan[164] establishes a long-range plan for developing bicycle, pedestrian, and neighborhood electric vehicle (NEV) facilities in the Coachella Valley.

Coachella General Plan

City of Coachella transportation design criteria establish LOS "D" in "Community Development areas, and only at intersections of any combination of Secondary Highways, Major Highways, Arterials, Urban Arterials, Expressways, conventional state highways or freeway ramp intersections. For the purposes of this analysis, LOS "D" is the minimum acceptable LOS for roadway segments. The Circulation Element of the Coachella General Plan establishes long-range goals, policies, and programs pertaining to all aspects of the local circulation system. Among these are policies, the following of which are applicable to the project.

Goal CIR-1.6 Balance the safety concerns of pedestrians and cyclists with motor vehicles and emergency response to ensure that the safety of all users of the transportation system is considered.

Goal CIR-2.3 Identify, implement, and maintain a system of truck routes within the City that minimizing negative impacts on local roads and sensitive land uses including residents, schools, parks, recreation facilities and other similar land uses.

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162 LOS is a scale used to determine the operating quality of a roadway segment or intersection based on volume-to- capacity (V/C) ratio or average delay experienced by vehicles on the facility. The levels range from A to F, with LOS A representing free traffic flow and LOS F representing severe traffic congestion.

163 Table 2-1, Riverside County Congestion Management Program, 2011.

164 "Coachella Valley Association of Governments Active Transportation Plan," Michael Baker International.

2.18.4 Environmental Setting

A variety of transportation facilities occur within or in proximity to the CVSC project area; these include State Highways 111 and 86, Airport Boulevard and two railroad lines of Union Pacific Railroad. Rail traffic ranges from 40 to 50 trains per day. Current (2014) motor vehicle traffic on State Highway 111 and 86 was 4,400 AADT and 17,000 AADT, respectively.[165] Airport Boulevard is an existing two-lane roadway that is planned for expansion to provide four travel lanes. Current (2011) average daily traffic volumes on Airport Boulevard west of Highway 86 are approximately 4,300 ADT and are projected to reach 14,400 with buildout of surrounding lands as designed in the Riverside County General Plan.[166]

Sunline Transit Agency provides public transportation services throughout the Coachella Valley, as well as limited trips to destinations outside the valley. Sunline also provides special services to approved disabled riders. The CVSC project area is served by Line 91, which has a stop on the corner of Airport Boulevard and Palm Street, Fillmore Street and Desert Cactus Drive and within or near the project planning area. This route provides indirect access to other Coachella Valley locations. The proposed CVSC improvement project has the potential to affect these transportation facilities.

The Jacqueline Cochran Regional Airport is located approximately one mile west of the CVSC project planning area. It is a county-owned facility built during World War II and today is comprised of an area of 1,850± acres and provides two asphalt-paved runways that are 8,500 and 4,995 feet in length. For the 12-month period ending December 31, 2010, the airport had 76,500 aircraft operations, an average of 209 per day, 98% of which was general aviation operations.

2.18.5 Existing Conditions

The Proposed Project is located within the corporate limits of the City of Coachella and unincorporated Thermal area of Riverside County. The following discussion focuses on existing facilities, levels of service and jurisdiction standards, as well as roadways and transit in the vicinity of the project.

Levels of Service and Jurisdiction Standards

The "Level of Service" (LOS) is a qualitative measurement that describes operational conditions within a traffic stream and considers speed, travel time, driving comfort, safety and traffic interruptions. Levels of Service are described as a range of alphabetical connotations, "A" through "F," which are used to characterize roadway and intersection operating conditions. LOS A represents the best, free flow conditions, and LOS F indicates the worst conditions and system failure. As noted above and as further discussed below, LOS D is an acceptable or provisionally acceptable LOS for most roadway segments and intersections in the project area.

Intersection Capacity

At intersections, the level of service is typically dependent on the quality of traffic flow. The 2010 Highway Capacity Manual (HCM)[167] methodology expresses the level of service at an intersection in terms of delay time for the various intersection approaches. The procedures used to determine levels of service vary with the type of intersection controls, including signs and signals. The levels of service are defined in the following table.

165 "2014 Traffic Volumes on California State Highways", Caltrans 2015
166 Appendix EIR-4, Riverside County General Plan Update. 2015.
167 "Highway Capacity Manual; Fifth Edition"; Transportation Research Board, National Research Council; Washington, D.C.; 2010.

Table 2-21
Levels-of-Service for Intersections

	Average Total Delay Per Vehicle (seconds)	
Level of Service	**Signalized**	**Unsignalized**
A	0 to 10.00	0 to 10.00
B	10.01 to 20.00	10.01 to 15.00
C	20.01 to 35.00	15.01 to 25.00
D	35.01 to 55.00	25.01 to 35.00
E	55.01 to 80.00	35.01 to 50.00
F	80.01 and up	50.01 and up

Source: Highway Capacity Manual; Fifth Edition 2010

Acceptable levels of service for traffic circulation systems in the City of Coachella and Riverside County are discussed below.

City of Coachella: City of Coachella criteria, LOS "D" is allowed in "Community Development areas, only at intersections of any combination of Secondary Highways, Major Highways, Arterials, Urban Arterials, Expressways, conventional state highways or freeway ramp intersections. For the purposes of this analysis, LOS "D" is the minimum acceptable LOS for roadway segments.

Riverside County: Riverside County General Plan Policy C 2.1 states that the County will maintain the following County-wide target LOS: LOS C on all County-maintained roads and conventional State Highways. As an exception, LOS D may be allowed in Community Development areas at intersections of any combination of Secondary Highways, Major Highways, Arterial Highways, Urban Arterial Highways, Expressways or conventional State Highways. LOS E may be allowed in designated Community Centers to the extent that it would support transit-oriented development and pedestrian communities. For CMP streets or highways, the County accepts LOS E.

Major Streets and Intersections

The Project area is located in the central portion of Coachella. The following table summarizes characteristics of the nearest major roadways and intersections.

Table 2-22
Major Roadways in the Project area

Roadway	Orientation	General Plan Designation	No. of Lanes at Buildout	Forecasted 2035 Traffic Volume (vehicles/day)
Grapefruit Blvd (SR-111)	north/south	Enhanced Major Arterial Roadway (from the northern City boundary to Harrison Street)	4	30,000
		Major Arterial (from Harrison Street to Tyler Street)	4	-
		Primary Arterial (south of Tyler Street)	2	10,700
Airport Blvd	east/west	Primary Arterial (east of Fillmore)	4	4,730
Avenue 54	east/west	Primary Arterial (east of SR-111)	4	2,510
Source: Coachella General Plan (2035) Circulation Element.				

The Coachella General Plan identifies existing (year 2015) average daily traffic volumes (ADT) and levels-of-service (LOS) for roadway segments and intersections in the Project area. LOS is a qualitative measure of the operation of a roadway segment or intersection and considers speed, travel time, driving comfort, safety and traffic interruptions. For roadway segments, LOS measures the flow of traffic. For intersections, it measures the number of seconds a vehicle is delayed as it passes through an intersection.

LOS measurements are described using an alphabetical scale ranging from LOS A to LOS F. LOS A represents the best or free-flowing conditions, and LOS F represents the worst conditions or system failure. For roadway segments, LOS is based on a ratio of volume to capacity; as the ratio approaches 1.00 (maximum capacity), operations approach LOS F. Intersection delays of 10 seconds or less are LOS A, while delays of more than 35 seconds are LOS E, A being best conditions and E representing a substantial delay.

Operating conditions for major roadway segments in the project area are described in the following table. The data show that all major roadway segments are operating under LOS A (free-flowing) conditions, and all have available capacity to accommodate additional traffic. None of the segments are recommended for future roadway enhancements or studies. Certain roadways may be further widened and improved in the future to accommodate growth as set forth in the City and County General Plans.[168]

Table 2-23
Existing (Year 2015) Operating Conditions of Roadway Segments in the Project area

Roadway Segment	From	Existing Volume	Buildout Capacity[1]	Existing Capacity[2]	2035 V/C Ratio - LOS
SR 111	North of Ave 54	11,200	56,000	16,200	0.69 – C or Better
	South of Ave 54	10,700	56,000	16,200	0.66 – C or Better
	South of Ave 56	7,700	56,000	16,200	0.47 – C or Better
Ave 56	West of SR-111	5,700	32,300	16,200	0.35 – C or Better
	East of Fillmore	1,600	32,300	16,200	0.09 – A
Ave 58	East of SR-111	NA	32,300	16,200	0.20 – C or Better

Source: Table 4.9-2 and 4.9-6, Coachella General Plan Draft EIR - Circulation Element. 2015
2014 Traffic Volumes on California State Highways, Caltrans 2015.
1. Represents ultimate buildout capacity.
2. Represents current capacity per existing improvements per Riverside County General Plan Circulation Element (Table C-2: Link/Volume Capacity).

Existing Channel Access

CVWD currently has several points of access into the channel from surrounding public streets. Existing and potential access points include Avenue 54 at the channel, Airport Boulevard on the east and west side of the channel, Avenue 57 (extended), Highway 111 and Fillmore Street. Most of these access points are gate-controlled and are regularly used and maintained by CVWD staff. These points of access are also expected to serve project construction traffic.

Truck Routes

Truck routes facilitate the delivery of goods and materials, and provide access to major developments throughout the area. The following roads in the Project area are designated Truck Routes:[169]

- Airport Boulevard
- Grapefruit Blvd (SR-111)

168 Figure 4.9-1 (Existing Roadway System in the City of Coachella), Coachella General Plan Draft EIR.
169 Figure 4.9-2, Coachella General Plan DEIR.

Mass Transit

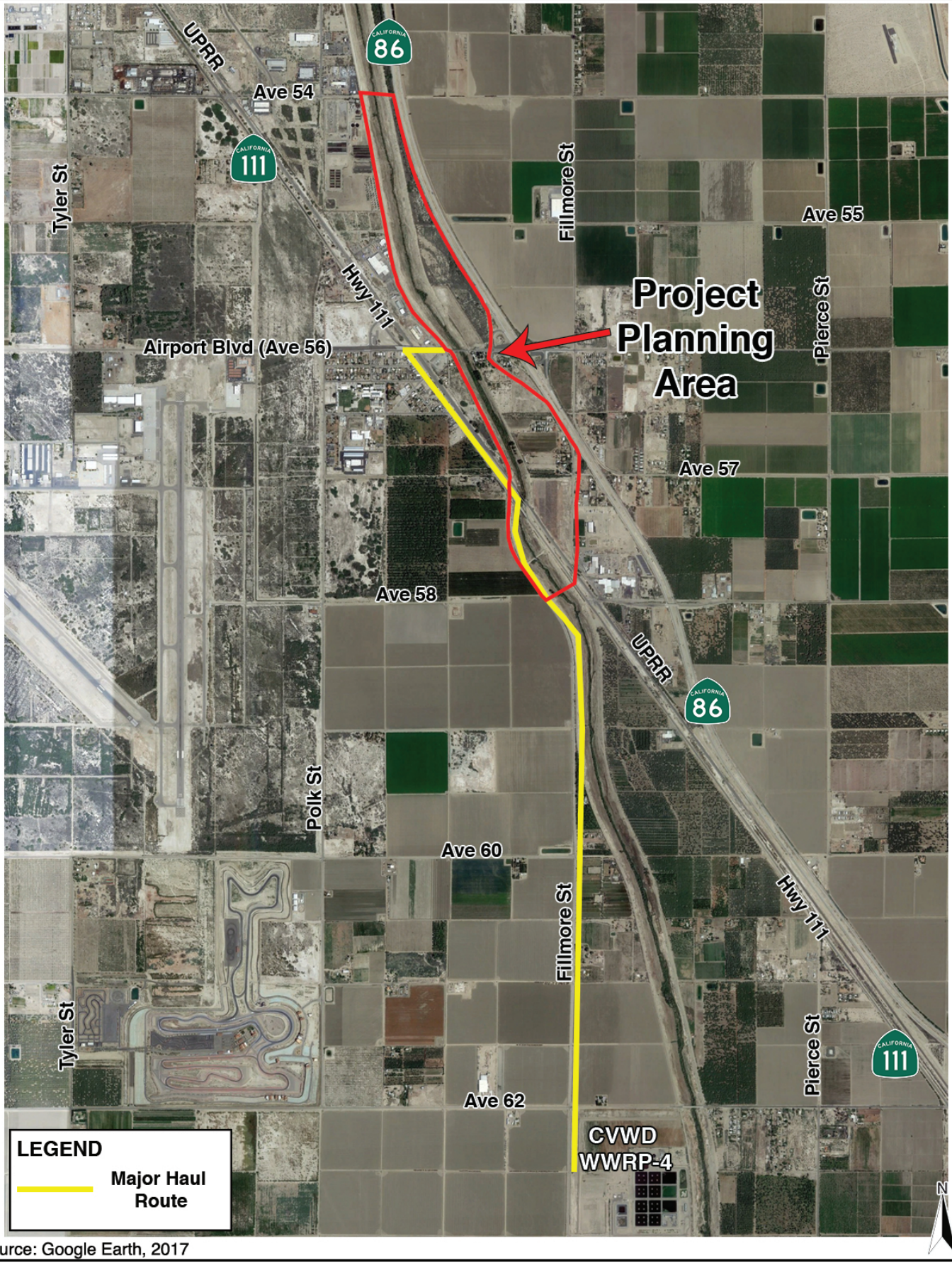
Sunline Transit Agency provides public transit services to the Coachella Valley and has a service area of approximately 1,120 square miles. Sunline buses are wheelchair accessible and have bicycle racks that can accommodate two or three bicycles per bus. The Sunline bus routes nearest to the project area are Line 91 and 95. Line 91 runs in the middle portion of the site on Airport Boulevard connecting the communities of Mecca and Coachella. Line 95 runs in the northern portion of the project area along Highway 86 and Avenue 52.[170] The nearest bus stop to the project site is located at the northwest corner of Airport Boulevard and Palm Street, approximately 1,700 feet west of the project site.

Bicycle Travel

Currently, there are very limited multi-modal facilities in the project area. The CV Link project was approved in 2017 and is currently planned for construction along this reach of the stormwater channel by 2021. The following designated bike routes are located in the project area.[171] All of them are Class III Bicycle Paths, which are paved, but unstripped on-road bicycle lanes.

- Avenue 52
- Avenue 54
- Grapefruit Boulevard (Hwy 111)

170 Ibid.
171 Figure 4-8; CVAG ATP City of Coachella.



Source: Google Earth, 2017

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Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Major Haul Routes in the Project Area
Coachella Valley Water District

WATER DISTRICT

Exhibit

2-10

Airports

The Jacqueline Cochran Regional Airport is a country owned, public use airport approximately 1 mile southwest of the Project area. The airport has two runways and covers an area of approximately 1,850 acres. The airport is a locally important source of noise primarily associated with aircraft operations at the airport, where the closest runway is approximately one mile to the west. The airport is located 0.9± miles west of the project area, between Airport Boulevard and Avenue 62. Annual aircraft operations (flights) at airport were estimated at 65,000 operations in 2002, none of which were of a commercial nature. There are an average of 209 operations per day, 98% of which was general aviation operation. The airport's master plan projects operations to reach some 110,000 annually by 2022, and to continue to grow along with the urbanization of the east Coachella Valley. While commercial passenger services are anticipated in the future there is no projected date when these might be offered.

Railways

The Coachella Valley is served by the Union Pacific Railroad (UPRR), which enters the west valley through the San Gorgonio Pass, generally parallels I-10 through the valley center, and then parallels Highway 111 from Indio to the east shore of the Salton Sea, where it then continues southeast towards Yuma. The UPRR is a major transcontinental railway carrying extensive freight operations as well as Amtrak passenger trains. This facility carries an average of between 40 and 50 trains per day. Most rail activity is freight traffic operated by UPRR, although Amtrak provides passenger service along the same tracks to Palm Springs and Indio. In recent years, UPRR added a full second track, parallel to the initial lines and is anticipating a 50% to 75% long-term increase in regional rail traffic. Two UPRR lines and bridges pass through the project site and area just north of the State Highway 111 channel crossing and could potentially be affected by the Proposed Project, as discussed below.

Emergency Access

The Project is in a relatively open area that is geographically connected to the City and County (and Caltrans) circulation network by SR 111 and 86, Airport Boulevard, Desert Cactus Drive, Fillmore Street and other roadways. The recently constructed Airport Boulevard bridge over State Highway 111 and the UPPRR lines further enhances emergency access and access in general. District and emergency access to the channel is currently available from a variety of points along the local roadway network, including Avenue 54, Airport Boulevard, Highway 111 and Fillmore Street.

2.18.6 Project Impacts

Potential Proposed Project impacts to transportation systems and traffic are primarily associated with the movement of construction equipment into and out of the various segments of the project. Roadways will also be affected by proximity to construction staging areas where occasional construction traffic will be associated with the fueling and servicing of construction vehicles, and delivery, storage and installation of construction materials.

Access to the channel during construction is expected to be largely the same as that currently available to the District for channel maintenance. Staging areas are envisioned within the existing CVWD rights-of-way along the channel services roads and in the upper elevations of the channel itself. No staging is planned outside of CVWD rights-of-way. CVWD has a variety of gated access points along the channel, including at Avenue 54 (extended), north and south of Airport Boulevard, Avenue 57 (extended), Fillmore Street and Avenue 58.

The Proposed Project would have an adverse impact on local transportation facilities and their operation if the project will

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

Less than Significant. The Proposed Project's potential impacts to traffic and the transportation system in the project vicinity are limited to those associated with channel construction activities. These activities will occur along the two-mile length of the project and will be completed within one year of commencement. In general, conventional construction techniques and equipment will be used, including motor graders, water trucks, dozers, excavators haul trucks and utility vehicles. The proposed construction will follow all applicable Federal, State, and local safety laws and regulations. Contractors will be required to provide CVWD with traffic control plans for all locations where construction traffic will interface with and/or use the public roadway network.

Areas of potential effect are those where construction equipment is moved onto and out of the project staging and construction areas. It is important to note that in almost all cases these points of construction access are the same as existing CVWD channel access. During construction, the hauling of excess channel materials off-site and the delivery of aggregate, steel and concrete will generate most of the regular, daily traffic that could affect local roads. Excavated material will be hauled to CVWD's Wastewater Reclamation Plant No 4 (WRP-4), which is located at approximately 3.5 miles south of the site and where the materials will be used for on-site flood protection at the plant. An estimated 29,000 haul trips will be required to transfer the excavated channel material to the WRP-4 site with this activity occurring throughout much of the 12-month construction period. At its peak, daily WRP-4 haul trip volumes are expected to be 145 to 150 round-trips per day. Traffic volume data for Fillmore Street is unavailable; however, anecdotal information indicates that traffic volumes are very low on the portion of Fillmore Street (from Highway 111 to WRP-4) where excavation haul traffic will occur. Traffic on Fillmore appears to be predominantly associated with surrounding agricultural activity and associated trucks, cultivation and other equipment.

Deliveries of aggregate, reinforcing steel, concrete and other construction equipment and are expected to originate from the north and access the project area via Highway 111 and Highway 86. Viable suppliers include those concrete and materials suppliers within six miles of the project site. Based upon material volumes estimated by project engineers, approximately 3,779 haul trips will be required to deliver construction materials to the site over the one year course of construction. Based upon an assumed nine-month materials delivery period, average truck traffic associated with materials deliveries would be approximately 20 round-trips per day. As discussed above, deliveries will be made to staging areas located within CVWD rights-of-way. Available staging and access points include the vicinity of Avenue 54, Airport Boulevard, Highways 111 and 86, and Fillmore Street. It is also important to note that a substantial percentage of vehicles currently on these roadways are composed of haul trucks and agricultural equipment.

It should also be noted that the two UPRR bridges that cross through the project area could be affected by construction of channel improvements. This facility carries an average of between 40 and 50 trains per day. Construction activity is not expected to disrupt the operations of these rail lines and project engineers are coordinating with UPRR to ensure that channel improvements are constructed in a manner that does not compromise UPRR facilities or operation. The Proposed Project will not have an adverse impact on UPRR facilities or operations.

In summary, traffic volumes on potentially affected streets are relatively low. With proper construction management and traffic control, the Proposed Project will not have an adverse effect on roadway network operations and will not conflict with either Coachella or County plans or policies pertaining to the performance of the circulation system.

Access to transit and to other modes of travel will not be affected. The future segment of CV Link planned north of Airport Boulevard is likely to be constructed following the subject channel improvements, and these facilities are being developed in close coordination with CVWD. The site is located on the edge of the urbanizing areas of Coachella and Thermal, and all portions of the project site are accessible from the existing roadway network.

All major roads and intersections in the project area currently operate at acceptable levels. Project construction will result in temporary, short-term traffic accessing the project area from existing roads. All project-related vehicle parking will occur on off of public roads and will be limited to CVWD easements and rights-of-way. With implementation of standard traffic management, no significant construction-related traffic delays, closures, or detours are anticipated. Impacts will be less than significant. Existing CVWD channel access will be used during project construction, and no new access roads or transportation facilities are proposed. The Proposed Project will not permanently cross or interfere with the use of circulation system, bicycle paths, or mass transit facilities.

Long-term maintenance will involve periodic channel inspections and less frequent repairs. It is anticipated that inspections will involve one or two utility trucks per inspection. The impacts of project construction and maintenance traffic on the existing roadway network will be negligible and will not adversely impact existing roads or intersections, their operation, or levels of service. Impacts will be less than significant.

Utility Projects

As previously discussed, traffic volumes on potentially affected streets are relatively low. Along Airport Boulevard, IID power pole work will require equipment within or adjacent to the road right-of-way and will require appropriate signage and traffic cones to ensure continued safe roadway operation. Within and adjacent to the Highway 111 right-of-way, CVWD and SCG activities will not encroach into travel lanes and will require appropriate signage and traffic cones to ensure continued safe roadway operation. All three agencies shall, as necessary, secure easements from Riverside County and/or Caltrans prior to initiation of work within road rights-of-way. These are programmatic activities for all three utilities and no new or specific mitigation measures are required. With proper construction management and traffic control, the utility relocation projects will not have an adverse effect on roadway network operations and will not conflict with either Coachella or County plans or policies pertaining to the performance of the circulation system.

b) ***Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.***

Less than Significant. As noted above, the Riverside County Congestion Management Program (CMP) is prepared by the Riverside County Transportation Commission (RCTC) and the last update was adopted in 2011. The portion of State Highway 111 within the project area is a CMP roadway that extends from US I-10 to the west to the Imperial County line to the south. As noted above, current traffic volumes on the subject segment of Highway 111 are relatively low and the roadway is currently operating at LOS A. Project construction traffic could affect Highway 111 traffic in the vicinity of Avenue 54, Airport Boulevard and the northern terminus of Fillmore Street. There will be no disruption to rail traffic. However, this additional traffic will be of low hourly volume, and will have a very limited and less than significant effect on the function of Highway 111 as a dependable component of the County Congestion Management Plan. Therefore, impacts will be less than significant.

Utility Projects
As discussed above, Project construction traffic could affect Highway 111 traffic in the vicinity of Avenue 54, Airport Boulevard and the northern terminus of Fillmore Street. There will be no disruption to rail traffic. However, this additional traffic will be of low hourly volume, and will have a very limited and less than significant effect on the function of Highway 111 as a dependable component of the County Congestion Management Plan. Therefore, impacts will be less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

No Impact. Project construction, including utility relocations, will occur more than a quarter-mile east of the nearest airport, primary access to which is from Airport Boulevard. The Jacqueline Cochran Regional Airport is a general aviation airport with relatively modest daily operations. The Proposed Project will not cause either an increase in traffic levels or a change in location of any facilities or improvements that that would results in substantial safety risks. The Project will have no impact on long-term air traffic patterns or operations, and any effects associated with construction vehicles will be temporary.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersection) or incompatible uses (e.g., farm equipment).

Less than Significant. As noted above, channel access will be taken from several locations along public streets, including possibly Avenue 54, Highway 111, Airport Boulevard, Avenue 57 (extended) and Fillmore Street. At these locations, traffic control will be needed to ensure that construction equipment entering and leaving the project site does so in a manner that does not create a hazard (See Mitigation Measure TRA-1). Beyond these points of project/roadway interface, the Proposed Project will not result in design features or incompatible uses that could increase traffic and circulation hazards. With the implementation of mitigation measures set forth below, the potential of the project to increase roadway hazards will be less than significant.

Utility Projects
The proposed utility relocation projects will not result in design features or incompatible uses that could increase traffic and circulation hazards. All three agencies shall, as necessary, secure easements from Riverside County and/or Caltrans prior to initiation of work within road rights-of-way. These are programmatic activities for all three utilities and no new or specific mitigation measures are required. With the implementation of mitigation measures set forth below, the potential of the project to increase roadway hazards will be less than significant.

e) Result in inadequate emergency access.

Less than Significant. Owing to the linear nature of the Coachella Valley Storm Channel, numerous roadways and two railroad crossings are located within and near the project area. Roadways of particular relevance for the project include those that would be used during project construction for site access, materials transport and other activities that could directly slow or delay local traffic during construction. However, none of the planned construction activities is expected to have a significant effect on access to or use of surrounding public roads by emergency management agencies (fire, police, medical). Construction access points will be managed by use of gates, flag-persons and other appropriate to ensure that undue delays or closures do not occur. Therefore, the Proposed Project will not result in inadequate emergency access in the project vicinity.

Utility Projects
None of the planned relocation activities are expected to have a significant effect on access to or use of surrounding public roads by emergency management agencies (fire, police, medical). Construction access points will be managed by use of gates, flag-persons and other appropriate to ensure that undue delays or closures do not occur. Therefore, the utility relocation projects will not result in inadequate emergency access in the project vicinity.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

No Impact. There are very limited multi-modal transportation facilities in the project area. Roadway improvements are generally below long-term, General Plan buildout dimensions and many multi-modal components of these roadways may not be constructed for years to come. As discussed above, the nearest Sunline bus routes to the Project area are Line 91 and 95. Line 91 runs in the eastern portion of the site through Airport Boulevard and a bus stop is located at the northwest corner of Airport Boulevard and Palm Street that will be unaffected by the Proposed Project. No significant adverse impacts will occur on the closest bus stop or route and/or passengers.

Utility Projects
None of the utility relocation projects will affect existing or proposed public transit. No significant adverse impacts will occur on the closest bus stop or route and/or passengers.

2.18.7 Mitigation Measures

The Proposed Project is expected to have minimal and generally less than significant impacts on the local transportation system, including roadways, rail lines and multi-modal facilities. Nonetheless, to further ensure that impacts are less than significant, the following mitigation measures are recommended.

TRA-1 Standard Requirements – Construction Management and Traffic Control Plan
The Construction Contractor shall provide written assurance to CVWD that traffic-related construction activities shall be conducted in compliance with all applicable federal, state, county and local statutory and regulatory requirements for public safety. In order to minimize or avoid accessibility issues for adjacent properties, the Construction Contractor shall implement construction management strategies and traffic control and operations plans that maximize the efficiency of construction and minimize the disruption of traffic flow on adjoining streets. Traffic control plans shall be approved by CVWD and shall include requirements that on public streets at least one travel lane remain open in each direction; that signage be installed for road work and/or detours, as necessary; and that emergency vehicle access is not affected.

TRA-2 Plan, Permits, and Approvals
All necessary plans, permits or approvals, including but not limited to traffic control plans, encroachment or other permits from Caltrans, Union Pacific Railroad, Imperial Irrigation District and others, shall be prepared by the Construction Contractor for and approved by CVWD prior to the initiation of site disturbance such as grading, excavation, hauling, paving and other construction activities where public streets may be affected. Prior to the initiation of site improvements, CVWD shall confer with the appropriate Coachella Public Works Department, County Transportation Department, Caltrans and the Union Pacific Railroad to ensure that construction activities and traffic control are carried out in a manner that causes minimal disruption to traffic on adjoining facilities.

TRA-3 Maintenance of Existing Roads
The Construction Manager shall be required to identify and promptly repair any project-related damage to existing public roads. Upon completion of the construction activities such repairs shall be made permanent. The contractor shall monitor the condition of these routes throughout the construction process and, in the event of an accidental load spill, to arrange for the immediate cleanup of any spilled material with street sweeping or other procedures, as needed.

TRA-4 Construction Access and Staging
The final location and design of channel construction staging and access shall comply with any applicable City and/or County access and design standards, and be reviewed by the Project Engineer. CVWD shall submit traffic control plans to the City and County prior to the issuance of grading and/or construction permits.

TRA-5 Construction Staging Lighting
Properly designed and maintained staging and access area lighting shall be provided along the channel as identified in the final plans, to facilitate the safe movement of vehicular, pedestrian and bicycle traffic through the project area, and to ensure good visibility under both daylight and nighttime conditions.

2.18.8 Significance After Mitigation

With adherence to the mitigation program, the Proposed Project will have a less than significant adverse impact on transportation facilities and operations and traffic patterns because the construction traffic management plan and use of best management practices will ensure traffic impacts are reduced to less than significant levels. Once completed, the Proposed Project will ensure that the project area south of Avenue 54 is safe from the current 100-Year flood threat, and that the four project bridges over the channel will be above the 100-year flood water surface elevation. This will ensure that "all-weather" functionality during major storm events. The impact of the Proposed project on local and regional transportation facilities will be less than significant with mitigation.

2.18.9 Cumulative Impacts

According to the existing Circulation Elements of the City and County General Plans, all roadway segments and intersections analyzed within the project area currently operate at acceptable levels of service. The Proposed Project will not require or affect any changes to the existing highways or local streets, nor it will generate any significant permanent traffic in the area. Therefore, the Proposed Project would not contribute to any cumulatively considerable impacts related to transportation and traffic.

2.19 Utilities and Service Systems

2.19.1 Introduction

This section of the EIR describes existing utilities and service systems located within or in proximity to the CVSC Improvement Project area, and analyzes the potential impacts of the Proposed Project to these utility and service systems. A wide range of data and information, ranging from research to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects. Utilities and service systems discussed in this section include water, wastewater, solid waste facilities, electricity, natural gas, and telecommunications.

2.19.2 Thresholds of Significance

Project impacts are analyzed below using the thresholds of significance set forth in Appendix G of the CEQA Guidelines. Threshold question "h. is derived from Appendix F of the CEQA Guidelines. The Proposed Project could have a significant adverse effect on utilities and service systems if it would:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

d) Not have sufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

f) Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

g) Not comply with federal, state, and local statutes and regulations related to solid waste.

h) Result in significant adverse impacts on energy resources and delivery systems.

2.19.3 Regulatory Framework

Federal

No federal regulations relative to utilities and service systems would be applicable to the proposed CVSC improvement project.

State

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the Federal Clean Water Act (CWA) and regulates discharges to waters of the State. Waters of the State include more than just waters of the U.S., including groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as broadly defined by the Act and going beyond the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted pursuant to Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and Regional WQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan.

In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-source point controls (NPDES permits or Waste Discharge Requirements), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (Public Resources Code [PRC], Division 30), enacted through Assembly Bill (AB) 939 and modified by subsequent legislation, required all California cities and counties to implement programs to reduce, recycle, and compost at least 50% of wastes by the year 2000 (PRC Section 41780). The California Department of Resources, Recycling, and Recovery determines compliance with this mandate to divert generated waste (which includes both disposed and diverted waste).

Regional and Local

Riverside County Integrated Waste Management Plan

In compliance with AB 939, Riverside County adopted an Integrated Waste Management Plan (CIWMP) in 1996 to divert a minimum of 25% solid waste landfill by 1995 and 50% by the year 2000. The CIWMP does not specifically address the reduction of construction and demolition debris or operational waste as related to the project, but provides guidelines for managing waste, which are incorporated in the analysis.

City of Coachella Municipal Code, Chapter 17.90

Chapter 17.90 was adopted by Ordinance 1065, in 2014. The code contains salvage requirements to implement City land use regulations, development standards and operational restrictions for the establishment of recycling operations to protect the public health, safety, general welfare, and quality of life in the City, while providing opportunities for certain recycling operations to establish in the City's commercial and industrial districts.

2.19.4 Environmental Setting

Domestic Water

Domestic water service to the planning area is provided by both the City of Coachella and CVWD. City water lines in the project vicinity are limited to an existing 12-inch line in the Avenue 54 right-of-way immediately west of the channel. CVWD facilities include 6-inch, 8-inch and 24-inch domestic water lines within or adjacent to the rights-of-way of Airport Boulevard, Polk Street, State Highway 111 (Grapefruit Boulevard), Church Street, Center Street and Kokell Ave, all on the west side of the channel.

Wastewater Treatment

In the project planning area, community sanitary sewer services are provided by the City of Coachella and CVWD. CVWD sewer lines in the project vicinity include an 8-inch PVC force main in the Airport Boulevard right-of-way, which extends south (upstream) along Orange Street and the west side of the channel and east of the UPRR lines to a lift station. The lift station is feed by a 10-inch PVC that extends west along Church Street and serves portions of the community of Thermal. A 12-inch sewer force main is also located in Airport Boulevard and extends from the Highway 86 right-of-way west on the Airport Boulevard bridge over the channel and beyond the planning area. The 12-inch and 8-inch force mains within the Airport Boulevard right-of-way will be protected in place and will not be significantly impacted by the channel improvement project.

The City of Coachella sanitary sewer system in the channel project planning area is limited to a local sewage collection line between Avenue 54 and 52, and the wastewater treatment plant located on the west side of the channel and south of Avenue 54. The City of Coachella's wastewater treatment plant is located in the southern most portion of the City on 54th Avenue and immediately west of the channel. The plant consists of head works with wet well, screening, and raw sewage lift station; two modified activated sludge units with secondary clarifiers; an effluent metering station; a chlorine contact chamber; a dichlorination station prior to discharge to the Coachella Valley Stormwater Channel along with a series of sludge dewatering beds. The ponds also have the capacity of pumping effluent to irrigated pastures south of the plant. The channel improvement project itself will not generate a demand for sanitary sewer services or facilities, and construction personnel will be provided potable restrooms at the job site. Sanitary sewer facilities are further discussed below.

Irrigation Water

An existing underground irrigation lateral line (99.8-0.51) crosses Highway 111, the UPRR, and the CVSC at Avenue 57, approximately 10-15 feet north of the roadways midsection line. The irrigation lateral and associated rights of way are owned by the Bureau of Reclamation. The portion of the irrigation lateral that extends from the top of the western levee to 100 feet west of the eastern levee (approximately 520 feet in length) will be relocated by constructing a new pipeline approximately 75 feet north and reburied within the channel. A proposed 72-inch pipe casing will connect to the existing irrigation pipes. Additional improvements will include replacement of valves and other ancillary equipment west of the channel and Highway 111, as shown on Exhibit 1-6A.

Solid Waste Management

Burrtec Waste and Recycling Services provides solid waste and recycling collection services to the unincorporated community of Thermal and the project site. Solid waste that is collected from this area is transported to the Mecca II Landfill, which is located in the adjacent unincorporated community of Mecca. The Mecca II Landfill has a permitted capacity of 452,182 cubic yards and a maximum disposal of disposal capacity of 400 tons per day. This landfill is slated to close in 2098. The Riverside County Lamb Canyon Landfill has a permitted capacity of 33,041,000 cubic yards and a maximum disposal capacity of 5,000 tons per day. This landfill has an estimated closure date of 2021. This landfill is equipped to accept construction, demolition materials, and non-RCRA hazardous waste (CalRecycle 2015).

Energy Services

In the project area, Imperial Irrigation District (IID) provides electricity service. In the planning area, IID has overhead lines near and in a few cases within the project planning area. IID also has a substation located immediately west of the channel and at the east extension of Church Street in Thermal. The proposed channel improvement project has the potential to impact existing IID facilities, including overhead transmission lines located within or adjacent to CVWD channel right-of-way. IID transmission lines K and K47 occur within the project planning area. The potential for the project to adversely impact IID facilities is analyzed in this Section of this EIR.

The project also has the potential to impact a high-pressure natural gas line of Southern California Gas Company, which is located within or near the planning area. These include an 8-inch high-pressure line crossing beneath the channel south of Highway 111. A 4-inch gas line crosses beneath the channel in the vicinity of Avenue 54 and within the project planning area.

Also of note is the location of a 20-inch Kinder Morgan petroleum pipeline that extends from approximately 200 feet upstream and 200 feet downstream of the channel, between Highway 111 and the UPRR lines. At this time, it has been determined that the Project does not require the relocation of this pipeline.

Data and Telecommunications
Frontier provides telecommunications and data services to the project planning area. A 12-inch fiber optic cable conduit is located within and crosses the southern portion of the channel between the UPRR lines and Highway 111. At this time, it has been determined that the Project does not require the relocation of this cable. Spectrum cable services provides media, telephone and internet services to the project planning area.

The potential of the proposed CVSC improvement project to impact these facilities is evaluated Section 2.19 of this EIR.

2.19.5 Existing Conditions

Domestic Water
The project area is served by two domestic water purveyors: Coachella Valley Water District (CVWD) and Coachella Water Authority (CWA). Each is briefly described below.

Coachella Valley Water District
CVWD was formed in 1918 under the County Water District Act provisions of the California Water Code. CVWD's service area extends from the south end of Desert Hot Springs to Indio. CVWD relies on a combination of local groundwater, Colorado River water, State Water Project (SWP) water, and treated water to meet water demands. The Coachella Canal brings Colorado River water from the All-American Canal near the Mexico-U.S. border and traverses the southeastern margin of the valley. SWP water is obtained by exchange with Metropolitan Water District of Southern California, as CVWD does not have a direct connection to the SWP. The only direct water source for CVWD's urban potable water use is local groundwater. Although Colorado River and SWP water are used to replenish the groundwater basin, the potable water distribution system does not currently receive water directly from either imported water source.

City of Coachella
The Coachella Water Authority (CWA) was established in 1957, and is administered and managed by the Utilities General Manager. The City of Coachella is responsible for providing water service to its residents, and is the water supplier for the entire City service area. The main source of supply for the CWA is the Coachella Valley Groundwater Basin, specifically the East (Lower) Whitewater River Subbasin.[172] CWA works with CVWD to ensure a sufficient and reliable water supply for development projects within the City of Coachella are provided in a manner consistent with its Urban Water Management Plan (UWMP). CWA's primary source of fresh water is groundwater extracted from deep wells in the Indio Subbasin of the Coachella Valley Groundwater Basin.

Domestic Water Service
Domestic water service to the planning area is provided by both the City of Coachella and CVWD. City water lines in the project vicinity are limited to an existing 12-inch line in the Avenue 54 right-of-way immediately west of the channel. CVWD facilities include 6-inch, 8-inch and 24-inch domestic water lines within or adjacent to the rights-of-way of Airport Boulevard, Polk Street, State Highway 111 (Grapefruit Boulevard), Church Street, Center Street and Kokell Ave, all on the west side of the channel.

Wastewater
Two agencies provide sewer service and wastewater treatment within the project area: Coachella Valley Water District (CVWD) and Coachella (City) Sanitary District (CSD). CVWD owns and operates five wastewater reclamation plants (WRPs) that receive a combined average of 18 million gallons of wastewater per day. Two of CVWD's five water reclamation plants produce treated water, which is primarily used for irrigation of golf courses and large landscaped areas.

[172] Coachella General Plan (2012), DEIR

CSD was established in 1936 and maintains approximately 90 miles of wastewater conveyance pipeline, two pump stations, and a wastewater treatment plant. The City of Coachella's wastewater treatment plant is located at Avenue 54 and its capacity is 4.5 million gallon per day (MGD). Currently the WWTP serves an average daily demand of approximately 2.9 MGD.

The City also receives wastewater conveyance and treatment services through the Valley Sanitary District (VSD) for flows generated within the incorporated boundary; however, CSD is the primary service provider. The CSD currently serves 6,500 Equivalent Dwelling Units (EDUs) and approximately 3,500 customers via its wastewater conveyance network.[173] These customers consist primarily of residential development with a light mix of commercial, industrial and some agricultural customers.

CVWD Wastewater Facilities

CVWD sewer lines in the project vicinity include an 8-inch PVC force main in the Airport Boulevard right-of-way, which extends south (upstream) along Orange Street and the west side of the channel and east of the UPRR lines to a lift station. The lift station is feed by a 10-inch PVC that extends west along Church Street and serves portions of the community of Thermal. A 12-inch sewer force main is also located in Airport Boulevard and extends from the Highway 86 right-of-way west on the Airport Boulevard bridge over the channel and beyond the planning area. The 12-inch and 8-inch force mains within the Airport Boulevard right-of-way will be protected in place and will not be significantly impacted by the channel improvement project.

Coachella Wastewater Facilities

Coachella's sanitary sewer system in the channel project planning area is limited to a local sewage collection line between Avenue 54 and 52, and the wastewater treatment plant located on the west side of the channel and south of Avenue 54. The plant consists of head works with wet well, screening, and raw sewage lift station; two modified activated sludge units with secondary clarifiers; an effluent metering station; a chlorine contact chamber; a dichlorination station prior to discharge to the Coachella Valley Stormwater Channel along with a series of sludge dewatering beds. The ponds also have the capacity of pumping effluent to irrigated pastures south of the plant. The channel improvement project itself will not generate a demand for sanitary sewer services or facilities, and construction personnel will be provided potable restrooms at the job site.

Solid Waste Disposal

Burrtec Waste and Recycling Services provides solid waste and recycling collection services to the City of Coachella and the unincorporated community of Thermal and the project site. Solid waste that is collected from the project area is transported to the Mecca II Landfill, which is located south unincorporated community of Mecca. The Mecca II Landfill has a permitted capacity of 452,182 cubic yards and a maximum disposal of disposal capacity of 400 tons per day. This landfill is slated to close in 2098. The Riverside County Lamb Canyon Landfill has a permitted capacity of 33,041,000 cubic yards and a maximum disposal capacity of 5,000 tons per day. This landfill has an estimated closure date of 2021. This landfill is equipped to accept construction, demolition materials, and non-RCRA hazardous waste (CalRecycle 2015).

Energy Services

Imperial Irrigation District (IID) provides electricity service to the eastern Coachella Valley, including the communities of Coachella and Thermal. In the planning area, IID has overhead lines near that in a few cases are located within the project planning area. IID also has a substation located immediately west of the channel and at the east extension of Church Street in Thermal. As discussed in Section 2.19.6, below, the Proposed Project has the potential to impact existing IID facilities, including overhead transmission lines located within or adjacent to CVWD channel rights-of-way. IID transmission lines K and K47 occur within the project planning area.

[173] Coachella General Plan Admin Draft EIR, Impact Sciences (1098.001).

The project also has the potential to impacts a high-pressure natural gas line of Southern California Gas Company, which is located within or near the planning area. These include an 8-inch high-pressure line crossing beneath the channel south of Highway 111. A 4-inch gas line crosses beneath the channel in the vicinity of Avenue 54 and within the project planning area.

Also of note is the location of a 20-inch Kinder Morgan petroleum pipeline that extends from approximately 200 feet upstream and 200 feet downstream of the channel, between Highway 111 and the UPRR lines.

Communications
Frontier Communications provides telecommunications and data services to the project planning area. A 12-inch fiber optic cable conduit is located within and crosses the southern portion of the channel between the UPRR lines and Highway 111. Spectrum (Charter Communications) is a cable services provider of media, telephone and internet services to the project planning area.

2.19.6 Project Impacts

a) Would the Project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The Proposed Project is subject to the federal Clean Water Act (CWA), which prohibits unauthorized discharges from construction projects unless in compliance with an NPDES permit. The SWRCB is the water discharge permitting authority in California, and adopted an NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009, as amended by Order No. 2010-0014). The Order applies to construction sites that include one or more acre of soil disturbance. Construction activities include clearing, grading, grubbing, excavation, stockpiling, and reconstruction of existing facilities involving removal or replacement. As set forth in Section 3.10: Hydrology and Water Quality, the Proposed Project shall be managed in a manner that avoids, minimizes and mitigates potential unauthorized discharges into surface or ground water.

Beyond the potential for project site runoff, no wastewater will be generated as part of the project. Oils, solvents, lubricants and other potentially hazardous materials will be collected and disposed on in an approved manner. Human waste will be addressed through on-site portable toilets, which will be regularly emptied and maintained. Therefore, the project will not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (CRRWQCB). No significant impact is anticipated.

Utility Projects
Similar to the channel improvement portion of the Project, the utility relocation projects are subject to the federal Clean Water Act (CWA), which prohibits unauthorized discharges from construction projects unless in compliance with an NPDES permit. The Order applies to construction sites that include one or more acre of soil disturbance. As set forth in Section 2.11: Hydrology and Water Quality, the Proposed Project shall be managed in a manner that avoids, minimizes and mitigates potential unauthorized discharges into surface or ground water. None of the utility projects involves an acre of more of site disturbance.

No wastewater will be generated as part of the utility relocations. Oils, solvents, lubricants and other potentially hazardous materials will be collected and disposed on in an approved manner. Human waste will be addressed through on-site portable toilets, which will be regularly emptied and maintained. Therefore, the project will not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (CRRWQCB). No significant impact is anticipated.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The scope of the Proposed Project is limited to the construction of channel improvements and associated activities that, once completed, will have little or no effect on or generate a demand for utilities or services. Neither water nor wastewater treatment are required by the Proposed Project. Therefore, the Proposed Project will have no effect on such facilities and will induce no environmental effects in this regard.

Utility Projects
Once construction is completed, neither water nor wastewater treatment are required by the utility relocations. Therefore, the utility relocations will have no effect on such facilities and will induce no environmental effects in this regard.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact. The Project consists of construction of channel improvements to increase capacity in the subject reach on the CVSC reach to convey the 100-Year flow and meet freeboard and other CVWD design standards for stormwater management facilities. The proposed improvements to the CVSC channel will result positive impacts to local and regional drainage by increasing the channel capacity and reducing flooding hazard. As analyzed in the balance of this EIR, a wide range of potential environmental impacts and issues are associated with this project. At this time, only project impacts to air quality and the noise environment remain as being significant with the application of practicable mitigation measures.

Utility Projects
Relocation of the irrigation lateral, SCG gas pipeline, and IID poles will not require the construction of a new stormwater drainage facility. The utility relocation projects are part of the Proposed Project, which in and of itself is designed to increase capacity in the subject reach on the CVSC to convey the 100-Year storm flow and meet freeboard and other CVWD design standards for stormwater management facilities.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less than Significant Impact. The Proposed Project will generate demand for water resources for concrete, dust control, hydro-consolidation of soils, haul truck cleaning, and related construction activities. Water demand associated with project construction was calculated based on the extent and type of development. It is assumed, based on analysis of comparable construction projects, that construction of the Proposed Project could generate a demand of up to 4.42± acre-feet for concrete and 53± acre-feet for all other construction activities, including and especially hydroconsolidation and dust control over the course of construction. Post-construction, periodic channel maintenance will involve vegetation mowing and removal and remediating channel grading that is anticipated to occur approximately every three years and generate an annual average demand of 2 acre-feet of water.

Putting the water demand for the subject channel improvements, operation and maintenance into context helps to understand the relative significance of this demand. For 2015, the Coachella Valley Integrated Water Management Plan has projected valley-wide water demand of 689,753 acre-feet.[174] The CVSC project's modest one-time demand of 57± acre-feet constitutes a 0.00008% increase in demand during the project's construction year.

[174] "Coachella Valley Integrated Water Management Plan", prepared by Coachella Valley Regional Water Management Group. 2010.

Therefore, and as demonstrated, there are sufficient water supplies available to serve the project and meet its comparatively modest and one-time water demand for construction. No new or expanded entitlements are needed. Less than significant impacts would occur as a result of implementation of the project, and no mitigation is required.

Utility Projects
As discussed above, there are sufficient water supplies available to serve the Project-related utility relocation projects and meet their comparatively modest and one-time water demand for construction. No new or expanded entitlements are needed. Less than significant impacts would occur as a result of implementation of the subject utility relocation projects, and no mitigation is required.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The Proposed Project will not generate a permanent demand for wastewater treatment facilities. During construction, portable toilets will be used by construction crews and will generate a modest amount of wastes requiring treatment. Portable toilets will be periodically emptied and delivered to a wastewater collection and/or treatment facility. Therefore, the Proposed Project will have no impact on wastewater collection or treatment facilities.

Utility Projects
Similar to the channel improvement portions of the Project, the utility relocation projects will not generate a permanent demand for wastewater treatment facilities. During construction, portable toilets will be used by construction crews and will generate a modest amount of wastes requiring treatment. Portable toilets will be periodically emptied and delivered to a wastewater collection and/or treatment facility. Therefore, the utility relocation projects will have no impact on wastewater collection or treatment facilities.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Less than Significant Impact. The subject reach of the CVSC is an unlined trapezoidal structure with limited perennial flows associated with municipal wastewater treatment discharges, rising groundwater from subsurface drainage facilities serving primarily agricultural lands, and breakout of the perched groundwater table through which the channel passes. Existing bridge structures will largely remain as they are, with the exception of the proposed channel bottom and abutment lining, and slope protection located at the bridges. Vegetation is periodically controlled and delivered to a green waste recycling operation. Therefore, a limited volume of solid waste (such as vegetation, concrete, asphalt, and framing materials) will be generated during project construction. Much of the solid waste generated will be recycled.

Riverside County has adopted a Countywide SRRE that establishes goals, programs, and methodologies for achieving 50 percent diversion of solid waste from landfills. Each of the waste management agencies that serve the project area also provides recycling services. Remaining will be handled and disposed of by existing local solid waste service provider. Landfills within the project area have sufficient capacity to accept anticipated project waste.

The Project is not expected to generate a large amount of solid waste. Waste produced by construction activities, including the utility relocation projects, will be handled and disposed of by the contractor or existing local solid waste service providers, and will comply with federal, state, and local statutes and regulations related to solid waste. Therefore, no significant impacts would occur from the project and no mitigation is required.

h) Result in significant adverse impacts on energy resources and delivery systems.

Less than Significant Impact. Construction of the Proposed Project will require the use of petroleum-based fuels to power equipment and provide on-site power. The project constitutes a one-time demand its impacts on supplies of petroleum-based fuels will be less than significant.

As discussed above, the Proposed Project will impact the facilities of existing energy service providers. Imperial Irrigation District (IID) has overhead lines near and in a few cases within the project planning area. IID also has a substation located immediately west of the channel and at the east extension of Church Street in Thermal. The Proposed Project has the potential to impact existing IID facilities, including requiring the relocation of several power poles and associated supporting poles along the west channel right-of-way.

Based on discussions between CVWD and IID, poles will be relocated at the two discussed locations, on Airport Boulevard on the east and west bank of the channel, and west of the channel in the vicinity of the Lateral 99.8. Relocation activities has been closely coordinated with CVWD and IID. As discussed in Section 1Introduction, the relocation, removal and installation of new and existing IID power poles have been made a part of the Project design and have been discussed with IID, and analyzed throughout this document. Based upon plans prepared by IID and reviewed by CVWD, the proposed channel improvement Project will not have a significant adverse impact on IID's energy resources or delivery systems.

The Proposed Project also has the potential to impact an 8-inch high pressure natural gas line owned and operated by Southern California Gas Company. As with the IID facilities, the relocation of this gas line is a part of the Project and has been analyzed throughout this EIR. SCG will install a new 8-inch gas line to replace that line that will be impacted by the future channel improvements. Once constructed, the new line will be connected to the existing line well outside the channel right-of-way, the "retired line in the channel will be removed during construction of channel improvements, and the balance of the retired 8-inch line will be abandoned in-place. CVWD and the project contractor will coordinate with SCG so that the utility can relocate these lines without an undue disruption of service. The relocation of these lines will be the responsibility of the SCG.

Also of note is the location of a buried 20-inch Kinder Morgan petroleum pipeline that crosses beneath the channel and extends from approximately 200 feet upstream and 200 feet downstream of the channel, between Highway 111 and the UPRR lines. At this time, it has been determined that the Project does not require the relocation of this pipeline.

While the Proposed Project will require the relocation of electric power lines and a natural gas line, these activities will be closely coordinated between CVWD and the individual utilities. With proper coordination, the Proposed Project will have a less than significant impact on these resources/systems.

2.19.7 Mitigation Measures

As noted above, the Proposed Project will result in the construction of new stormwater facilities, as well as the relocation of certain utilities that are provided for in the project and analyzed in this EIR. As proposed, neither the Project nor its associated utility relocations will have a significant impact on utilities. No further mitigation is required.

2.19.8 Significance After Mitigation

As noted, the Proposed Project will result in less than significant impacts to utilities without mitigation. Project impacts will remain less than significant.

2.19.9 Cumulative Impacts

The Cumulative Impacts analysis is provided per State CEQA Guidelines Section 15130. There will be very limited cumulative effects associated with the Project. Most public services and utilities are not needed to complete the Proposed Project, and those services or utilities that may serve will not result in significant adverse effects to these services or utilities. In this context and in light of the very limited impacts associated with the Proposed Project, it would have a less than cumulatively considerable impact on utilities and service systems.

Coachella Valley Stormwater Channel Improvement Project Avenue 54 to Thermal Drop Structure DRAFT ENVIRONMENTAL IMPACT REPORT

3.0 PROJECT ALTERNATIVES

3.1 Introduction

Section 3 of the EIR addresses the potential impacts associated with the development of various proposed alternatives.

Public Resources Code Section 21002.1 and CEQA Guidelines Section 15126.6 provide specific guidance on the need for alternatives to a Proposed Project. CEQA does not require that every potential alternative to a project be analyzed. Rather, an EIR must consider potentially feasible alternatives that meet most or all of the basic objectives of the Proposed Project and avoid or substantially reduce the significant environmental impacts of the Proposed Project. CEQA further requires that the analysis of alternatives contain sufficient information to allow for "meaningful evaluation, analysis and comparison with the Proposed Project." Finally, a No Project alternative must be considered, in order to allow decision makers to assess the impacts of approving the Proposed Project, versus not approving it.

This section describes and analyzes the potential impacts of three potentially feasible alternatives: Alternative B: "Fully-Lined Channel," Alternative C: "Slope Lining and Channel Widening," and Alternative D: "No Project" Alternative (Guidelines, Section 15126(3)); the No Project alternative considers impacts associated with leaving the channel in current conditions.

This EIR analyzes the following list of resource topics:

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

To provide a basis for comparison with each of the areas of environmental impact that were analyzed in Section 2 for the Proposed Project, the same categories of resources topics are considered in this section for each Alternative. Where mitigation is required for an alternative and the same mitigation measures required for the Proposed Project in Section 2 apply, a reference to the appropriate Section 2 mitigation measures is made. Where additional mitigation measures are required for an alternative, the alternative-specific mitigation measures are listed in this Section.

3.2 Statement of Project Goals and Objectives

The purpose of the Proposed Project is to design and construct channel improvements to increase conveyance capacity in the subject reach of the CVSC to contain and convey the 100-Year flow, meet current CVWD design standards for stormwater management facilities, and to remove lands within the area of benefit from the existing threat of flooding during a 100-year storm event. Pursuant to CEQA Guidelines Section 15124(b), the project description includes a statement of objectives to assist the District in developing a reasonable range of alternatives to evaluate in this EIR. These objectives are intended to explain the purpose of the project, and to aid the decision-makers in preparing findings or a statement of overriding considerations, if necessary.

The project objectives identify the purpose of the Project. CVWD has identified the following list of criteria as the objectives for the Project.

- Provide protection to life and property during the 100-year flood events.
- Safely convey the 100-year flood flows within the project area.
- Minimize major diversions, provide stormwater capture opportunities and perpetuate the natural drainage pattern of the area to the maximum extent practicable.
- Provide the most economical combination of facilities considering environmental constraints, right-of-way acquisition, construction, and maintenance costs.
- Allow CVWD to continue to meet government regulatory standards for stormwater protection.
- Improve the subject reach of the CVSC to meet current CVWD criteria for stormwater management facilities.
- Reduce flood hazards and revise FEMA Flood Insurance Rate Maps to reflect the benefit of the project to adjacent property owners and/or community.

3.3 Summary of Alternatives

This section identifies and analyzes each alternative to the Proposed Project which is referred to as Alternative A. Refer to Section 1 Introduction and Project Description for a complete description of Alternative A.

3.3.1 Alternative B – "Fully-Lined Channel"

Alternative B proposes to fully line the channel cross section (sides and bottom) with reinforced concrete from approximately 1,000 feet upstream of Airport Boulevard downstream to the Thermal Drop Structure. Upstream of the fully lined section, only slope protection would be constructed. The channel invert would be lowered approximately five feet over the same extents as full lining construction. See Exhibit 1-7. Similar to Alternative A, Alternative B will also require relocation of Irrigation Lateral 99.8 within and east and west of the channel (Exhibit 1-6A), relocation of the SCG 8-inch natural gas line (Exhibit 1-6B), and removal and relocation of several IID power poles (Exhibits 1-6C and 6D).

This alternative can pass the 100-Year flow and provide four feet of freeboard. The concrete lining would reduce the resistance to flow sufficiently to convey the design flow and eliminate the need to maintain vegetation in the fully-lined portion of the channel. Reinforcement or other upgrades comparable to those associated with Alternative A will be required at bridge piers and substructures. These upgrades may take the form of extending existing bridge pile cross bracing and side curtains to provide supplemental support and protection of bridge supports. In addition, this alternative would increase the channel cross-section by steepening channel side slopes. Any widening of the channel would be restricted to the existing CVWD rights-of-way.

Table 3-1
Alternative B – Fully-Lined Channel

Geometry	Lower invert approx. five feet from approx. 1,000 feet upstream of Airport Boulevard to the Thermal Drop Structure.
Slope Protection	Side slope lining from Ave. 54 to Thermal Drop.
Channel Bottom	Fully lined channel from approx. 1,000 ft. upstream of Airport Boulevard to Thermal Drop.
Airport Boulevard Bridge	Flow area under bridge will be increased by lowering channel invert (see "Geometry" above).
North UPRR Bridge	Flow area under bridge will be increased by lowering channel invert (see "Geometry" above). Potential extension of pile cross bracing and side curtains by UPRR.
South UPRR Bridge	Flow area under bridge will be increased by lowering channel invert (see "Geometry" above). Potential extension of pile cross bracing and side curtains by UPRR.
HWY 111 Bridge	Flow area under bridge will be increased by lowering channel invert (see "Geometry" above).
Channel Vegetation	Maintained channel vegetation from Ave 54 south to 1,000 feet north of Airport Boulevard
Target Flow Rate:	100-year (39,000 cfs)
Hydraulic Design Criteria Met (FEMA 100-Year, CVWD 100-Year)	FEMA 100-Year, CVWD 100-Year
Maintenance Issues	Periodic mowing of vegetation north of fully lined channel reach.
ROW Acquisition	No
Relocation Required	No
Area/Percentage of Lined Channel Bottom	Area: 47.65 acres; Percentage: 41 %
Total Import/Export	Import: 124,303 CY aggregate/concrete/steel; Export: 319,000 CY excess soil; Net Import/Export: 194,697 CY
Impacts to CDFW Waters (Acres)	Temporary Impacts: 59.06 acres; Permanent Impacts: 49.09 acres
Impacts to Waters of the US (Acres)	Temporary Impacts: 37.82 acres; Permanent Impacts: 31.26 acres

3.3.2 Alternative C – "Slope Lining and Channel Widening"

Alternative C would provide slope protection along the entire length of the subject channel reach. The existing channel bottom would be unlined except at the bridges, and a soft bottom along most of the channel where vegetation will remain with minimal maintenance. This alternative is only feasible with the widening of the eastern portion of the channel between Airport Boulevard and UPRR bridges, the bridges being the limiting factors, and periodically mowing vegetation in all unlined channel bottom areas in order to maintain channel capacity. The channel would be widened to the east between the mobile home park at Airport Boulevard downstream to the northernmost UPRR bridge. Vegetation in the widened portion of the channel would be regularly maintained; however, the existing channel bottom would not be regularly maintained with this alternative. See Exhibit 1-8.

The channel invert would be lowered approximately five feet from about 1,000 feet upstream of the Airport Boulevard Bridge to the Thermal Drop Structure. Lining would be constructed beneath the bridges similar to the Proposed Project. Alternative C will also require relocation of Irrigation Lateral 99.8 east and west of the channel (Exhibit 1-6A), relocation of the SCG 8-inch natural gas line (Exhibit 1-6B), and removal and relocation of several IID power poles (Exhibits 1-6C and 6D). This alternative would convey the 100-Year Flood, while allowing vegetation in the existing channel bottom to be relatively undisturbed. Periodic clearing of vegetation would be required in the widened (easterly) portion of the channel bottom.

Table 3-2
Alternative C – Slope Lining and Channel Widening

Geometry	Lower invert approx. five feet from about 1,000 feet upstream of Airport Boulevard to the Thermal Drop Structure. Widen channel by up to 400 feet between Airport Boulevard and the northernmost UPRR bridge.
Slope Protection	Line sides from Ave. 54 to Thermal Drop.
Channel Bottom	Line beneath Airport Boulevard Bridge and from UPRR bridges to Thermal Drop Structure to protect bridges and control vegetation at critical points.
Airport Boulevard Bridge	Lining beneath bridge. Flow area under bridge will be increased by lowering channel invert (see "Geometry" above).
North UPRR Bridge	Lining beneath bridge. Flow area under bridge will be increased by lowering channel invert (see "Geometry" above). Potential extension of pile cross bracing and side curtains by UPRR.
South UPRR Bridge	Lining beneath bridge. Flow area under bridge will be increased by lowering channel invert (see "Geometry" above). Potential extension of pile cross bracing and side curtains by UPRR.
HWY 111 Bridge	Flow area under bridge will be increased by lowering channel invert (see "Geometry" above).
Channel Vegetation	Channel vegetation NOT MAINTAINED on existing channel bottom. Vegetation MAINTAINED in widened portion. Existing channel assumed to have a Manning's "n" (surface roughness) value of 0.060, and the widened area assumed to have a Manning's "n" surface (roughness) value of 0.035.
Target Flow Rate:	100-year (39,000 cfs)
Hydraulic Design Criteria Met (FEMA 100-Year, CVWD 100-Year)	FEMA 100-Year, CVWD 100-Year
Maintenance Issues	Vegetation maintenance required in widened portion.
ROW Acquisition	Yes. Additional 400± feet wide along eastern side of channel and a length of approximately 2,800 feet between Airport Boulevard and the UPRR bridges.
Relocation Required	Yes
Area/Percentage of Lined Channel Bottom	Area: 25.13 acres; Percentage: 19 %
Total Import/Export	Import: 86,500 CY aggregate/concrete/steel; Export: 772,333 CY excess soil; Net Import/Export: 733,357 CY
Impacts to CDFW Waters (Acres)	Temporary Impacts: 86.08 acres; Permanent Impacts: 22.07 acres
Impacts to Waters of the US (Acres)	Temporary Impacts: 59.61 acres; Permanent Impacts: 9.45 acres

3.3.3 Alternative D – "No Project" Alternative

Alternative D, the No Project Alternative, would result in no improvements to the existing channel but ongoing channel maintenance would continue. However, the channel cannot currently convey the 100-year flow, does not meet FEMA nor CVWD design criteria, and leaves large areas subject to flooding in a 100-year storm event. The area at risk of flooding (Special Flood Hazard Area (SFHA)) under the No-Project Alternative is shown on the current Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map. Within this SFHA, FEMA's floodplain management regulations must be enforced, and flood insurance is mandatory. (See Exhibit 2-7 Existing 100-year Floodplain Map).

The No Project alternative would avoid the effects associated with the Proposed Project's construction and operation and would therefore not permanently affect the site. However, an aggressive vegetation management/maintenance regime would be required to maximize existing channel capacity, understanding that the projected 100-year flooding could worsen without this maintenance.

Without channel improvements, the No Project Alternative would leave a wide area south of Airport Boulevard and the community (southward) subject to one to three feet of flooding in a 100-Year flood, risking both life and property. It also leaves the areas to be permanently mapped as special flood hazard area (within the 100-Year Flood Zone) with increased costs of flood insurance premiums for the community.

Table 3-3
Alternative D – No Project Alternative

Geometry	No change.
Slope Protection	No additional channel side slope lining.
Channel Bottom	No channel bottom lining under bridges or elsewhere along channel reach.
Airport Boulevard Bridge	No change.
North UPRR Bridge	No change.
South UPRR Bridge	No change.
HWY 111 Bridge	No change.
Channel Vegetation	No change in vegetation management.
Target Flow Rate:	100-year (39,000 cfs); not met by current channel.
Hydraulic Design Criteria Met (FEMA 100-Year, CVWD 100-Year)	Not met by current channel
Maintenance Issues	Aggressive vegetation maintenance required.
ROW Acquisition	NA
Relocation Required	NA
Area/Percentage of Lined Channel Bottom	Area: 0.00 acres; Percentage: 0.00 %
Total Import/Export	Import: 0.00 CY; Export: 0.00 CY; Net Import/Export: 0.00 CY
Impacts to CDFW Waters (Acres)	Temporary Impacts: 0.00 acres; Permanent Impacts: 0.00 acres
Impacts to Waters of the US (Acres)	Temporary Impacts: 0.00 acres; Permanent Impacts: 0.00 acres

3.3.4 Alternatives Considered But Not Further Analyzed

Pursuant to CEQA Guidelines 15262.6(c), an EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. The following project alternatives were considered by CVWD, but were not further analyzed because it was determined they would not meet one or more of the project objectives.

Slope Protection without Vegetation Maintenance

This alternative is similar to Alternative B with the exception that the channel bottom vegetation would remain largely unmaintained. Scheduled and approved vegetation maintenance to preserve the design capacity of the channel would continue to occur. The channel side slopes from Avenue 54 to approximately 300 feet downstream of the Thermal Drop Structure would be concrete-lined.

The channel invert from the Airport Boulevard bridge to the northernmost UPRR bridge would be lowered by 2.5± feet, and the channel invert from the northernmost UPRR bridge to the Thermal Drop Structure would be lowered an additional 2.5± feet. The crest of the Thermal Drop Structure would be lowered a total of approximately 5 feet. In order to create sufficient flow area under the Airport Boulevard bridge, the invert would be lowered an additional 2.5 feet in the immediate vicinity of the bridge. This "local depression" at the Airport Boulevard bridge would likely fill with sediment over time and require regular cleaning to maintain the necessary channel cross section.

The Airport Boulevard bridge, Highway 111 bridge, and the two UPRR bridge would be reinforced at the piers to provide additional scour protection. The channel bottom under the Airport Boulevard bridge would be lined, as would the channel reach from the upstream UPRR bridge downstream to the Thermal Drop Structure.

Due to friction from unmaintained vegetation and insufficient channel cross section between Airport Boulevard and the northernmost UPRR bridge, this alternative would not meet FEMA and CVWD design criteria to pass the 100-Year Storm flow with necessary freeboard. The purpose of investigating this alternative was to identify a feasible "soft-bottom" alternative that works for the 100-Year flood with 4-feet of freeboard. Channel and bridge configurations are otherwise similar to Alternative A (Proposed Project). With the improvements and management strategies associated with this alternative, nonetheless, the 100-Year flood will not pass with this alternative.

Channel Slope Lining and Maintained Vegetation with a Lengthened Upstream UPRR Bridge

The northernmost UPRR bridge is the single biggest obstruction to flow in the Project channel reach. Under this alternative, the upstream UPRR bridge would be extended eastward to increase the channel cross-sectional area under the bridge and create a straighter channel alignment between the two UPRR bridges. This alternative was developed to determine whether extending the bridge could result in a "soft-bottom" alternative that would not extensively alter the channel geometry, and have lower overall Project cost and reduced environmental impact compared to other alternatives

Similar to other alternatives, this alternative would include slope protection on both banks for the entire length of the project, vegetation maintenance, and lining beneath the bridges. However, the invert of the channel would not be lowered between Airport Boulevard Bridge and Thermal Drop as is the case in other alternatives. Extension of the bridge would be very costly, would not fully eliminate the need to lower the channel invert and channel vegetation would need to be maintained similar to other alternatives. Therefore, this alternative was not considered superior to the Proposed Project.

3.4 Alternative Projects Analysis

3.4.1 Aesthetics

Potential impacts on visual/aesthetic resources from implementation of the CVSC Improvement Project alternatives are assessed in this section. Aesthetic resources include scenic vistas, scenic resources, the visual character of the areas surrounding the proposed alternatives, and the impacts that light and glare from the alternatives will have on surrounding areas.

The visual setting is characterized by the natural and built landscape features that may be viewed from publicly accessible vantage points. For analysis purposes, scenic resources are categorized as the built or natural environment that contributes to a scenic public setting. This includes but is not limited to trees and rock outcroppings. Scenic vistas are considered any publicly accessible viewpoints that provide expansive views of a highly valued landscape view.

The Coachella Valley is a terminal basin surrounded by dramatic mountainous terrain created by the active geology that is characteristic of Southern California. The CVSC Improvement Project site is bordered by a mix of active and fallow agricultural lands, ag-industrial uses, a wastewater treatment plant, an IID substation, several mobile homes, and scattered single family residences. Existing channel vegetation and surrounding agricultural fields with distant mountain views dominate the views enjoyed by the surrounding and traveling public.

Detailed descriptions of the visual environment in the Proposed Project area are provided in Section 2.3.4.

3.4.1.1 Alternative B: "Fully-Lined Channel"

3.4.1.1.1 Alternative B Impacts

a) Have a substantial adverse effect on a scenic vista.

Less than Significant with Mitigation. Under Alternative B, the impacts to scenic vistas in the project area would be somewhat greater than those described for the Proposed Project. Although channel improvements will occur in the same area of topographic depression (sub-grade channel) and visual effects of Alternative B will only be evident from vantage points where the view can see directly into the channel, where broader expanses of the channel are visible areas where there would be vegetation would instead be concrete.

Utility Projects
Alternative B would require the same utility projects as the Proposed Project, including relocation of the CVWD irrigation lateral, SCG gas line, and IID power poles. The relocated irrigation lateral and SCG gas line will be underground and therefore will have no permanent impact on surrounding views of scenic vistas. Temporary impacts will be short-lived and less than significant.

As discussed in Section 1.10 of this EIR, project improvements will also require the relocation of several IID power poles at two locations (See Exhibits 1-6C and 1-6D). As with the Proposed Project, the IID facility relocations will also require the addition of some poles and removal of others. visual resources in the planning area are somewhat compromised by existing development, including unscreened industrial lands, wastewater treatment plant, unscreened outdoor storage, residential, existing power poles, and major transportation infrastructure. Therefore, visual impacts associated with the relocated IID power poles are expected to be comparable to the existing condition and will therefore be less than significant.

As described in Section 2.3.6, construction related impact impacts would be less than significant with implementation of mitigation measures AES-1 (Screening) (see Section 2.3.7).

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

No Impact. Substantial damage to a scenic resource occurs when a project adversely degrades one or more of the aesthetic qualities that contribute to a scenic setting. This includes damages to trees, rock outcroppings, and historic buildings within a state scenic highway. No segment of the proposed channel improvement project is located within a State Scenic Highway or one eligible for such designation; and therefore, there will be no impact as a result of Alternative B to this criterion.

Utility Projects
Relocation of the irrigation lateral, SCG gas line, and IID power poles will have no impact on scenic resources within a State Scenic Highway because the proposed improvements are not located within a State Scenic Highway or one eligible for such designation; and therefore, there will be no impact as a result of the project to this criterion.

c) Substantially degrade the existing visual character or quality of the site and its surroundings

Less than Significant. A project is classified as "substantially degrading" to the visual character or quality of the site if it would create a negative effect to the public's appreciation and experience of the visual environment. Similar to the Proposed Project, Alternative B will require a substantial amount of earthwork but impacts associated with construction will be short-term. The lack of vegetative relief in the channel will result in a degree of viewshed degradation. The long-term potential to impact the visual character of the area is limited by the nature of and the region's many decades-reliance on the project facility. The facility's limited visibility and sub-grade location with respect to surrounding lands further limits the potential visual effects of this alternative. Therefore, Alternative B will have a less than significant permanent alteration of the visual character due to the limited visibility of channel improvements by either local residents or the traveling public.

Utility Project
The potential impacts associated with the required relocation of irrigation lateral 99.8, SCG 8-inch gas line, and IID power poles are the same as those discussed in Section 1.10 of this EIR. Similar to other components of project improvements, construction equipment may be visible from the relocation sites and service roads. Impacts associated with relocation and construction of the utility projects will be short-term and will not result in any significant permanent alteration of the visual character of the project area.

At buildout, the irrigation lateral and SCG gas line will be underground and will not alter the existing visual character of the project. Visual resources in the planning area are somewhat compromised by existing development, including existing power poles, industrial yards, dilapidated buildings and other visual clutter. Therefore, visual impacts of the project area are expected to be comparable to the existing condition and will therefore be less than significant.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Less than Significant with Mitigation: Similar to the Proposed Project, Alternative B improvements will not generate a permanent source of light or glare. Staging and equipment storage areas may be equipped with security lighting; however, such lighting will be temporary. In the event, nighttime security lighting is required, the project would adhere to MM AES-2 Security Lighting (see Section 2.3.7); whereas, temporary construction and staging area lighting shall be shielded to preclude spillage onto adjoining roadways, residential properties or other sensitive receptors. There will be no permanent lighting associated with Alternative B. No new mitigation measures are required for Alternative B.

Utility Projects
The proposed utility relocations will not generate permanent sources of light or glare. Staging and equipment storage areas may be equipped with security lighting; however, such lighting will be temporary. In the event, nighttime security lighting is required, the utility projects would adhere to MM AES-2 Security Lighting; whereas, temporary construction and staging area lighting shall be shielded to preclude spillage onto adjoining roadways, residential properties or other sensitive receptors. There will be no permanent lighting associated with the utility relocation projects.

3.4.1.1.2 Alternative B Mitigation Measures

Please see Section 2.3.7, Mitigation Measures for further reference. There will be no need for any change or addition of mitigation measures under this alternative.

3.4.1.1.3 Alternative B Significance After Mitigation

Under Alternative B, the same measures required for the Proposed Project can be implemented to reduce its impacts on aesthetics to less than significant levels. There will be no residual impacts with adherence to the mitigation measures and impacts under this alternative would ensure impacts are less than significant.

3.4.1.1.4 Alternative B Cumulative Impacts

The channel improvement project is located within areas of existing industrial, agricultural activity, major transportation facilities, limited residential use, and other development and light sources. The construction and use activities associated with this channel improvement project will be minimally visible to residents and the traveling public, whose views shall also be maintained because the project does not propose structures introducing new visual clutter or obstructions to views. Because of the limited new construction proposed, channel improvements and utility relocations will not contribute to cumulative increases in visual effects in the project area. Aesthetic impacts associated with the implementation of the Alternative B will be less than cumulatively considerable.

3.4.1.2 Alternative C: "Slope Lining and Channel Widening"

3.4.1.2.1 Alternative C Impacts

a) Have a substantial adverse effect on a scenic vista.

Less than Significant with Mitigation. Under Alternative C, the impacts to scenic vistas in the project area would be substantially the same as those described for the Proposed Project because channel improvements will occur in the same area of topographic depression (sub-grade channel) and visual effects of Alternative C will only be evident from vantage points where the viewer can see directly into the channel. This alternative would result in somewhat greater vegetation in the channel bottom, which would be discernable to local residents and the traveling public, providing a limited increase in the vegetative relief component of visible viewsheds.

Utility Projects
Alternative C would require the same utility projects as the Proposed Project, including relocation of the CVWD irrigation lateral, SCG gas line, and IID power poles. The irrigation lateral and SCG gas line will be buried upon completion and therefore will have no permanent impact on surrounding views of scenic vistas. Temporary impacts will be short-lived and less than significant.

As discussed in Section 1.10 of this EIR, project channel improvements will also require the relocation of several IID power poles at two locations (See Exhibits 1-6C and 1-6D). As with the Proposed Project, the IID facility relocations will also require the addition of some poles and removal of others. visual resources in the planning area are somewhat compromised by existing development, including unscreened industrial lands, wastewater treatment plant, unscreened outdoor storage, residential, existing power poles, and major transportation infrastructure. Therefore, visual impacts associated with the relocated IID power poles are expected to be comparable to the existing condition and will therefore be less than significant.

As described in Section 2.3.6, construction related impact impacts would be less than significant with implementation of mitigation measure AES-1 (Screening) (see Section 2.3.7).

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

No Impact. Substantial damage to a scenic resource occurs when a project adversely degrades one or more of the aesthetic qualities that contribute to a scenic setting. This includes damages to trees, rock outcroppings, and historic buildings within a state scenic highway. No segment of the proposed channel improvement project is located within a State Scenic Highway or one eligible for such designation; and therefore, there will be no impact as a result of the project to this criterion.

Utility Projects
Relocation of the irrigation lateral, SCG gas line, and IID power poles will have no impact on scenic resources within a State Scenic Highway because the proposed improvements are not located within a State Scenic Highway or one eligible for such designation; and therefore, there will be no impact as a result of the project to this criterion.

c) Substantially degrade the existing visual character or quality of the site and its surroundings

Less than Significant. Similar to the Proposed Project, Alternative C will require a substantial amount of earthwork, more so due to channel widening, but impacts associated with construction will be short term and will not result in any significant permanent alteration of the visual character of any portion of the channel.

The long-term potential to impact the visual character of the area is limited by the nature of the project, the channel's sub-grade location with respect to surrounding lands. This alternative would result in somewhat greater vegetation in the channel bottom, which would be discernable to local residents and the traveling public, providing a limited increase in the vegetative relief component of visible viewsheds. Therefore, visual impacts of the project area are expected to be comparable to the existing condition and the Proposed Project, and impacts will therefore be less than significant.

Utility Project
The following discusses the potential impacts associated with the required relocation of irrigation lateral 99.8, SCG 8-inch gas line, and IID power poles, as described in Section 1.10 and discussed in Section 2.3 of this EIR. Similar to other components of project improvements, construction equipment may be visible from the relocation sites and service roads. Impacts associated with relocation and construction of the utility projects will be short term and will not result in any significant permanent alteration of the visual character of the project area.

At buildout, the irrigation lateral and SCG gas line will be underground and will not alter the existing visual character of the project. Visual resources in the planning area are somewhat compromised by existing development, including existing power poles. Therefore, visual impacts of the project area are expected to be comparable to the existing condition and will therefore be less than significant.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Less than Significant with Mitigation: Similar to the Proposed Project, Alternative C improvements will not generate a permanent source of light or glare. Staging and equipment storage areas may be equipped with security lighting; however, such lighting will be temporary. In the event, nighttime security lighting is required, the project would adhere to MM AES-2 Security Lighting (see Section 2.3.7); whereas, temporary construction and staging area lighting shall be shielded to preclude spillage onto adjoining roadways, residential properties or other sensitive receptors. There will be no permanent lighting associated with Alternative C. No new mitigation measures are required for Alternative C.

Utility Projects
The proposed utility relocations will not generate a permanent source of light or glare. Staging and equipment storage areas may be equipped with security lighting; however, such lighting will be temporary. In the event, nighttime security lighting is required, the utility projects would adhere to MM AES-2 Security Lighting; whereas, temporary construction and staging area lighting shall be shielded to preclude spillage onto adjoining roadways, residential properties or other sensitive receptors. There will be no permanent lighting associated with the utility relocation projects.

3.4.1.2.2 Alternative C Mitigation Measures

Please see Section 2.3.7, Mitigation Measures for further reference. There will be no need for any change or addition of mitigation measures under this alternative.

3.4.1.2.3 Alternative C Significance After Mitigation

Under Alternative C, the same measures required for the Proposed Project can be implemented to reduce its impacts on aesthetics to less than significant levels. There will be no residual impacts with adherence to the mitigation measures and impacts under this alternative would ensure impacts are less than significant.

3.4.1.2.4 Alternative C Cumulative Impacts

The channel improvement project is located within areas of existing industrial, agricultural activity and limited residential use, and other development and light sources. The construction and use activities associated with this channel improvement project will be minimally visible to residents and the traveling public, whose views shall also be maintained because the project does not propose structures introducing new visual clutter or obstructions to views. Because of the limited new construction proposed, channel improvements and utility relocations will not contribute to cumulative increases in visual effects in the project area. Aesthetic impacts associated with the implementation of the Alternative C will be less than cumulatively considerable.

3.4.1.3 Alternative D: "No Project" Alternative

3.4.1.3.1 Alternative D Impacts

a) Have a substantial adverse effect on a scenic vista.

No Impact. There will be no change in the visual character of the channel or surrounding area under Alternative D and existing conditions will remain the same. There would be no impact on any scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

No Impact. Under Alternative D, existing conditions would not be altered and there would be no damage to scenic resources. There will be no impact.

c) Substantially degrade the existing visual character or quality of the site and its surroundings

No Impact. There will be no proposed change under Alternative D and existing conditions will remain the same. There would be no impact on the visual character or quality of the site and its surroundings.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

No Impact. There will be no proposed change under Alternative D and existing conditions will remain the same. There would be no new source of substantial light or glare that would adversely affect day or nighttime views in the area.

3.4.1.3.2 Alternative D Mitigation Measures

Mitigation measures are not required for Alternative D.

3.4.1.3.3 Alternative D Significance After Mitigation

Alternative D will not result in significant impacts requiring mitigation. There will be no impact.

3.4.1.3.4 Alternative D Cumulative Impacts

Under Alternative D, existing conditions would not be altered and there would be no cumulative impacts to visual resources.

3.4.1.4 Environmentally Superior Alternative

The environmentally superior alternative was chosen based on potential long-term impacts to the scenic environment. Since Alternative D does not propose changes in conditions, the visual quality of the area will remain unaffected. However, Alternative D achieves none of the project objectives. All of the "build" alternatives, including the Proposed Project, result in less than significant impacts associated with visual resources. The Proposed Project arguably is superior to the other build alternatives, largely the amount and extent of in-channel vegetation, avoiding other lands; increase in exposed lined area will be minimal and close to bridges, and will not be noticeable to most viewers. None of the alternatives would contribute to substantial degradation of the visual resources in the project planning area.

3.4.2 Agriculture and Forestry Resources

The following section assesses impacts on agricultural and forestry resources resulting from the CVSC Improvement Project alternatives. Agricultural lands occur along and in proximity to the project area, including lands that are being cultivated for citrus, ornamental landscape plants, and truck crops (vegetables). Not all of surrounding or nearby agricultural lands are in cultivation, and these lands are interspersed with small residential enclaves and ag-related industrial lands (packing sheds, irrigation services, etc.) There are no forestry resources in proximity to the project area, the nearest such resources being in the San Jacinto Mountains.

Detailed descriptions of existing agricultural and forestry resources in the Proposed Project area are provided in Section 2.4.4.

3.4.2.1 Alternative B: "Fully-Lined Channel"

3.4.2.1.1 Alternative B Impacts

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

Less than Significant with Mitigation. Alternative B's potential impact to designated agricultural lands would be identical impacts associated with the Proposed Project, which is limited to 0.34±-acres parcel located on the east and west sides and outside of the channel and upstream of the UPRR bridges, where an existing CVWD irrigation lateral is to be relocated as a part of the channel improvement project (see Exhibit 1-6A). Once Irrigation Lateral 99.8 has been relocated the excavation and staging areas will be returned to their original state; therefore, impacts will be temporary. The agricultural lands that could be impacted are partially cultivated with date palm interspersed with fallow lands. As described in Section 2.4.6, disturbance to existing agricultural activities will be limited, temporary and less than significant with implementation of mitigation measure AG-1 Irrigation Lateral Relocation (see Section 2.4.7).

Utility Projects
As discussed above, relocation of the CVWD irrigation lateral will have a limited impact on agricultural lands cultivated with date palms; however, these impacts will be mitigated to less than significant levels with implementation of AG-1.

Relocation impacts associated with the SCG gas line and IID power poles will not occur within agricultural lands. Impacts will be limited to existing service roads, the channel and street rights-of-way. Therefore, there will be no impact to agricultural farmlands.

b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract.

No Impact. Similar to the Proposed Project, Alternative B will occur almost entirely within the existing CVWD channel rights-of-way and only a small area of agricultural lands on the east side of the channel may be impacted due to the relocation of an existing CVWD irrigation lateral. However, Alternative B will not conflict with agriculturally designated lands in either the City of Coachella or Riverside County. None of the agricultural lands in the planning area are under a Williamson Act contract. Alternative B will have no impact on any lands under a Williamson Act contract.

Utility Projects
As previously discussed above, none of the agricultural lands in the planning area are under a Williamson Act contract. Therefore, the proposed utility relocation projects will have no impact on any lands under a Williamson Act contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact: See response to Section 3.4.2.1.1b, above.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The planned channel improvements will not result in the conversion of any forest lands to non-forest uses, nor will it have the effect of inducing such conversions. Alternative B will have no impacts to this criterion.

Utility Projects
The relocation of the irrigation lateral, SCG gas line, and IID poles will not result in the conversion of any forest or agricultural lands to non-agricultural/forest lands, nor will it have the effect of inducing such conversions.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact: See response to Section 3.4.2.1.1d, above.

3.4.2.1.2 Alternative B Mitigation Measures

Please see Section 2.4.7, Mitigation Measures for further reference. There will be no need for any change or addition of mitigation measures under this alternative.

3.4.2.1.3 Alternative B Significance After Mitigation

Under Alternative B, the same measures can be implemented to reduce its impacts on agricultural or forest/timber lands to less than significant levels. There will be no residual impacts with adherence to the mitigation measures and impacts under this alternative would ensure impacts are less than significant.

3.4.2.1.4 Alternative B Cumulative Impacts

There are no forest resources in the project study area. Therefore, the channel improvement project does not contribute to any cumulative projects related to forest resources. The geographic scope for cumulative impact analysis related to agricultural resources consists of Riverside County and all agricultural land located within the CVWD service area. Although the relocation of the aforementioned irrigation lateral could affect a very limited amount of land in cultivation, this impact is expected to amount to less than one acre and will be temporary. Therefore, no agricultural land conversion would occur, and Alternative B would not contribute to any cumulatively considerable impacts related to agricultural resources.

3.4.2.2 Alternative C: "Slope Lining and Channel Widening"

3.4.2.2.1 Alternative C Impacts

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

Less than Significant with Mitigation. Alternative C's potential impact to designated agricultural lands would be similar to impacts associated with the Proposed Project and Alternative B with regard to impacts associated with the relocation of the CVWD irrigation lateral. Unlike the Proposed Project, Alternative C will require the conversion of additional 20± acres of adjacent lands currently being partially cultivated with date palms and fallow land for the widening of the channel to the east, outside of the existing channel.

According to the Eastern Coachella Valley Stormwater Master Plan (ECVSMP) Draft EIR[1], the majority of the 20± acres is designated as "other land" while a smaller portion is designated as "Prime Farmland." As of 2014, there are 72,659 acres of designated farmland within the ECVSMP planning area. Impacts associated with Alternative C in and of itself would not convert significant areas of farmland to non-agricultural use nor have a significant impact on the existing and future economic value of the Riverside County's or the Coachella Valley's agricultural production. The agricultural lands being impacted are isolated and are currently fragmented by non-agricultural land uses, and the permanent conversion of 20± acres of farmland would constitute less than 0.03% of the ECVSMP planning areas total area of designated farmland. Therefore, while the permanent loss of these 20 acres is unavoidable, it is not considered significant. The balance of the impacts, including disturbance to existing agricultural activities will be limited, temporary and less than significant with implementation of AG-1 (see Section 2 Environmental Setting, Impacts and Mitigation Measures for a description of mitigation measures).

Utility Projects
As discussed above, relocation of the CVWD irrigation lateral will have a limited impact on agricultural lands cultivated with date palms; however, these impacts will be mitigated to less than significant levels with implementation of AG-1.

Relocation impacts associated with the SCG gas line and IID power poles will not occur within agricultural lands. Impacts will be limited to existing service roads, the channel, and street rights-of-way. Therefore, there will be no impact to agricultural farmlands.

b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract.

Less Than Significant. The unincorporated County lands adjoining the CVSC improvement project area are designated a mix of *Light Industrial*, *Low-Density Residential*, and *Agriculture*. Similar to the Proposed Project, Alternative C will occur mostly within the existing CVWD channel rights-of-way. Unlike the Proposed Project, a larger area of agricultural lands, active and fallow on the east side of the channel, would be converted due to the channel widening. Impacted agricultural lands are relatively fragmented and in small parcels, some of which are fallow, others are in active cultivation and some are used for storage of irrigation pipe and other ag-equipment. None of the agricultural lands in the planning area are under a Williamson Act contract; therefore, Alternative C will have no impact on any lands under a Williamson Act contract.

Utility Projects
As previously discussed above, none of the agricultural lands in the planning area are under a Williamson Act contract. Therefore, the proposed utility relocation projects will have no impact on any lands under a Williamson Act contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The planned channel improvements will not result in the zoning of any timberland or forest land, nor will it induce or cause such rezoning.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The planned channel improvements will not result in the conversion of any forest lands to non-forest uses, nor will it have the effect of inducing such conversions. Alternative C will have no impacts in terms of loss or conversion of forest lands.

[1] Eastern Coachella Valley Stormwater DEIR, prepared by Webb Associates, May 2017.

Utility Projects
The relocation of the irrigation lateral, SCG gas line, and IID poles will not result in the conversion of any forest or agricultural lands to non-agricultural/forest lands, nor will it have the effect of inducing such conversions.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Less Than Significant: Alternative C would result in the loss of 20± acres of agricultural lands. These both active and fallow lands would be converted due to the channel widening; however, these lands are relatively fragmented and in small parcels, some of which are fallow, others are in active cultivation and some are used for storage of irrigation pipe and other ag-equipment. Alternative C has the potential to reduce the economic viability of these lands for agriculture; however, these impacts would nonetheless be less than significant. See response to Section 3.4.2.2.1d, above.

3.4.2.2.2 Alternative C Mitigation Measures

Please see Section 2.4.7, Mitigation Measures for further reference. There will be no need for any change or addition of mitigation measures under this alternative.

3.4.2.2.3 Alternative C Significance After Mitigation

Under Alternative C, the same measures can be implemented to reduce its impacts on agricultural or forest/timber lands to less than significant levels. There will be no residual impacts with adherence to the mitigation measures and impacts under this alternative would ensure impacts are less than significant.

3.4.2.2.4 Alternative C Cumulative Impacts

There are no forest resources in the project study area. Therefore, Alternative C does not contribute to any cumulative projects related to forest resources. The geographic scope for cumulative impact analysis related to agricultural resources consists of Riverside County and all agricultural land located within the CVWD service area.

The land required to widen the channel could affect a very limited amount of land in cultivation, this impact is expected to amount to 20± acres. These lands are relatively fragmented and in small parcels, some of which are fallow, others are in active cultivation and some are used for storage of irrigation pipe and other ag-equipment. Given their limited extent and parcel size, constraints associated with surrounding development (HWY 111, SR 86, the CVSC and residential development) have fragmented these lands and greatly reduced their importance as production lands. Therefore, very limited agricultural land conversion would occur, and Alternative C would not contribute to any cumulatively considerable impacts related to agricultural resources.

3.4.2.3 Alternative D: "No Project" Alternative

3.4.2.3.1 Alternative D Impacts

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

No Impact. Under Alternative D, existing conditions would not be altered and there would be no conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. There will be no impact.

b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract.

No Impact. Under Alternative D, existing conditions would not be altered and there would be no conflict with existing zoning for agricultural use, or a Williamson Act Contract. There will be no impact.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. Under Alternative D, existing conditions would not be altered and there would be no conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). There will be no impact.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. Under Alternative D, existing conditions would not be altered and there would be no loss of forest land or conversion of forest land to non-forest use. There will be no impact.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. Under Alternative D, existing conditions would not be altered and there would be no conversion of Farmland to non-agricultural use or conversion of forest land to non-forest land. There will be no impact.

3.4.2.3.2 Alternative D Mitigation Measures

Mitigation measures are no required for Alternative D.

3.4.2.3.3 Alternative D Significance After Mitigation

Mitigation measures are not required for Alternative D; and there are no residual impacts.

3.4.2.3.4 Alternative D Cumulative Impacts

Under Alternative D, existing conditions would not be altered and there would be no cumulative impacts to agriculture or forestry resources.

3.4.2.4 Environmentally Superior Alternative

Of the three build alternatives analyzed, none will result in impacts to timberlands or forest lands. Only Alternative C will have a meaningful but less than significant permanent impact on agricultural lands. Therefore, Alternatives A (Proposed Project) and B are superior to Alternative C.

3.4.3 Air Quality

The following section analyzes the potential air quality impacts associated with the CVSC Improvement Project alternatives. A variety of local and regional data and information, ranging from research and analysis conducted for the project site, to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects on air quality. An Air Quality and Greenhouse Gas Report was prepared for the Proposed Project and alternatives and is provided in Appendix B of this EIR.

The channel improvement project and associated utility relocations, including the Proposed Project and alternatives, is located within the Salton Sea Air Basin (SSAB) and is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). Air quality in the Salton Sea Air Basin has been impacted by emissions associated with increased development, population growth, and vehicle emissions. Although air pollution is emitted locally from various sources, some of the degradation of air quality within the Salton Sea Air Basin can be attributed to sources located outside of the basin. In the project area, air quality is regulated by the SCAQMD, which implements applicable state and federal policy and regulations.

Please see Section 2.5.4 for a detailed description of existing air quality conditions.

3.4.3.1 Alternative B: "Fully-Lined Channel"

3.4.3.1.1 Alternative B Impacts

a) Conflict with or obstruct implementation of the applicable air quality plan.

Less than Significant with Mitigation. All development within the SSAB, including the subject channel project, is subject to the 2016 SCAQMD Air Quality Management Plan and 2003 PM_{10} Coachella Valley State Implementation Plan (CVSIP). These comprehensive plans establish control strategies and guidance on regional emission reductions for air pollutants.

The construction of project channel improvements and relocation of utility facilities described in Section 1.10 would be implemented in accordance with all applicable air quality management plans to ensure impacts to air quality are reduced to the greatest extent possible. Actions include but are not limited to the preparation of a standard dust control management plan in compliance with the CVSIP, and the enforcement of mitigation measures in the event that criteria pollutant thresholds are exceeded during construction activities.

Although construction of Alternative B would not prevent the SCAQMD from implementing actions set forth in the air quality plans, thus resulting in a less than significant impact under this threshold (a), Alternative B will result in significant impacts associated with criteria pollutants. As demonstrated below (under threshold (b)), and Section 3.4.3.1.3: Significance after Mitigation, Alternative B will not exceed the SCAQMD thresholds of significance after mitigation. Therefore, Alternative B will result in a less than significant impact after mitigation.

b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation.

Less than Significant with Mitigation: Similar to the Proposed Project, the length of Alternative B is approximately two miles and will involve extensive grading along this entire reach, the removal of the drop structure, soil over-excavation and re-compaction, and importing aggregate base, rebar and concrete. Alternative B would result in a total project area of 116± acres of possible disturbance.

Due to the excess cut associated with the project, construction will require a large number of hauling trips to export channel materials and to import concrete, steel and other construction materials. It is estimated that the Alternative B project would require 114,800 cubic yards of concrete (import), 9,503 tons of reinforcing steel (import), and result in an export of 319,000 cubic yards of surplus soil. It is assumed that each haul round trip will be approximately 6-10 miles[2] based upon an average haul load of 20 tons (or 16 cubic yards)[3]. It is assumed that buildout of Alternative B would occur over a 2-year period.

The following table provides unmitigated construction-related air quality impacts for Alternative B buildout.

Table 3-4
Unmitigated Construction Emissions Summary
Alternative B- Fully Lined Channel
Maximum Daily Emissions (lbs./day)

	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Max. Daily Emissions	238.21	360.34	33.31	0.51	19.23	15.79
SCAQMD Threshold*	**550.00**	**100.00**	**75.00**	**150.00**	**150.00**	**55.00**
Exceeds Threshold	**No**	**Yes**	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.1. See Appendix B for detailed tables. Value shown represents the average unmitigated emissions from summer and winter.
* Source: "SCAQMD Air Quality Significance Thresholds" SCAQMD, March 2015.

As shown in the table above, SCAQMD daily thresholds for CO, ROG, SOx, PM_{10} and $PM_{2.5}$ will not be exceeded during construction of any phase of Alternative B development. However, NOx emissions have the potential to slightly exceed SCAMD thresholds due to simultaneous use of construction equipment and material hauling. To reduce NOx emissions and overall project impacts to less than significant levels, the same mitigation measures applied to the Proposed Project will be applied to Alternative B. The list of mitigation measures is presented in Section 2.5.7.

Operational Emissions of Criteria Pollutants and Odors
There will be no new operational impacts associated with Alternative B. Existing on-going channel maintenance, including periodic vegetation management and other CVWD channel maintenance services, will continue after project completion. There will be no new impacts.

Utility Projects
For analysis purposes, impacts associated with relocation of the irrigation lateral, SCG gas pipeline, and IID power poles were included in the overall Alternative B impact analysis, above. As shown in Table 3-4, impacts associated with construction emissions would be significant; however, with mitigation set forth in Section 2.5 and as described below, impacts would be less than significant. There will be no new operational impacts associated with the utility relocations. Existing on-going service maintenance to the lateral, gas lines, and power poles will continue after project completion. There will be no impacts.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).

Less than Significant. See Section 3.4.3.1.4 Cumulative Impacts, below.

[2] Soil will be exported to CVWD WWRP-4 (3.5 miles from project site). It is assumed that concrete will be from Desert Redi-Mix (3.8 miles from project site), and the reinforced steel will be from Sepulveda Building Materials (5.5 miles from project site).

[3] The air emission modeling software, CalEEMod, assumes each haul load is approximately 20 tons. This assumption is programmed into the model.

d) Expose sensitive receptors to substantial pollutant concentrations.

Less than Significant with Mitigation. The same Localized Significance Thresholds (LST) parameters used to analyze the Proposed Project were used to analyze impacts associated with Alternative B. The maximum area of disturbance associated with buildout of Alternative B is approximately 116 acres and it is assumed that buildout would occur incrementally over the course of two years. Although the total project area is greater than five-acres, the area of daily disturbance (for purposes of LST analysis only) is limited to five acres or less per day at any given location.[4] As such, the five-acre look up table is appropriate under the SCAQMD's methodology to screen for potential localized air quality impacts.[5]

The Mass Rate Look-Up tables for LSTs were used to determine if the Alternative B project would have the potential to generate significant adverse localized air quality impacts during construction. The LST for Source Receptor Area (SRA) 30 (Coachella Valley) was used to determine LST emission thresholds. The distance from the emission source and the maximum daily site disturbance also determines emission thresholds. For analysis purposes, the worst-case scenario of a sensitive receptor being within 25 meters was used and is representative of the residential development in proximity of the planning area.

The LST analysis indicates that, even without mitigation, Alternative B will not exceed CO, NOx, and PM_{10} thresholds. However, $PM_{2.5}$ emissions have the potential to exceed LST thresholds due to dust from off-road construction vehicles. To reduce $PM_{2.5}$ emissions and overall project impacts to less than significant levels, mitigation measures are set forth in Section V.

Table 3-5
Unmitigated Localized Significance Thresholds
Alternative B- Fully Lined Channel
25 Meters, 5 Acres (lbs per day)

	CO	NO_x	PM_{10}	$PM_{2.5}$
Max. Onsite Emissions[1]	126.67	194.30	9.43	8.36
LST	**2,292**	**304**	**14**	**8**
Exceed?	**No**	**No**	**No**	**Yes**

Source: CalEEMod Version 2016.3.1. See Appendix B. Emissions show the highest emitting day for all emissions generated onsite during construction.
1. Maximum onsite emissions occur during the grading period in 2020.

Utility Projects
For analysis purposes, impacts associated with relocation of the irrigation lateral, SCG gas line, and IID power poles were included in the overall project impact analysis, above. As shown in Table 3-5, impacts to sensitive receptors would be significant; however, with mitigation set forth in Section 2.5 and as described below, impacts would be less than significant.

e) Create objectionable odors affecting a substantial number of people.

Less than Significant. Alternative B is not expected to generate significant objectionable odors during any phase of construction. The Proposed Project has the potential to result in short-term odors associated with paving and other construction activities. However, construction-related odors would be quickly dispersed below detectable thresholds and as distance from the construction site increases. Therefore, Alternative B impacts from objectionable odors are expected to be less than significant.

4 The equipment-specific grading rates are based on the SCAQMD's Fact Sheet for Applying CalEEMod to Localized Significance Thresholds guidance document. The LST methodology focuses on the equipment that may be operated and acreage that may be disturbed in areas immediately proximate to potential sensitive receptors, even if other equipment may be operated or other acreage may be disturbed in areas that are farther away from the sensitive receptor.

5 South Coast AQMD, "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds."

Utility Projects
The relocation of the irrigation lateral, SCG gas line, and IID power poles have the potential to result in short-term odors associated with operation of heavy equipment and other construction activities. However, construction-related odors would be quickly dispersed below detectable levels and as distance from the construction area increases. Therefore, impacts from objectionable odors are expected to be less than significant. There will be no maintenance-related impacts associated with objectionable odors.

3.4.3.1.2 Alternative B Mitigation Measures

The same mitigation measures required for the Proposed Project will reduce impacts associated with Alternative B to less than significant levels (see Section 3.4.3.1.3, below). There will be no need for any change or addition of mitigation measures under this alternative. Please see Section 2.5.7, Mitigation Measures for further reference.

3.4.3.1.3 Alternative B Significance After Mitigation

The following discussion provides analysis of significance after mitigation with regard to criterion b) and d), above, which are considered less than significant after mitigation.

b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation.

Less than Significant. As shown in Table 3-6 below, adherence to the mitigation measures would reduce construction-related criteria pollutant emissions to levels below SCAQMD thresholds. Construction emissions will be further minimized through best development practices, proper maintenance of construction equipment, and other mitigation measures set forth in Section 2.5.7 that limit the project's contribution to air pollutant emissions during construction. Therefore, impacts to air quality resulting from construction of Alternative B will be less than significant.

Table 3-6
Mitigated Construction Emissions Summary
Alternative B- Fully Lined Channel
Maximum Daily Emissions (lbs./day)

	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Max. Daily Emissions	273.33	89.35	12.07	0.51	8.35	4.23
SCAQMD Threshold*	**550.00**	**100.00**	**75.00**	**150.00**	**150.00**	**55.00**
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.1 See Appendix B for detailed tables. Value shown represents the average mitigated emissions from summer and winter.
* Source: "SCAQMD Air Quality Significance Thresholds" prepared by SCAQMD, March 2015.

d) Expose sensitive receptors to substantial pollutant concentrations.

Less than Significant. As shown in the table below, adherence to the mitigation measures set forth in Section 2.5.7 would reduce LST-related criteria pollutant emissions below SCAQMD thresholds. Construction emissions will be further minimized through best management practices, and proper maintenance of construction equipment during construction. Therefore, impacts to LSTs from construction of Alternative B will be less than significant.

Table 3-7
Mitigated Localized Significance Thresholds
Alternative B- Fully Lined Channel
25 Meters, 5 Acres (lbs per day)

	CO	NO_x	PM_{10}	$PM_{2.5}$
Max. Onsite Emissions[1]	147.54	21.66	1.35	1.14
LST	**2,292**	**304**	**14**	**8**
Exceed?	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.1. See Appendix B. Emissions show the highest emitting day for all emissions generated onsite during construction.
1. Maximum onsite emissions occur during the grading period in 2020.

3.4.3.1.4 Alternative B Cumulative Impacts

Cumulative air quality impacts associated with Alternative B would be similar to the Proposed Project due to the dispersing nature of pollutant emissions and aggregate impacts from surrounding jurisdictions and air management districts. Therefore, cumulative air quality impacts related to construction and operation of Alternative B are considered less than significant. Development and operation of Alternative B will not exceed air quality maximum daily thresholds (mitigated) for CO, NOx and PM_{10}, which are cumulative thresholds by their nature. Therefore, impacts related to ozone and PM_{10} emissions will be less than significant.

3.4.3.2 Alternative C: "Slope Lining and Channel Widening"

3.4.3.2.1 Alternative C Impacts

a) Conflict with or obstruct implementation of the applicable air quality plan.

Less than Significant with Mitigation. The construction of the Alternative C project channel improvements and utility facility relocations discussed in Section 1.10 would be implemented in accordance with all applicable air quality management plans to ensure impacts to air quality are reduced to the greatest extent possible. Actions include, but are not limited to the preparation of a standard dust control management plan in compliance with the CVSIP, and the enforcement of mitigation measures in the event that criteria pollutant thresholds are exceeded during construction activities.

Although construction of Alternative B would not prevent the SCAQMD from implementing actions set forth in the air quality plans, thus resulting in a less than significant impact under this threshold (a), the project will result in significant impacts associated with criteria pollutants. As demonstrated below (under threshold (b)), and Section 3.4.3.4.2 Significance after Mitigation, Alternative C will not exceed the SCAQMD thresholds of significance after mitigation. Therefore, Alternative C will result in a less than significant impact after mitigation.

b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation.

Less than Significant with Mitigation. Similar to the Proposed Project, the length of Alternative C is approximately two miles and will involve extensive grading along this entire reach, the removal of the drop structure, soil over-excavation and re-compaction, importing aggregate base, rebar and concrete. Alternative C also involves the widening of the channel between Airport Boulevard and the northernmost UPRR bridge, and would result in a total project area of 136± acres of possible disturbance.

Due to the excess cut associated with Alternative C, construction will require a larger number of hauling trips than associated with Alternatives A (Proposed Project) or B, to export channel materials and to import concrete, steel and other construction materials. It is estimated that Alternative C will require 82,000 cubic yards of concrete and aggregate base (import), 4,500 tons of reinforcing steel (import), and result in an export of 772,333 cubic yards of surplus soil. It is assumed that each haul round trip will be approximately 6-10 miles[6] based upon an average haul load of 20 tons (or 16 cubic yards)[7]. It is assumed that buildout (import and export) of Alternative C would occur evenly over an 18-month period. The following table provides unmitigated construction-related air quality impacts for Alternative C buildout.

Table 3-8
Unmitigated Construction Emissions Summary
Alternative C- Slope Lining and Channel Widening
Maximum Daily Emissions (lbs./day)

	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Max. Daily Emissions	240.92	382.67	33.81	0.56	20.51	16.12
SCAQMD Threshold*	**550.00**	**100.00**	**75.00**	**150.00**	**150.00**	**55.00**
Exceeds Threshold	**No**	**Yes**	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.1. See Appendix B for detailed tables. Value shown represents the average unmitigated emissions from summer and winter.
* Source: "SCAQMD Air Quality Significance Thresholds" prepared by South Coast Air Quality Management District, March 2015.

As shown in the Table 3-8 above, SCAQMD daily thresholds for CO, ROG, SOx, PM_{10} and $PM_{2.5}$ are not projected to be exceeded during construction of any phase of Alternative C development. However, NOx emissions have the potential to slightly exceed SCAQMD daily thresholds due to simultaneous use of construction equipment and material hauling. To reduce NOx emissions, the same mitigation measures applied to the Proposed Project will be applied to Alternative C. The list of mitigation measures is presented in Section 2.5.7.

Utility Projects

For analysis purposes, impacts associated with relocation of the irrigation lateral, SCG gas pipeline, and IID power poles were included in the overall Alternative C impact analysis, above. As shown in Table 3-8, unmitigated impacts associated with construction emissions would be significant for NOx. There will be no new operational impacts associated with the utility relocations. Existing on-going service maintenance to the lateral, gas lines, and power poles will continue after project completion. As discussed below, there will be no significant impacts with mitigation.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).

Less than Significant. Please see Section 3.4.3.2.4 Cumulative Impacts.

[6] Soil will be exported to CVWD WWRP-4 (3.5 miles from project site), concrete from Desert Redi-Mix (3.8 miles from project site), and the reinforced steel from Sepulveda Building Materials (5.5 miles from project site).

[7] The air emission modeling software, CalEEMod, assumes each haul load is approximately 20 tons. This assumption is programmed into the model.

c) Expose sensitive receptors to substantial pollutant concentrations.

Less than Significant with Mitigation. The same LST parameters used to analyze the Proposed Project were used to analyze impacts associated with Alternative C. The maximum area of disturbance associated with buildout of Alternative C is approximately 136 acres and it is assumed that buildout would occur gradually over the course of 18 months. Although the total project area is greater than five-acres, the area of daily disturbance (for purposes of LST analysis only) is limited to five acres or less per day at any given location.[8] As such, the five-acre look up table is appropriate under the SCAQMD's methodology to screen for potential localized air quality impacts.[9]

The Mass Rate Look-Up tables for LSTs were used to determine if the Alternative C project would have the potential to generate significant adverse localized air quality impacts during construction. The LST for Source Receptor Area (SRA) 30 (Coachella Valley) was used to determine LST emission thresholds. The distance from the emission source and the maximum daily site disturbance also determines emission thresholds. For analysis purposes, the worst-case scenario of a sensitive receptor being within 25 meters was used and is representative of the residential development in proximity of the planning area under the Alternative C scenario.

Results show that LST thresholds would not be exceeded for CO, NOx, and PM_{10} during project development under unmitigated conditions. However, $PM_{2.5}$ emissions have the potential to exceed LST thresholds due to dust from off-road construction vehicles. To reduce $PM_{2.5}$ emissions and overall project impacts to less than significant levels, mitigation measures are set forth in Section 2.5.7.

Table 3-9
Unmitigated Localized Significance Thresholds
Alternative C- Slope Lining and Channel Widening
25 Meters, 5 Acres (lbs. per day)

	CO	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Max. Onsite Emissions[1]	126.67	194.30	9.71	8.40
LST	**2,292**	**304**	**14**	**8**
Exceed?	**No**	**No**	**No**	**Yes**

Source: CalEEMod Version 2016.3.1. See Appendix B. Emissions show the highest emitting day for all emissions generated onsite during construction.
1. Maximum onsite emissions occur during the grading period in 2020.

Utility Projects
For analysis purposes, impacts associated with relocation of the irrigation lateral, SCG gas line, and IID power poles were included in the overall project impact analysis, above. As shown in Table 3-9, impacts to sensitive receptors would be significant without mitigation. With adherence to the mitigation program provided in Section 2.5.7, the level of impact is less than significant.

e) Create objectionable odors affecting a substantial number of people.

Less than Significant. Alternative C is not expected to generate significant objectionable odors during any phase of construction. The Proposed Project has the potential to result in short-term odors associated with paving and other construction activities. However, construction-related odors would be quickly dispersed below detectable thresholds and as distance from the construction site increases. Therefore, impacts from objectionable odors are expected to be less than significant.

8 The equipment-specific grading rates are based on the SCAQMD's Fact Sheet for Applying CalEEMod to Localized Significance Thresholds guidance document. The LST methodology focuses on the equipment that may be operated and acreage that may be disturbed in areas immediately proximate to potential sensitive receptors, even if other equipment may be operated or other acreage may be disturbed in areas that are farther away from the sensitive receptor.

9 South Coast AQMD, "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds."

Utility Projects
The relocation of the irrigation lateral, SCG gas line, and IID power poles have the potential to result in short-term odors associated with operation of heavy equipment and other construction activities. However, construction-related odors would be quickly dispersed below detectable levels and as distance from the construction area increases. Therefore, impacts from objectionable odors are expected to be less than significant. There will be no maintenance-related impacts associated with objectionable odors.

3.4.3.2.2 Alternative C Mitigation Measures

The same mitigation measures required for the Proposed Project, under the existing construction schedule, would be applied to Alternative C to reduce impacts associated with NOx emissions (See Section 2.5.7). However, construction-related NOx emissions would still exceed SCAQMD thresholds under the existing mitigation program. It is feasible for the construction hauling period to be extended to limit the number of daily haul trips, thus reducing NOx emissions to less than significant levels. However, extending the construction period may have significant impacts on scheduling and funding for the project. Please see Section 3.4.3.2.3, below.

3.4.3.2.3 Alternative C Significance After Mitigation

The following discussion provides analysis of significance after mitigation with regard to criterion b) and d), above, which are considered less than significant after mitigation.

b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation.

Less than Significant. As shown in the table below, adherence to the above mitigation measures would reduce construction-related criteria pollutant emissions; however, NOx emission will still exceed SCAQMD thresholds. No other mitigation measures could be implemented to further reduce impacts associated with NOx under the existing construction schedule.

Table 3-10
Mitigated Construction Emissions Summary
Alternative C- Slope Lining and Channel Widening
Maximum Daily Emissions (lbs./day)

	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Max. Daily Emissions	276.04	111.67	12.57	0.56	7.35	4.51
SCAQMD Threshold*	**550.00**	**100.00**	**75.00**	**150.00**	**150.00**	**55.00**
Exceeds Threshold	**No**	**Yes**	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.1 See Appendix B for detailed tables. Value shown represents the average mitigated emissions from summer and winter.
* Source: "SCAQMD Air Quality Significance Thresholds" prepared by SCAQMD, March 2015.

In order to further reduce impacts related to NOx, which are directly related to haul trips, the project construction schedule would need to extend the hauling period by several months thereby limiting the number of haul trips per day. Although extending the construction period would reduce daily NOx emissions, extending the construction period may have significant impacts on scheduling and funding for the project. However, for purposes of this analysis, it is feasible for Alternative C to reduce emissions to less than significant levels by limiting daily haul trips and extending the project construction schedule.

d) Expose sensitive receptors to substantial pollutant concentrations.

Less than Significant. As shown in the table below, adherence to the mitigation measures (AQ-1-AQ-3) set forth in Section 2.5.7 would reduce LST-related criteria pollutant emissions below SCAQMD thresholds. Construction emissions will be further minimized through best management practices. Therefore, impacts to LSTs from construction of Alternative C will be less than significant.

Table 3-11
Mitigated Localized Significance Thresholds
Alternative C- Slope Lining and Channel Widening
25 Meters, 5 Acres
(lbs. per day)

	CO	NO_x	PM_{10}	$PM_{2.5}$
Max. Onsite Emissions[1]	147.54	21.66	1.45	1.15
LST	**2,292**	**304**	**14**	**8**
Exceed?	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2016.3.1. See Appendix B. Emissions show the highest emitting day for all emissions generated onsite during construction.
1. Maximum onsite emissions occur during the grading period in 2020.

3.4.3.2.4 Alternative C Cumulative Impacts

Cumulative air quality impacts associated with Alternative C would be greater than the Proposed Project due to increased number of haul trips. Construction emissions associated Alternative C, specifically NOx emissions, will exceed SCAQMD thresholds and create a significant and unavoidable impact. However, if we assume that it is feasible for the Alternative to reduce NOx emissions to less than significant levels by extending the hauling period of construction, then cumulative air quality impacts related to construction and operation of Alternative C are considered less than significant. Thus, development and operation of Alternative C will not exceed air quality maximum daily thresholds (mitigated plus extended hauling schedule) for CO, NOx and PM_{10}, which are cumulative thresholds by their nature. Therefore, impacts related to ozone and PM_{10} emissions will be less than significant.

3.4.3.3 Alternative D: "No Project" Alternative

3.4.3.3.1 Alternative D Impacts

a) Conflict with or obstruct implementation of the applicable air quality plan.

No Impact. Under Alternative D, existing conditions would not be altered and there would be no new emissions of criteria pollutants. Because there will be no new impacts to the region's air quality, this alternative will not conflict or obstruct implementation of an applicable air quality plan. There will be no impact.

b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation.

No Impact. Under Alternative D, existing conditions would not be altered and there would be no new emissions of criteria pollutants. Because there will be no new impacts to the region's air quality, this alternative will not violate any air quality standard or contribute substantially to an existing or projected air quality violation. There will be no impact.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).

No Impact. Under Alternative D, existing conditions would not be altered and there would be no new emissions of criteria pollutants. Because there will be no new impacts to the region's air quality, this alternative will not result in a cumulatively considerable net increase of any criterial pollutant for which the project region is in non-attainment under an applicable federal or state ambient standard. There will be no impact.

d) Expose sensitive receptors to substantial pollutant concentrations.

No Impact. Under Alternative D, existing conditions would not be altered and there would be no new emissions of criteria pollutants. Because there will be no new impacts to the region's air quality, this alternative will not expose sensitive receptors to substantial pollutant concentrations. There will be no impact.

e) Create objectionable odors affecting a substantial number of people.

No Impact. Under Alternative D, existing conditions would not be altered and there would be no new emissions of criteria pollutants. Because there will be no new impacts to the region's air quality, this alternative will not create objectionable odors affecting a substantial number of people. There will be no impact.

3.4.3.3.2 Alternative D Mitigation Measures

Alternative D will have no impact on air quality. Mitigation measures are not required.

3.4.3.3.3 Alternative D Significance After Mitigation

Alternative D will have no impact on air quality.

3.4.3.3.4 Alternative D Cumulative Impacts

Under Alternative D, existing conditions would not be altered and there would be no new emissions of criteria pollutants. Because there will be no new impacts to the region's air quality, this alternative will not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. There will be no impact.

3.4.3.4 Environmentally Superior Alternative

Of the three "build" alternatives, Alternative A (Proposed Project) is the environmentally superior project, emitting less criteria pollutants than the other two build alternatives.

3.4.4 Biological Resources

This section provides environmental analysis of potential biological resource impacts that would result from implementation of project alternatives. The project area within the CVSC consists of a soft, earthen channel bottom bounded by earthen side slopes and levees. Lands outside the CVSC, but in and surrounding the project planning area, are a patchwork of commercial buildings and single-family rural residential dwellings, agriculture, and natural lands (undeveloped, some of which have been previously disturbed). Within the channel, habitat includes desert scrub, riparian and other habitats, which are periodically disturbed during channel maintenance.

Surrounding limited undisturbed and ruderal habitats have been fragmented by public roads, operation of off-road vehicles (existing dirt and paved roads and trails), dumping of trash, debris and waste and the presence of domestic animals such as dogs and livestock. All of these onsite and adjacent human-related disturbances have had adverse impacts on the natural environment in the immediate vicinity and have negatively affected the distribution, diversity and abundance of flora and fauna.

Please see Section 2.6.4 and Section 2.6.5 for a detailed description of existing biological conditions.

3.4.4.1 Alternative B: "Fully-Lined Channel"

3.4.4.1.1 Alternative B Impacts

a) Have a substantial adverse effect, either directly or indirectly, or through habitat modifications, on any species identified as a candidate, sensitive, or special status species (including species listed as threatened or endangered) in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Less than Significant with Mitigation. Alternative B has the potential to impact sensitive species both directly through habitat removal or modification. The Biological Resource Assessment Report and Coachella Valley Multiple Species Habitat Conservation Plan Compliance Analysis, provided in Appendix C of this document, summarize information on all special-status species that have been reported within the vicinity, or are considered to have some potential to occur onsite based on geographic distribution and presence of potentially suitable habitat. These include burrowing owl, which have occupied the subject channel reach in the past, as well as migratory birds that take advantage of channel riparian habitat.

When compared to the Proposed Project, Alternative B will result in a greater loss of riparian and other habitats, which is considered burrowing owl and migratory bird habitat, due to "fully lining" the channel bottom.

As discussed in Section 2.6.6 and 2.6.7, all impacts to sensitive or special status species will be mitigated to less than significant levels through adherence to mitigation measures. However, in addition to the mitigation measures required for the Proposed Project, Alternative B would require further mitigation (offsite) to reduce impacts associated with the loss of additional riparian and other habitats. Additional mitigation would be determined by the CDFW and USACE during the application review process if Alternative B was deemed the environmentally superior alternative.

Utility Projects
The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways and graded shoulders, service roads, and existing utility structures. One IID power pole located within the channel would be removed and the corresponding channel bottom will be excavated and lined at this location. As with the channel improvements, the utility relocation projects would adhere to mitigation measures BIO-1 through -10 to ensure impacts to sensitive species are avoided or mitigated to less than significant levels.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Less than Significant with Mitigation. The Proposed Project would result in permanent impacts to 22.85 acres of CDFW waters, inclusive of 9.45 acres of waters of the US. Alternative B would result in permanent impacts to 49.09 acres of CDFW waters, inclusive of 31.26 acres of waters of the US. Once construction is completed large portions of the centerline of the pilot channel will be lined with concrete, permanently removing vegetation although some vegetation may re-establish itself over time. Given the extent of permanent loss of riparian and other habitats, impacts will be significant without mitigation. The same mitigation measures applied to the Proposed Project in Section 2.6.7 would be applied to Alternative B. However, Alternative B will require additional mitigation to reduce impacts associated with the loss of additional riparian and other habitats. Additional mitigation would be determined by the CDFW during the Section 1602 application review process if Alternative B were deemed the environmentally superior alternative.

Utility Projects
The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways and graded shoulders, service roads, and existing utility structures. One IID power pole located within the channel would be removed, and the corresponding channel bottom will be excavated and lined at this location. Impacts associated with the utility projects have been accounted for in total project impacts, as discussed above. Therefore, adherence to mitigation measures set forth in Section 2.6.7 will reduce potential impacts to riparian habitats to less than significant levels.

Potential impacts to federally protected wetlands are further discussed in response to c), below.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Less than Significant: The complete Jurisdictional Delineation[10] can be found in Appendix H. Potential federally regulated wetlands were determined using the USACE's *Wetlands Delineation Manual* and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*.

There are no USACE jurisdictional wetlands within the Project area. With regard to waters of the US, Alternative B would result in 31.26 acres of permanent impacts and 37.82 acres of temporary impacts to these federal waters. (See Exhibit 3-1). Once construction is completed, portions the low-flow (pilot) channel will be reestablished and wetland vegetation will reestablish naturally. Although large portions of the channel will be lined with concrete and will permanently remove wetland vegetation, no lands within the channel are designated as federally protected wetlands as defined by Section 404. Similar to the Proposed Project, CVWD will comply with Section 404 of the CWA and implement mitigations, as required. Furthermore, USACE determined that due to periodic disturbance and vegetation management, as well as large-scale flooding that can cause significant scour and erosion of soils and vegetation,

> "….the limited construction-related and long-term impacts from the project which result in no loss of waters of the US. The project will not result in a reduction of waters of the US, will not substantially reduce, divert or obstruct flows, will not adversely affect water

[10] Jurisdictional Delineation Report for the Coachella Valley Stormwater Channel Improvement Project, prepared by AMEC Foster Wheeler, January 26, 2016.

> chemistry or soil/channel bed substrates. The channel improvement project will not have a significant temporary or long-term adverse effect on the various parameters of the channel's existing aquatic ecosystem or organisms, including nutrients, currents or low flow channel circulation, fluctuation in water volume and/or velocity, and salinity occurring in the channel."[11]

Therefore, due to the lack of federal wetlands and limited extent of permanent impacts to riparian and other federal waters, impacts will be less than significant.

Utility Projects

The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways, service roads, and existing utility structures. One IID power pole located within the channel would be removed, and the corresponding channel bottom will be excavated and lined at this location. As previously discussed, there are no federal wetlands located within the subject reach of the channel. Due to the lack of federal wetlands and limited extent of permanent loss of riparian and other non-wetland habitats, impacts will be less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Less than Significant with Mitigation: Unlike the Proposed Project, Alternative B will permanently disrupt and remove large areas of vegetation within the subject reach of the channel that could potentially impact native wildlife nursery sites, including and especially bird nesting sites. Impacts to birds covered by MBTA could be significant if construction activities are undertaken during nesting season, without the implementation of mitigation measures. Under Alternative B, CVWD will be required to implement mitigation measures that adhere to conditions set forth under the MBTA to ensure impacts to migratory or other nesting birds will be less than significant. Mitigation measure set forth in Section 3.5.6 will also apply to Alternative B. However, additional mitigation measures would be required to offset impacts associated with the reduction of wildlife nursery sites.

[11] CE SPL RGS (File Number 2018-00300)



LEGEND

- Waters of the US
- CDFW Jurisdiction*

*Impact areas include Waters of the US

Impact Analysis

- Permanent Impact to Waters of the US = 31.26
- Permanent Impact to CDFW Jurisdiction = 49.09
- Temporary Impact to Waters of the US = 37.82
- Temporary Impact to CDFW Jurisdiction = 59.06

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Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Alternative B - Jurisdictional Impacts
Coachella Valley Water District

WATER DISTRICT

Exhibit
3-1

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

No Impact: Neither the County nor the City in which the CVSC Improvement Project will occur has local ordinances protecting biological resources. Therefore, Alternative B, including the utility relocation projects, will not conflict with any local policies or ordinances protecting biological resources.

Both potentially affected jurisdictions, as well as CVWD, are signatories to and participate in the implementation of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). Impacts associated with the CVMSHCP are further discussed below.

f) Conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

Less that Significant with Mitigation: The CVMSHCP recognizes the importance of maintaining regional flood control facilities and makes provision for such operations and maintenance even in Conservation Areas.[12] The Alternative B project is located outside of a CVMSHCP Conservation Area. As a Permittee under the CVMSHCP, CVWD must comply with all applicable terms and conditions of the CVMSHCP and Implementing Agreement (See Section 13.0 of the CVMSHCP Implementing Agreement). This includes, but not limited to, implementation of "Land Use Adjacency Guidelines."

Compliance with the mitigation measures presented in Section 2.6.7 (BIO-1, BIO-2, BIO-4, and BIO-10 through 12), and compliance with all requirements of the CVMSHCP, will help ensure that Alternative B will not conflict with any local policy, ordinance, or Habitat Conservation Plan. However, additional mitigation measures would be required to off-set impacts associated with the permanent loss of habitat due to the channel bottom lining. Therefore, impacts will be less than significant with implementation of additional mitigation measures.

Utility Projects
The areas impacted by the relocation of the CVWD irrigation lateral, SCG gas pipeline, and IID power powers are located outside of a CVMSHCP Conservation Area. As a Permittee under the CVMSHCP, CVWD must comply with all applicable terms and conditions of the CVMSHCP and Implementing Agreement (See Section 13.0 of the CVMSHCP Implementing Agreement), including implementation of "Land Use Adjacency Guidelines."

Compliance with the mitigation measures presented in Section 2.6 (BIO-1, BIO-2, BIO-4, and BIO-10 through 12), including compliance with all requirements of the CVMSHCP, will ensure that the utility relocation portion of the Project will not conflict with any local policy, ordinance, or Habitat Conservation Plan. Therefore, with mitigation impacts will be less than significant.

3.4.4.1.2 Alternative B Mitigation Measures

Alternative B will require an expansion of mitigation measures presented in Section 2.6.7 due to the permanent loss of potential migratory bird habitat and nesting areas associated with fully lined channel alternative. Impacts can be mitigated to less than significant levels; however, mitigation measures would be more substantial and costlier compared to the Proposed Project.

[12] See Coachella Valley Multiple Species Habitat Conservation Plan, Section 7.3.1.1: Covered Operation, Maintenance, and Safety Activities within Existing Rights-of-Way or Easements.

3.4.4.1.3 Alternative B Significance After Mitigation

As noted above, potential impacts associated with the implementation of the Alternative B scenario would be substantially greater than those associated with Alternative A (Proposed Project) or Alterative C. Impacts can be off-set and otherwise mitigated through habitat restoration elsewhere, and through measures to protect species migratory bird species and bats that may continue to use the area if Alternative B were built. Therefore, impacts can be reduced to a less than significant level by expansion of and adherence to the mitigation measures set forth in Section 2.6.7. Operational impacts associated with Alternative B will be less than significant.

3.4.4.1.4 Alternative B Cumulative Impacts

Because of the permanent impacts associated with the greater channel lining associated with this alternative, Alternative B will make a considerable contribution to cumulative impacts to biological resources. The species of concern in the project area are covered species under the CVMSHCP. As described above, potential impacts to biological resources will be largely avoided or mitigated to less than significant levels with implementation of the mitigation program provided In Section 2.6.7. However, Alterative B will permanently remove habitat that could be potentially used for migratory birds and nesting and require an expansion of mitigation measures.

Therefore, the project's impacts to biological resources will be less than significant and the project's contribution to cumulative impacts will not be cumulatively considerable.

3.4.4.2 Alternative C: "Slope Lining and Channel Widening"

3.4.4.2.1 Alternative C Impacts

a) Have a substantial adverse effect, either directly or indirectly, or through habitat modifications, on any species identified as a candidate, sensitive, or special status species (including species listed as threatened or endangered) in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Less than Significant with Mitigation. Alternative C has the potential to impact sensitive species both directly through habitat removal and/or modification. The Biological Resource Assessment Report and Coachella Valley Multiple Species Habitat Conservation Plan Compliance Analysis, provided in Appendix C of this document summarize information on all special-status species that have been reported within the vicinity, or are considered to have some potential to occur onsite based on geographic distribution and presence of potentially suitable habitat. As discussed in Section 2.6.6 and 2.6.7, all impacts to sensitive or special status species will be mitigated to less than significant levels through adherence to mitigation measures.

Utility Projects
The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways and graded shoulders, service roads, and existing utility structures. One IID power pole located within the channel would be removed and the corresponding channel bottom will be excavated and lined at this location. As with the channel improvements, the utility relocation projects would adhere to mitigation measures BIO-1 through -10 (see Section 2.6) to ensure impacts to sensitive species are avoided or mitigated to less than significant levels.

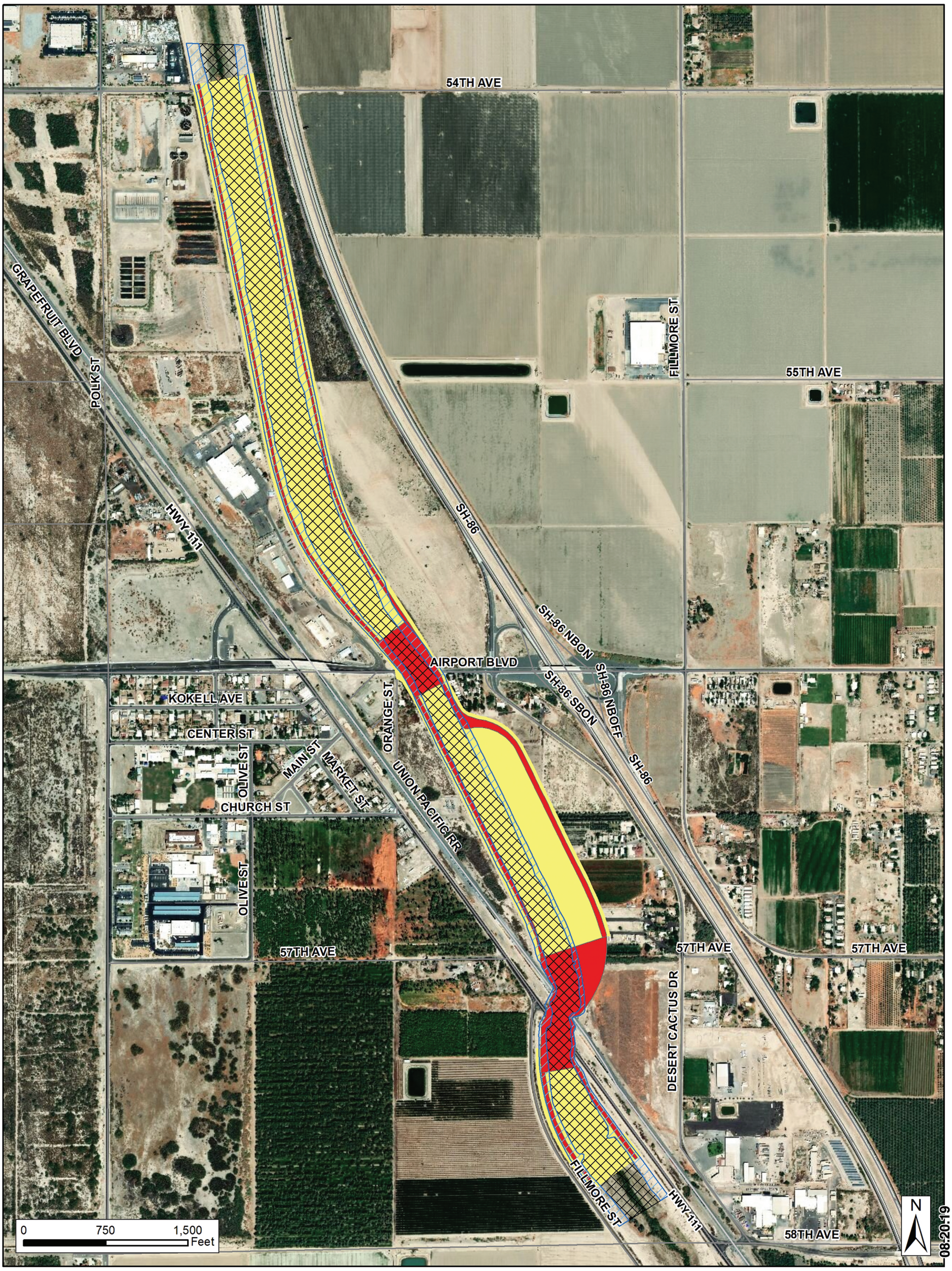
Potential impacts to biological resources associated with the Proposed Project are similar to those of Alternative C, and therefore the same mitigation measures apply.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Less than Significant with Mitigation. The Proposed Project would result in permanent impacts to 22.85 acres of CDFW waters, inclusive of 9.45 acres of waters of the US. Alternative C would result in permanent impacts to 22.07 acres of CDFW waters, inclusive of 9.45 acres of waters of the US . (See Exhibit 3-2) Once construction is completed the centerline of the pilot channel will be reestablished and the soft bottom portions of the channel will naturally re-vegetate, as they do today, following channel maintenance activities. The widened portion of the channel will also naturally re-vegetate. The extent of net permanent loss of riparian and other habitats, while less than that associated with the Proposed Project, will still be significant without mitigation. The same mitigation measures applied to the Proposed Project would be applied to Alternative C. See Section 2.6.7 Mitigation Measures.

Utility Projects
The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways and graded shoulders, service roads, and existing utility structures. One IID power pole located within the channel would be removed, and the corresponding channel bottom will be excavated and lined at this location. Impacts associated with the utility projects have been accounted for in total project impacts, as discussed above. Therefore, adherence to mitigation measures set forth in Section 2.6.7 will reduce potential impacts to riparian habitats to less than significant levels.

Potential impacts to federally protected wetlands are further discussed in response to c) below.



LEGEND

- Waters of the US
- CDFW Jurisdiction*

*Impact areas include Waters of the US

Impact Analysis

- Permanent Impact to Waters of the US = 9.45
- Permanent Impact to CDFW Jurisdiction = 22.07
- Temporary Impact to Waters of the US = 59.61
- Temporary Impact to CDFW Jurisdiction = 86.08

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PLANNING & RESEARCH, INC.

Coachella Valley Stormwater Channel Improvement Project
Avenue 54 to Thermal Drop Structure
Alternative C - Jurisdictional Impacts
Coachella Valley Water District

WATER DISTRICT

Exhibit
3-2

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Less than Significant: There are no USACE jurisdictional wetlands within the Project area. With regard to waters of the US, Alternative C would result in 9.45 acres of permanent impacts and 59.61 acres of temporary impacts to these federal waters. (See Exhibit 3-1). Once construction is completed, portions the low-flow (pilot) channel will be reestablished and vegetation will reestablish naturally. Although portions of the channel will be lined with concrete and will permanently remove wetland vegetation, no lands within the channel are designated as federally protected wetlands as defined by Section 404. Similar to the Proposed Project, CVWD will comply with Section 404 of the CWA and implement mitigations, as required. Furthermore, USACE determined that due to periodic disturbance and vegetation management, as well as large-scale flooding that can cause significant scour and erosion of soils and vegetation,

> "….the limited construction-related and long-term impacts from the project which result in no loss of waters of the US. The project will not result in a reduction of waters of the US, will not substantially reduce, divert or obstruct flows, will not adversely affect water chemistry or soil/channel bed substrates. The channel improvement project will not have a significant temporary or long-term adverse effect on the various parameters of the channel's existing aquatic ecosystem or organisms, including nutrients, currents or low flow channel circulation, fluctuation in water volume and/or velocity, and salinity occurring in the channel."[13]

Therefore, due to the lack of federal wetlands and limited extent of permanent impacts to riparian and other federal waters, impacts will be less than significant.

Utility Projects
The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways, service roads, and existing utility structures. One IID power pole located within the channel would be removed, and the corresponding channel bottom will be excavated and lined at this location. As previously discussed, there are no federal wetlands located within the subject reach of the channel. Due to the lack of federal wetlands and limited extent of permanent loss of riparian and other non-wetland habitats, impacts will be less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Less than Significant with Mitigation: Similar to the Proposed Project, Alternative C will temporarily disrupt or remove vegetation within a short reach of the channel and could impact native wildlife nursery sites, including and especially bird nesting sites. Buildout of Alternative C will not result in habitable structures or fencing that would potentially restrict wildlife movement from occurring. Impacts to birds covered by MBTA could be significant if construction activities are undertaken during nesting season, without the implementation of mitigation measures. Under Alternative C, CVWD will be required to implement mitigation measures that adhere to conditions set forth under the MBTA, including nest avoidance and construction setbacks until birds fledge, to ensure impacts to migratory or other nesting birds will be less than significant. Mitigation measure set forth in Section 3.5.6 will also apply to Alternative C.

[13] CE SPL RGS (File Number 2018-00300)

Utility Projects
The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways and graded shoulders, service roads, and existing utility structures. One IID power pole located within the channel would be removed, and the corresponding channel bottom will be excavated and lined at this location. Buildout of subject utility relocations will not result in habitable structures or fencing that would potentially restrict wildlife movement from occurring. CVWD will be required to implement mitigation measures that adhere to conditions set forth under the MBTA to ensure impacts to migratory or other nesting birds will be less than significant. Mitigation measure BIO-3 for the MBTA set forth in Section 2.6.7 Mitigation Measures would apply.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

No Impact: Neither the County nor the City in which the CVSC Improvement Project will occur has local ordinances protecting biological resources. Alternative C, including the utility relocation projects, will not conflict with any local policies or ordinances protecting biological resources.

Both potentially affected jurisdictions, as well as CVWD, are signatories to and participate in the implementation of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). Impacts associated with the CVMSHCP are further discussed below.

f) Conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

Less that Significant with Mitigation: The Alternative C is located outside of a CVMSHCP Conservation Area. As a Permittee under the CVMSHCP, CVWD must comply with all applicable terms and conditions of the CVMSHCP and Implementing Agreement. Compliance with the mitigation measures presented in Section 2.6.7) including compliance with all requirements of the CVMSHCP, will ensure that the CVSC improvement project Alternative C will not conflict with any local policy, ordinance, or Habitat Conservation Plan. Therefore, with mitigation impacts will be less than significant.

Utility Projects
The areas impacted by the relocation of the CVWD irrigation lateral, SCG gas pipeline, and IID power poles are located outside of a CVMSHCP Conservation Area. As a Permittee under the CVMSHCP, CVWD must comply with all applicable terms and conditions of the CVMSHCP and Implementing Agreement (See Section 13.0 of the CVMSHCP Implementing Agreement), including implementation of "Land Use Adjacency Guidelines."

Compliance with the mitigation measures presented below (BIO-1, BIO-2, BIO-4, and BIO-10 through 12), including compliance with all requirements of the CVMSHCP, will ensure that the utility relocation portion of the Project will not conflict with any local policy, ordinance, or Habitat Conservation Plan. Therefore, with mitigation impacts will be less than significant.

3.4.4.2.2 Alternative C Mitigation Measures

Please see Section 2.6.7, Mitigation Measures for further reference. There will be no need for any change or addition of mitigation measures under this alternative.

3.4.4.2.3 Alternative C Significance After Mitigation

Impacts to biological resources associated with construction of Alternative C will be reduced to a less than significant level by adherence to the mitigation measures set forth in Section 2.6.7. Operational impacts associated with alternative C will be less than significant.

3.4.4.2.4 Alternative C Cumulative Impacts

Similar to the Proposed Project, with implementation of mitigation measures Alternative C will not make a considerable contribution to cumulative impacts to biological resources. The species of concern in the project area are covered species under the CVMSHCP. As described above, potential impacts to biological resources will be largely avoided or mitigated to less than significant levels with implementation of the mitigation program provided In Section 2.6.7. CVWD shall also comply with all applicable terms and conditions of the CVMSHCP and its Implementing Agreement including, but not limited to implementation of the "Land Use Adjacency Guidelines", which are set forth in the above mitigation measures. Therefore, the project's impacts to biological resources will be less than significant and the project's contribution to cumulative impacts will not be cumulatively considerable.

3.4.4.3 Alternative D: "No Project" Alternative

3.4.4.3.1 Alternative D Impacts

a) Have a substantial adverse effect, either directly or indirectly, or through habitat modifications, on any species identified as a candidate, sensitive, or special status species (including species listed as threatened or endangered) in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

No Impact. Alternative D will result in the continuation of existing conditions. There will be no adverse effect, either directly or indirectly, or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. There will be no impact.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

No Impact. Alternative D will result in the continuation of existing conditions and no new impacts will result. There will be no new adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. There will be no impact.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

No Impact. Alternative D will result in the continuation of existing conditions and no new impacts will result. There will be no new adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means. There will be no impact.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

No Impact. Alternative D will result in the continuation of existing conditions and no new impacts will result. There will be no additional interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. There will be no impact.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

No Impact. Alternative D will result in the continuation of existing conditions and no new impacts will result. There will be no conflict with any local policies or ordinances protecting biological resources. There will be no impact.

f) Conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

No Impact. Alternative D will result in the continuation of existing conditions and no new impacts will result. There will be no conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved legal, regional or state habitat conservation plan. There will be no impact.

3.4.4.3.2 Alternative D Mitigation Measures

Alternative D will have no impact on biological resources. Mitigation measures are not required.

3.4.4.3.3 Alternative D Significance After Mitigation

Alternative D will have no impact on biological resources.

3.4.4.3.4 Alternative D Cumulative Impacts

Alternative D will have no impact on biological resources. There will be no cumulative impacts.

3.4.4.4 Environmentally Superior Alternative

With regard to potential impacts to biological resources, the No Project Alternative is superior to the three "build" alternatives. Of the three "build" alternatives, Alternative A (Proposed Project) is the environmentally superior project because it will result in fewer impacts to biological resources such as wildlife habitats within the channel and adjacent fallow and cultivated agricultural lands.

3.4.5 Cultural Resources and Tribal Resources

This section provides environmental analysis of potential cultural and tribal resource impacts that would result from implementation of project alternatives. A cultural resources survey and report were prepared for the proposed CVSC project[14], which serves as the basis for much of the following discussion.
Archaeological resources in the planning area include numerous village sites associated with the shoreline of ancient Lake Cahuilla, which was created and maintained by inflows of the Colorado River. The subject CVSC project area is located within the boundary of the ancient Lake Cahuilla, an area where most paleontological resources in the Coachella Valley have occurred.[15]

The Coachella Valley has been home to Native Americans for millennia. The Cahuilla Indians are the most recently identifiable native culture to evolve in the Coachella Valley. Pre-European occupation in the Valley has been pieced together from a wide variety of studies and assessments prepared for large scale planning efforts and for individual projects. Knowledge and information on native culture, technology, ethnobotany, and other cultural attributes continue to emerge as additional research adds to current data, interpretation, and understanding.

Please see Section 2.7.4 and Section 2.7.5 for a detailed description of existing cultural and tribal resources conditions.

3.4.5.1 Alternative B: "Fully-Lined Channel"

3.4.5.1.1 Alternative B Impacts

Cultural Resources

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

No Impact. As discussed in Section 2.7.5, no "historic properties" or "historical resources" are present within the project APE, and thus the Alternative B will have No Effect/No Impact on any "historic properties"/ "historical resources", as defined in § 15064.5 of the CEQA Guidelines.

Utility Projects
No "historic properties", "historical resources" or "archaeological resource" are present within the project APE or surrounding lands, which includes the IID project sites and most of the CVWD irrigation lateral. Also, the western portions of the SCG gas line relocation lies outside the APE but in areas within disturbed and graded portions of the Highway 111 right of way. While resources are not expected to be encountered during excavations associated with the subject utility projects, mitigation measure CUL-1 (see Section 2.7) will further ensure that the Project-related utility projects will have No Effect/No Impact on any "historic property", "historical resource" or "archaeological resource", as defined in § 15064.5 of the CEQA Guidelines.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

No Impact. Alternative B will have the same impacts as the Proposed Project. No "historic properties", "historical resources" or "archaeological resource" are present within the project APE, and thus the undertaking will have No Effect/No Impact on any "historic property", "historical resource" or "archaeological resource", as defined in § 15064.5 of the CEQA Guidelines.

[14] "Identification and Evaluation of Historic Properties for the Coachella Valley Stormwater Channel Improvement Project", prepared by CRM TECH. February 8, 2016.

[15] "Paleontological Resources Technical Report – City of La Quinta General Plan", prepared by CRM TECH. August 2010.

Utility Projects
No "historic properties", "historical resources" or "archaeological resource" are present within the project APE, which includes the IID project sites and most of the CVWD irrigation lateral. Also, the western portions of the SCG gas line relocation lies outside the APE but in areas within disturbed and graded portions of the Highway 111 right of way. While resources are not expected to be encountered during excavations associated with the subject utility projects, mitigation measure CUL-1 (see Section 2.7) will further ensure that the Project-related utility projects will have No Effect/No Impact on any "archaeological resource", as defined in § 15064.5 of the CEQA Guidelines.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant with Mitigation. The subject CVSC project area is located within the boundary of the ancient Lake Cahuilla, an area where most paleontological resources in the valley in the form of bi-vales have occurred.[16] Alternative B would be constructed upon previously disturbed and excavated lands comprised of alluvial fan and aeolian (windblown) deposits, including those from the adjoining channel to construct levees and service roads. The project planning area is well removed from intact bedrock or sedimentary rock that most typically harbors paleontological resources. Similar to the Proposed Project, Alternative B would somewhat widen and deepen the existing channel within lands that have been previously disturbed and developed. Project area soils are from the Holocene epoch, of relatively recent age, and are therefore not expected to contain paleontological resources. Therefore, the planning area has a low, less than significant potential to contain paleontological resources or for paleontological resources to be impacted.

In the event paleontological resources are encountered during project construction mitigation measure CUL-3 is included in Section 2.7.7 to ensure impacts are less than significant.

Utility Projects
As previously discussed, the planning area has a low, less than significant potential to contain sensitive paleontological resources or for such resources to be impacted. However, in the event sensitive paleontological resources are encountered during any of the utility relocation projects, mitigation measure CUL-3 (see Section 2.7) is included in Section 2.7.7 below and will take effect should a resource be identified during cultural resource monitoring.

d) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant with Mitigation. No human remains or signs of cremation were identified during field surveys of the project area and are not expected to be encountered during construction of channel improvements under Alternative B or any other alternative. Therefore, the project will not impact historic or pre-historic human remains. Nonetheless, in the event that unknown and unexpected human remains are discovered during project construction, the provisions of California Health and Safety Code Section 7050.5 - 7055 and mitigation set forth in Section 2.7.7 would ensure that impacts would be less than significant. Therefore, mitigation measure CUL-2 is included in Section 2.7.7 below, should human remains be identified during cultural resource monitoring.

[16] "Paleontological Resources Technical Report – City of La Quinta General Plan", prepared by CRM TECH. August 2010.

Tribal Resources

a) Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

- ***Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or***
- ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.***

Less than Significant with Mitigation. Per AB 52, CVWD conducted government-to-government consultation regarding tribal cultural resources with Native American Tribes having previously requested to formally consult on CVWD projects. Please refer to Section 2.7 Cultural Resources for a summary of the consultation.

CVWD met with the Agua Caliente Band of Cahuilla Indians to discuss the project and received correspondence from the Augustine Band of Cahuilla Indians. CVWD's environmental services staff will continue to work with the tribal governments and have provided a copy of the cultural resources report, where requested. The project historical resource report (Appendix G) concluded that there are no listed or eligible Tribal or other cultural resource for listing under the California Register of Historical Resources in the planning area.

While impacts to Tribal cultural resources are not expected to occur, Mitigation Measure CUL-1 set forth in Section 2.7.7 for the Proposed Project will apply to Alternative B and will ensure that potential impacts to tribal cultural resources will be less than significant.

Utility Projects

Impacts associated with the relocation of the CVWD irrigation lateral, SCG gas pipeline, and IID power poles were considered in the overall Project impact discussion, above. While impacts to Tribal cultural resources are not expected to occur, Mitigation Measure CUL-1 and others set forth in Section 2.7 will ensure that potential impacts to tribal cultural resources will be less than significant.

3.4.5.1.2 Alternative B Mitigation Measures

Please see Section 2.7.7, Mitigation Measures for further reference. There will be no need for any change or addition of mitigation measures under this alternative.

3.4.5.1.3 Alternative B Significance After Mitigation

The CVSC improvement project, including Alternative B, will not have a significant adverse effect on sensitive paleontological resources. Impacts to cultural and historic resources associated with construction of the project would be less than significant level by adherence to the mitigation measures set forth in Section 2.7.7. Channel operation and maintenance will not result in any further ground disturbance or alteration of any lands or buildings, which might be considered to be of historic or archaeological significance. Neither will Alternative B isolate or alter the character of sensitive resources, nor will it introduce visual, audible or atmospheric elements that could conflict with or alter the setting of identified sensitive cultural resources. Therefore, with the application of the mitigation measures set forth in Section 2.7.7, the operation and maintenance of the subject reach of the channel will have no significant adverse impacts on tribal, historical or archaeological resources.

3.4.5.1.4 Alternative B Cumulative Impacts

Similar to the Proposed Project, Alternative B will not result in significant cumulative impacts to cultural or tribal resources. Cultural resources surveys and, where necessary, avoidance, minimization and mitigation, serve to limit cumulative impacts to cultural resources in the planning area. No historical resources have been identified as listed or eligible for listing under the California Register of Historical Resources and the National Register of Historic Places. No new unmitigated impacts to historic or archaeological resources will result from the construction or operation of the subject channel that are cumulatively considerable.

The past excavation of fill for the channel and levees, the periodic grading and other disturbance in the channel during maintenance operations, and active agriculture and other activities on adjoining lands have further reduced the likelihood that the channel improvement project will significantly impact any sensitive resources. However, under this alternative and the Proposed Project, excavations in the channel will be somewhat deeper than shown on the existing channel's as-built plans. This additional excavation under Alternative B results in a limited increased potential to encounter sensitive cultural resources at depth.

The potential impacts of Alternative B on important paleontological resources has been assessed and none of the build alternatives will significantly impact paleontological resources. In addition, avoidance, minimization and mitigation measures have been set forth requiring that in the unlikely event paleontological resources are encountered during project construction, impacts to these resources will be mitigated to levels that are less than significant. Therefore, Alternative B's incremental impacts to these resources, if any, will not be cumulatively considerable.

3.4.5.2 Alternative C: "Slope Lining and Channel Widening"

3.4.5.2.1 Alternative C Impacts

Cultural Resources

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

No Impact. As discussed in Section 2.7.5, no "historic properties" or "historical resources" are present within the project APE, and thus the undertaking will have No Effect/No Impact on any "historic properties"/ "historical resources", as defined in § 15064.5 of the CEQA Guidelines.

Utility Projects

No "historic properties", "historical resources" or "archaeological resource" are present within the project APE or surrounding lands, which includes the IID project sites and most of the CVWD irrigation lateral. Also, the western portions of the SCG gas line relocation lies outside the APE but in areas within disturbed and graded portions of the Highway 111 right of way. While resources are not expected to be encountered during excavations associated with the subject utility projects, mitigation measure CUL-1 (see Section 2.7) will further ensure that the Project-related utility projects will have No Effect/No Impact on any "historic property", "historical resource" or "archaeological resource", as defined in § 15064.5 of the CEQA Guidelines.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

No Impact. Alternative C will have the same impacts as the Proposed Project. No "historic properties", "historical resources" or "archaeological resource" are present within the project APE, and thus the undertaking will have No Effect/No Impact on any "historic property", "historical resource" or "archaeological resource", as defined in § 15064.5 of the CEQA Guidelines.

Utility Projects
No "historic properties", "historical resources" or "archaeological resource" are present within the project APE or surrounding lands, which includes the IID project sites and most of the CVWD irrigation lateral. Also, the western portions of the SCG gas line relocation lies outside the APE but in areas within disturbed and graded portions of the Highway 111 right of way. While resources are not expected to be encountered during excavations associated with the subject utility projects, mitigation measure CUL-1 (see Section 2.7) will further ensure that the Project-related utility projects will have No Effect/No Impact on any "archaeological resource", as defined in § 15064.5 of the CEQA Guidelines.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant with Mitigation. The majority of Alternative C would be constructed upon previously disturbed and excavated lands comprised of alluvial fan and aeolian (windblown) deposits, including those from the adjoining channel to construct levees and service roads. The project planning area is well removed from intact bedrock or sedimentary rock that most typically harbors paleontological resources. Similar to the Proposed Project, Alternative C would somewhat deepen the existing channel and substantially widen the channel within lands that have been previously disturbed by agriculture and development. Project area soils are from the Holocene epoch, of relatively recent age, and are therefore not expected to contain paleontological resources. Therefore, the planning area has a low, less than significant potential to contain paleontological resources or for paleontological resources to be impacted.

In the event paleontological resources are encountered during project construction mitigation measure CUL-3 is included in Section 2.7.7, should a resource be identified during cultural resource monitoring.

Utility Projects
As previously discussed, the planning area has a low, less than significant potential to contain sensitive paleontological resources or for such resources to be impacted. However, in the event sensitive paleontological resources are encountered during any of the utility relocation projects, mitigation measure CUL-3 is included in Section 2.7.7 and will take effect should a resource be identified during cultural resource monitoring.

d) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant with Mitigation. No human remains or signs of cremation were identified during field surveys of the project area and are not expected to be encountered during construction of channel improvements. Therefore, the project will not impact historic or pre-historic human remains. Nonetheless, in the event that unknown and unexpected human remains are discovered during Alternative C construction, the provisions of California Health and Safety Code Section 7050.5 - 7055 and mitigation set forth in Section 2.7.7 would ensure that impacts would be less than significant. Therefore, mitigation measure CUL-2 is included in Section 2.7.7 below, should human remains be identified during cultural resource monitoring.

Tribal Resources

a) Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

- ***Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or***

- ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.***

Less than Significant with Mitigation. Per AB 52, CVWD met with the Agua Caliente Band of Cahuilla Indians to discuss the project and received a correspondence from the Augustine Band of Cahuilla Indians. CVWD's environmental services staff will continue to work with the tribal governments and have provided a copy of the cultural resources report, where requested. The project historical resource report (Appendix G) also concluded that there are no listed or eligible Tribal or other cultural resource for listing under the California Register of Historical Resources.

While impacts to Tribal cultural resources are not expected to occur, Mitigation Measure CUL-1 and others set forth in Section 2.7.7 for the Proposed Project will apply to Alternative C and will ensure that potential impacts to tribal cultural resources will be less than significant.

Utility Projects
Impacts associated with the relocation of the CVWD irrigation lateral, SCG gas pipeline, and IID power poles were considered in the overall Project impact discussion, above. While impacts to Tribal cultural resources are not expected to occur, Mitigation Measure CUL-1 and others set forth in Section 2.7 will ensure that potential impacts to tribal cultural resources will be less than significant.

3.4.5.2.2 Alternative C Mitigation Measures

Please see Section 2.7.7, Mitigation Measures for further reference. There will be no need for any change or addition of mitigation measures under this alternative.

3.4.5.2.3 Alternative C Significance After Mitigation

The CVSC improvement project, including Alternative C, will not have a significant adverse effect on sensitive paleontological resources and no mitigation is required. Impacts to cultural and historic resources associated with construction of the project would be less than significant level by adherence to the mitigation measures set forth in Section 2.7.7. Channel operation and maintenance will not result in any further ground disturbance or alteration of any lands or buildings, which might be considered to be of historic or archaeological significance. Neither will Alternative C isolate or alter the character of sensitive resources, nor will it introduce visual, audible or atmospheric elements that could conflict with or alter the setting of identified sensitive cultural resources. Therefore, with the application of the mitigation measures set forth in Section 2.7.7, the operation and maintenance of the subject reach of the channel will have no significant adverse impacts on tribal, historical or archaeological resources.

3.4.5.2.4 Alternative C Cumulative Impacts

Similar to the Proposed Project, Alternative C will not result in significant cumulative impacts to cultural or tribal resources. Cultural resources surveys and, where necessary, avoidance, minimization and mitigation, serve to limit cumulative impacts to cultural resources in the planning area. No historical resources have been identified as listed or eligible for listing under the California Register of Historical Resources and the National Register of Historic Places. No new unmitigated impacts to historic or archaeological resources will result from the construction or operation of the subject channel that are cumulatively considerable.

The past excavation of fill for the channel and levees, the periodic grading and other disturbance in the channel during maintenance operations, and active agriculture and other activities on adjoining lands have further reduced the likelihood that the channel improvement project will significantly impact any sensitive resources. As noted, under this and other alternatives, excavations in the channel will be somewhat deeper than shown on the existing channel's as-built plans. This additional excavation under Alternative C results in a limited increased potential to encounter sensitive cultural resources at depth.

The potential impacts of Alternative C on important paleontological resources has been assessed and none of the build alternatives will significantly impact paleontological resources. In addition, avoidance, minimization and mitigation measures have been set forth requiring that in the unlikely event paleontological resources are encountered during project construction, impacts to these resources will be mitigated to levels that are less than significant. Therefore, Alternative C's incremental impacts to these resources, if any, will not be cumulatively considerable.

3.4.5.3 Alternative D: "No Project" Alternative

3.4.5.3.1 Alternative D Impacts

Cultural Resources

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

No Impact. Under Alternative D, existing conditions would not be altered and there would be no change in the significance of a historical resource. There will be no impact.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

No Impact. Under Alternative D, existing conditions would not be altered and there would be no change in the significance of an archeological resource. There will be no impact.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. Under Alternative D, existing conditions would not be altered and there would be no change in the significance of a paleontological resource. There will be no impact.

d) Disturb any human remains, including those interred outside of dedicated cemeteries?

No Impact. Under Alternative D, existing conditions would not be altered and there would be no ground disturbance that could potentially disturb any human remains. There will be no impact.

Tribal Resources

a) Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

- ***Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or***

- ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.***

No Impact. Under Alternative D, existing conditions would not be altered and there would be no change in the significance of a tribal resource. There will be no impact.

3.4.5.3.2 Alternative D Mitigation Measures

There are no cultural or tribal impacts associated with Alternative D and mitigation is not required.

3.4.5.3.3 Alternative D Significance After Mitigation

There are no cultural or tribal impacts associated with Alternative D and mitigation is not required.

3.4.5.3.4 Alternative D Cumulative Impacts

The "No Project" Alternative would preclude CVSC Improvement-related land disturbances or other activities that could uncover or damage sensitive cultural and/or tribal resources. Therefore, the Alternative D scenario would not contribute to cumulative impacts to these resources.

3.4.5.4 Environmentally Superior Alternative

None of the three build alternatives would result in significant impacts to cultural or tribal resources after mitigation. However, Alternative A (Proposed Project) and Alternative B are superior to Alternative C because Alternative C would require additional channel widening that would increase chances of disturbing previously undiscovered cultural or tribal resources.

3.4.6 Geology and Soils

This section of the EIR analyzes the potential impacts to the alternatives to the Proposed Project based on regional and/or local geology and soils. The CVSC Improvement Project is located within a central portion of the Coachella Valley, which is a rift valley associated with the San Andreas Fault System in Southern California. In the region, there are numerous earthquake-producing faults, including the San Andreas Fault Zone (that includes the San Gorgonio Pass Thrust Fault and sub-parallel fault strands of Mission Creek, San Gorgonio, and Banning Faults).[17]

Also important to regional seismic conditions are the San Jacinto Fault Zone (e.g. Buck Ridge Fault and Clark Fault)[18], Pinto Mountain Fault, faults in the Eastern California Shear Zone (including the Burnt Mountain, Eureka Peak, and Pisgah-Bullion Mountain-Mesquite Lake faults)[19], and the Elsinore Fault[20].

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17 Sieh, K., & Williams, P. L. (1990). Behavior of the southernmost San Andreas fault during the past 300 years. Sharp, R. V. (1967). San Jacinto fault zone in the Peninsular Ranges of southern California. *Geological Society of America Bulletin*, *78*(6), 705-730.

4 Ibid.

19 Frankel, K. L., Glazner, A. F., Kirby, E., Monastero, F. C., Strane, M. D., Oskin, M. E., ... & Coleman, D. S. (2008). Active tectonics of the eastern California shear zone. *Field Guides*, *11*, 43-81.

20 D. W., & Richards, G. (1988). such as the Elsinore-Whittier fault system and the Newport-Inglewood fault zone, which strike subparallel to the San Andreas fault. The strike-slip faults are typically well.

The nearest fault to the project site is the San Andreas Fault, which is located approximately 2.65 miles northeast of the project planning area, and is capable of generating magnitude 7.4+ earthquakes.

Regional soils range from rocky outcrops within the mountains bordering the valley to coarse gravels of mountain canyons and recently laid fine- and medium-grained alluvial (stream deposited) and aeolian (wind deposited) sediments on the central valley floor. The valley consists of a diverse range of rocks and sediments, which were formed or deposited over millions of years and provide important details about the geologic history of the region.

Please see Section 2.8.4 and Section 2.8.5 for a detailed description of existing geotechnical conditions.

3.4.6.1 Alternative B: "Fully-Lined Channel"

3.4.6.1.1 Alternative B Impacts

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area of based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

Less than Significant. Alternative B is not located within an Alquist-Priolo Earthquake Fault Zone, and there are no known active or potentially active faults in the project area or within the immediate vicinity. The nearest major active fault is the San Andreas Fault and its splays (Mission Creek fault and Coachella segment), located approximately 2.05 northeast of the project site. Based on its location with respect to active faults and being outside any Alquist-Priolo Earthquake Fault Zone, the potential for fault-related ground rupture is less than significant.

Utility Projects
Based on its location with respect to active faults and being outside any Alquist-Priolo Earthquake Fault Zone, the potential for fault-related ground rupture at or near the subject utility relocation sites is less than significant.

ii) Strong seismic ground shaking?

Less than Significant with Mitigation. The Alternative B project will be exposed to the same seismic ground shaking risks as the Proposed Project. The geotechnical report for the project provides specific design recommendations to address ground shaking and potential hazards. Implementation of these recommendations (presented as mitigation measures in Section 2.8.7) would minimize the potential for damage to the channel or related facilities in the event of a strong seismic event, and this impact would be less than significant.

Utility Projects
All utility relocation projects will be subject to California Building Code. Based upon the adherence of project structural design to applicable seismic and other codes, the effects of seismically-induced groundshaking can be reduced to a level that it will have a less than significant impact on the channel and subject utility facilities.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant with Mitigation: Alternative B will be exposed to the same seismic-related ground failure, including liquefaction, as the Proposed Project. Compared to the Proposed Project, Alternative B will result in a greater area of full-channel lining resulting in greater attention to seismic-related impacts in those areas. However, Alternative B will be able to achieve the required factor of safety with the remedial grading, compaction, and drainage, as discussed in the project geotechnical report. Mitigation measures in Section 2.8.7 will ensure impacts are reduced to less than significant levels.

Utility Projects
According to the project's Geotechnical Investigation Report, seismically-induced liquefaction, settlement and collapse may occur in association with ground shaking and high groundwater along the entire length of the project area, including the areas subject to utility relocations. Liquefaction of the underlying soils may induce movement in pipelines and power pole foundations that could potentially impact the CVWD irrigation lateral, SCG gas pipeline, and IID power poles. Excavations associated with utility directional boring, trenching and excavation can result in wall collapse and associated hazards. With proper remedial mitigation set forth in the project Genterra Geotechnical Investigation, this hazard can be minimized. However, the mitigation measures in Section 2.8.7 will ensure impacts are reduced to less than significant levels.

iv) Landslides?

Less than Significant with Mitigation. Alternative B is susceptible to the same landslide hazards as the Proposed Project. There are no known landslides or landslide hazard areas at the site or vicinity, nor is the site in the path of any known landslides or hazard area. However, design mitigation is proposed in the project Geotechnical Investigation to remediate the moderate potential for channel levee and slope instability that could occur on the project site. Therefore, with design mitigation the potential for slope instability can be reduced to a level that is less than significant. Mitigation measures set forth in Section 2.8.7 will ensure impacts are reduced to less than significant levels.

Utility Projects
There are no known landslides or landslide hazard areas at the site or vicinity, nor are the utility relocation areas in the path of any known landslides or hazard area. Therefore, no impact is anticipated.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant with Mitigation. Similar to the Proposed Project, Alternative B will involve some channel widening and deepening to ensure that adequate freeboard is provided. Planned concrete lining will also prevent erosion of the channel banks and those portions of the channel bottom under and in proximity to bridges that will also be lined.

Alternative B may have the potential to result in the short-term loss of topsoil during construction due to runoff and wind erosion. However, this will be minimized by complying with the recommendations provided in the geotechnical investigation report (See Section 2.8.7 Mitigation Measures). At buildout, substantial erosion is not anticipated during channel operation and maintenance. Therefore, impacts are less than significant.

Utility Projects
All utility relocation projects may have a limited potential to result in the short-term loss of topsoil during construction due to excavation and temporary stockpiling, and from storm runoff and wind erosion. However, this potential is limited and will be minimized by complying with the recommendations provided in the geotechnical investigation report (see Section 2.8.7 Mitigation Measures). At buildout, substantial erosion is not anticipated during utility operation and maintenance. Therefore, impacts are less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less than Significant with Mitigation. See response to a.iii) and a.iv) above.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less than Significant with Mitigation. Alternative B will not include any structures that would be inhabited and not create a substantial risk to life or property. Nonetheless, construction plans will incorporate recommendations, performance standards and requirements set forth in the project geotechnical report that will adequately remediate for the limited areas of potentially expansive soils that may occur in the project area. Mitigation measures set forth in Section 2.8.7 will ensure impacts are reduced to insignificant levels.

Utility Projects
All utility relocation plans will incorporate recommendations, performance standards and requirements set forth in the Project geotechnical report that will adequately remediate for the limited areas of potentially expansive soils that may occur in the project area. Mitigation measures set forth in Section 2.8.7 will ensure impacts are reduced to insignificant levels.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. Similar to the Proposed Project, Alternative B is not proposing housing units or businesses and no existing or future septic tanks or other wastewater treatment facilities will be affected by the project. Thus, sewer or wastewater disposal facilities will not be required. Therefore, no impacts are anticipated.

3.4.6.1.2 Alternative B Mitigation Measures

Please see Section 2.8.7, Mitigation Measures for further reference. There will be no need for any change or addition of mitigation measures under this alternative.

3.4.6.1.3 Alternative B Significance After Mitigation

Alternative B will be subject to the same mitigation measures as the Proposed Project. With the application of the avoidance/minimization/mitigation measures set forth in Section 2.8.7 and in the Genterra Geotechnical Investigation, impacts associated with project geotechnical conditions will be mitigated to a level of less than significant.

3.4.6.1.4 Alternative B Cumulative Impacts

Alternative B will not significantly increase the community impacts associated with prevailing geotechnical conditions in the Coachella Valley, nor will it have a cumulatively considerable effect on geotechnical hazards or risk in the project area.

3.4.6.2 Alternative C: "Slope Lining and Channel Widening"

3.4.6.2.1 Alternative C Impacts

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area of based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

Less than Significant. Alternative C is not located within an Alquist-Priolo Earthquake Fault Zone, and there are no known active or potentially active faults in the project area or within the immediate vicinity. The nearest major active fault is the San Andreas Fault and its splays (Mission Creek fault or Coachella segment), located approximately 2.65 miles northeast of the project site. Based on its location with respect to active faults and being outside any Alquist-Priolo Earthquake Fault Zone, the potential for fault-related ground rupture is less than significant.

Utility Projects
Based on their location with respect to active faults and being outside any Alquist-Priolo Earthquake Fault Zone, the potential for fault-related ground rupture to impact the Project-related utility relocation projects is less than significant.

ii) Strong seismic ground shaking?

Less than Significant with Mitigation. Alternative C will be exposed to the same seismic ground shaking risks as the Proposed Project. The geotechnical report for the project provides specific design recommendations to address ground shaking and potential hazards. Implementation of these recommendations (presented as mitigation measures in Section 2.8.7) would minimize the potential for damage to the channel or related facilities in the event of a strong seismic event, and this impact would be less than significant.

Utility Projects
All utility relocation projects will be subject to California Building Code. Based upon the adherence of project structural design to applicable seismic and other codes, the effects of seismically-induced groundshaking can be reduced to a level that it will have a less than significant impact on the channel and subject utility facilities.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant with Mitigation: Alternative C will be exposed to the same seismic-related ground failure, including liquefaction, as the Proposed Project. Except at locations under and in proximity to project bridges, channel lining will be limited to side slopes, the integrity of which could be compromised during a rapid groundwater drawdown condition after major flood events such as the 100-Year flood or the Standard Project flood. In order to achieve the required factor of safety, some remedial grading, compaction, and drainage, as discussed in the project geotechnical report, would be required. Mitigation measures in Section 2.8.7 below will ensure impacts are reduced to less than significant levels.

Utility Projects
According to the project's Geotechnical Investigation Report, seismically-induced liquefaction, settlement and collapse may occur in association with ground shaking and high groundwater along the entire length of the project area, including the areas subject to utility relocations. Liquefaction of the underlying soils may induce movement in pipelines and power pole foundations that could potentially impact the CVWD irrigation lateral, SCG gas pipeline, and IID power poles. Excavations associated with utility directional drilling, trenching and excavation can result in wall collapse and associated hazards. With proper remedial mitigation set forth in the project Genterra Geotechnical Investigation, this hazard can be minimized. However, the mitigation measures in Section 2.8.7 will ensure impacts are reduced to less than significant levels.

iv) Landslides?

Less than Significant with Mitigation. Alternative C is susceptible to the same landslide hazards as the Proposed Project. There are no known landslides or landslide hazard areas at the site or vicinity, nor is the site in the path of any known landslides or hazard area. However, design mitigation is proposed in the project Geotechnical Investigation to remediate the moderate potential for channel levee and slope instability that could occur on the project site. Therefore, with design mitigation the potential for slope instability can be reduced to a level that is less than significant. Mitigation measures set forth in Section 2.8.7 will ensure impacts are reduced to less than significant levels.

Utility Projects
There are no known landslides or landslide hazard areas at the site or vicinity, nor are the utility relocation areas in the path of any known landslides or hazard area. Therefore, no impact is anticipated.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant with Mitigation. Alternative C will involve channel widening and deepening to ensure that adequate freeboard is provided. Planned concrete lining will also prevent erosion of the channel banks and those portions of the channel bottom under and in proximity to bridges that will also be lined. The widened portion of the channel will be fully lined with concrete, thus eliminating the threat of soil erosion and loss of topsoil in that area.

Alternative C may have the potential to result in the short-term loss of topsoil during construction due to runoff and wind erosion. However, this will be minimized by complying with the recommendations provided in the geotechnical investigation report (See Section 2.8.7 Mitigation Measures). At buildout, substantial erosion is not anticipated during channel operation and maintenance. Therefore, impacts are less than significant.

Utility Projects
All utility relocation projects may have a limited potential to result in the short-term loss of topsoil during construction due to excavation and temporary stockpiling, and from storm runoff and wind erosion. However, this potential is limited and will be minimized by complying with the recommendations provided in the geotechnical investigation report (see Section 2.8.7 Mitigation Measures). At buildout, substantial erosion is not anticipated during utility operation and maintenance. Therefore, impacts are less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less than Significant with Mitigation. See response to a.iii) and a.iv) above.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less than Significant with Mitigation. Alternative C will not include any structures that would be inhabited and not create a substantial risk to life or property. Nonetheless, construction plans will incorporate recommendations, performance standards and requirements set forth in the project geotechnical report that will adequately remediate for the limited areas of potentially expansive soils that may occur in the project area. Mitigation measures set forth in Section 2.8.7 will ensure impacts are reduced to insignificant levels.

Utility Projects
All utility relocation plans will incorporate recommendations, performance standards and requirements set forth in the Project geotechnical report that will adequately remediate for the limited areas of potentially expansive soils that may occur in the project area. Mitigation measures set forth in Section 2.8.7 will ensure impacts are reduced to insignificant levels.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. Similar to the Proposed Project, Alternative C is not proposing housing units or businesses and no existing or future septic tanks or other wastewater treatment facilities will be affected by the project. Thus, sewer or wastewater disposal facilities will not be required. Therefore, no impacts are anticipated.

3.4.6.2.2 Alternative C Mitigation Measures

Please see Section 2.8.7, Mitigation Measures for further reference. There will be no need for any change or addition of mitigation measures under this alternative.

3.4.6.2.3 Alternative C Significance After Mitigation

Alternative C will be subject to the same mitigation measures as the Proposed Project. With the application of the avoidance/minimization/mitigation measures set forth in Section 2.8.7 and in the Genterra Geotechnical Investigation, impacts associated with project geotechnical conditions will be mitigated to a level of less than significant.

3.4.6.2.4 Alternative C Cumulative Impacts

Alternative C will not significantly increase the community impacts associated with prevailing geotechnical conditions in the Coachella Valley, nor will it have a cumulatively considerable effect on geotechnical hazards or risk in the project area.

3.4.6.3 Alternative D: "No Project" Alternative

3.4.6.3.1 Alternative D Impacts

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area of based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

ii) Strong seismic ground shaking?
iii) Seismic-related ground failure, including liquefaction?
iv) Landslides?

No Impact. Under Alternative D, existing conditions would not be altered and there will be no exposure of people or structures to adverse effects involving rupture of a known earthquake fault, strong seismic shaking, seismic-related ground failure, liquefaction, or landslides. There will be no impact.

b) Result in substantial soil erosion or the loss of topsoil?

No Impact. Under Alternative D, existing conditions would not be altered and there will be no soil erosion of loss of topsoil. There will be no impact.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

No Impact. Under Alternative D, existing conditions would not be altered, structures/improvements would not be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. There will be no impact.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No Impact. Under Alternative D, existing conditions would not be altered and there will be no risk to life or property due to exposure to expansive soils. There will be no impact.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. Alternative D would result in no CVSC improvements and no need for wastewater treatment, on-lot or otherwise. Therefore, there would be no impacts in this regard.

3.4.6.3.2 Alternative D Mitigation Measures

No avoidance, minimization or mitigation measures are required for this alternative.

3.4.6.3.3 Alternative D Significance After Mitigation

There will be no impacts under Alternative D.

3.4.6.3.4 Alternative D Cumulative Impacts

There will be no contribution to cumulative impacts under the Alternative D scenario.

3.4.6.4 Environmentally Superior Alternative

Of the three build alternatives, Alternative A (Proposed Project) and Alternative C are environmentally superior to Alternative B because the full channel lining proposed in Alternative B will be exposed to increased risk of structural damage and risks associated with earthquakes from liquefaction, hydrostatic forces and ground subsidence. From a geotechnical perspective, the Proposed Project is considered the environmentally superior alternative overall because less concrete surface area, including side slope infrastructure will be exposed to geotechnical hazards and damage.

3.4.7 Greenhouse Gas Emissions

The following section analyzes the potential greenhouse gas emission impacts associated with the CVSC Improvement Project alternatives. A variety of local and regional data and information, ranging from research and analysis conducted for the project site, to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential greenhouse gas impacts. An Air Quality and Greenhouse Gas Report was prepared for the Proposed Project and alternatives, and is provided in Appendix B of this EIR

The CVSC project area is located in the Coachella Valley portion of the Salton Sea Air Basin (SAAB or Air Basin). Some air polluting agents are also greenhouse gases such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases (hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride), which are released into the atmosphere through natural processes and human activities. These gases are termed greenhouse gases (GHG) due to their shared characteristic of trapping heat.

Please see Section 2.9.4 and Section 2.9.5 for a detailed description of existing greenhouse gas emission conditions and regulatory requirements.

3.4.7.1 Alternative B: "Fully-Lined Channel"

3.4.7.1.1 Alternative B Impacts

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Less than Significant

Construction Related Greenhouse Gas Emissions
Construction activities will result in short-term GHG emissions associated with operation of construction equipment, employee commute, material hauling, and other ground disturbing activities. There are currently no construction-related GHG emission thresholds for projects of this nature. To determine if construction emissions will result in a cumulative considerable impact, buildout GHG emissions were amortized over a 30-year period and added to annual operational emissions to be compared to applicable GHG thresholds.

GHG emissions from channel construction are temporary and will not substantially affect climate or interfere with a GHG reduction plan. All components of construction, including equipment, fuels, materials, and management practices, will be subject to current regulations of GHGs. The following table summarizes the estimated GHG emissions from construction of the Alternative B.

Table 3-12
Construction GHG Emissions Summary
Alternative B- Fully Lined Channel
(Metric Tons/Year)

	CO_2	CH_4	N_2O	Total CO_2e
Buildout	5,062.17	1.34	0.00	5,095.77
Source: CalEEMod Versions 2016.3.1. See Appendix A for detailed tables. Values shown represent the total unmitigated GHG emission projections for construction of the Proposed Project. $CO2_e$ includes the remaining GHG pollutants, such as hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.				

Operational Greenhouse Gas Emissions

There are five emission source categories that contribute either directly or indirectly to operational GHG emissions, including energy/electricity usage, water usage, solid waste disposal, area emissions (pavement and architectural coating off-gassing), and mobile sources. CVWD routinely maintains the stormwater conveyance channel, including vegetation management/maintenance and other facility maintenance. Alternative B will not require additional operational or maintenance services. Therefore, GHG impacts will be limited to area emissions and the amortized construction emissions.

Alternative B is consistent and compliant with Tier 3 of the SCAQMD recommended GHG thresholds, in that the project is considered an industrial project with an absolute threshold below 10,000 MTCO2e/yr. Due to the project's low annualized GHG emissions as compared to baseline conditions, the channel improvement project will not generate levels of GHGs, directly or indirectly, that would impact the environment.

Table 3-13
Operational GHG Emission Summary
Alternative B- Fully Lined Channel
(Metric Tons/Year)

	CO_2	CH_4	N_2O	CO_2e
Energy/Water/Solid Waste Emissions	0.00	0.00	0.00	0.00
Area Emissions	0.00085	0.00	0.00	0.0008
Buildout plus Amortized Construction Emissions[1]				169.85
Exceeds Thresholds?				No

Source: CalEEMod Version 2016.3.1Values shown represent the total unmitigated GHG emission projections for operation of the Proposed Project.
1. Buildout construction GHG emissions were amortized over 30-years then added to buildout operational GHG emissions. 5095.77/30 =169.85

Therefore, Alternative B will not generate greenhouse gas emissions, either directly or indirectly, that may have a potentially significant impact on the environment and no mitigation is required.

All components of construction, including equipment, fuels, materials, and management practices, would be subject to current and future CVWD and SCAQMD rules and regulations related to greenhouse gases. Applicable SCAQMD rules include, but are not limited to, source specific standards that reduce the greenhouse gas content in engines and limit equipment idling durations. In addition, project-related GHG emissions will not exceed established GHG thresholds for construction because there are no such thresholds established. Therefore, this GHG impact would be less than significant.

Operation and maintenance of the subject channel reach would not exceed SCAQMD thresholds for operational emissions. Most of the project's GHG emissions will occur within the few months of construction, and there will be no new GHG emissions associated with channel operations and maintenance because that portion of the channel is currently being maintained by CVWD.

Utility Projects

Greenhouse gas emissions associated with all utility relocation projects have been accounted for in the above, overall Project impact analysis. As shown on Table 3-13, GHG emissions associated with Project operation is negligible, with amortized construction-related emissions being the bulk of annual post-construction emissions. Therefore, the utility projects will not generate greenhouse gas emissions, either directly or indirectly, that may have a potentially significant impact on the environment and no mitigation is required.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Less than Significant. Alternative B will not conflict with the goals of executive order S-3-05 or the 40% GHG reduction goal recently codified through Senate Bill 32 (2016) because (1) it is not considered a "large emitter" of GHGs (25,000 MT CO_2e/year) requiring cap-and-trade regulation per CARB's regulatory measure to help achieve statewide GHG reduction goals.

Alternative B is also consistent with regional GHG reduction goals. The project would not conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of GHGs. This impact would be less than significant.

Utility Projects
Greenhouse gas emissions associated with all Project-related utility relocation projects have been accounted for in the above overall Project impact analysis. GHG emissions associated with Project and utility construction and operations are negligible, with amortized construction-related emissions being the bulk of annual post-construction emissions. Alternative B will not conflict with the goals of executive order S-3-05 or the 40% GHG reduction goal recently codified through Senate Bill 32 (2016) The project is also consistent with regional GHG reduction goals, as they pertain to Alternative B, by adhering to the required state Low Carbon Fuel Standard for construction equipment and heavy-duty vehicle efficiency standards. The utility projects would not conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of GHGs. These impacts would be less than significant.

3.4.7.1.2 Alternative B Mitigation Measures

There are no potentially significant impacts. Mitigation measures are not required.

3.4.7.1.3 Alternative B Significance After Mitigation

There are no potentially significant GHG impacts and a mitigation program is not required.

3.4.7.1.4 Alternative B Cumulative Impacts

Cumulative air quality impacts associated with Alternative B would be similar to the Proposed Project due to the dispersing nature of pollutant emissions and aggregate impacts from surrounding jurisdictions and air management districts. As such, cumulative air quality impacts related to construction and operation of Alternative B are considered less than significant. Development and operation of Alternative B will not exceed air quality maximum daily thresholds (mitigated) for CO, NOx and PM_{10}, which are cumulative thresholds by their nature. Therefore, impacts related to ozone and PM_{10} emissions will be less than significant. Alternative B will not result in a cumulatively considerable contribution to GHG emissions.

3.4.7.2 Alternative C: "Slope Lining and Channel Widening"

3.4.7.2.1 Alternative C Impacts

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Less than Significant.

Construction Related Greenhouse Gas Emissions

Construction activities will result in short-term GHG emissions associated with operation of construction equipment, employee commute, material hauling, and other ground disturbing activities. There are currently no construction-related GHG emission thresholds for projects of this nature. To determine if construction emissions will result in a cumulative considerable impact, buildout GHG emissions were amortized over a 30-year period and added to annual operational emissions to be compared to applicable GHG thresholds.

GHG emissions from channel construction are temporary and will not substantially affect climate or interfere with a GHG reduction plan. All components of construction, including equipment, fuels, materials, and management practices, will be subject to current regulations of GHGs. The following table summarizes the estimated GHG emissions from construction of the Alternative C.

Table 3-14
Construction GHG Emissions Summary
Alternative C- Slope Lining and Channel Widening (Metric Tons/Year)

	CO_2	CH_4	N_2O	Total CO_2e
Buildout	4,382.48	1.10	0.00	4,409.77
Source: CalEEMod Versions 2016.3.1. See Appendix B for detailed tables. Values shown represent the total unmitigated GHG emission projections for construction of the Proposed Project. $CO2_e$ includes the remaining GHG pollutants, such as hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.				

Operational Greenhouse Gas Emissions

There are five emission source categories that contribute either directly or indirectly to operational GHG emissions, including energy/electricity usage, water usage, solid waste disposal, area emissions (pavement and architectural coating off-gassing), and mobile sources. CVWD currently provides maintenance services to the proposed section of the channel, including vegetation management/maintenance and other facility services. Alternative C will require additional operational/maintenance services for the widened portion of the channel, however these maintenance impacts are somewhat offset by the reduced maintenance on the main/pilot channel and will therefore not be significant. Therefore, impacts will be limited to area emissions and the amortized construction emissions.

Alternative C is consistent and compliant with Tier 3 of the SCAQMD recommended GHG thresholds, in that the project is considered an industrial project with an absolute threshold below 10,000 MTCO2e/yr. Due to the project's low annualized GHG emissions as compared to baseline conditions, the channel improvement project will not generate levels of GHGs, directly or indirectly, that would impact the environment.

Table 3-15
Operational GHG Emission Summary
Alternative C- Slope Lining and Channel Widening (Metric Tons/Year)

	CO_2	CH_4	N_2O	CO_2e
Energy/Water/Solid Waste Emissions	0.00	0.00	0.00	0.00
Area Emissions	0.00045	0.00	0.00	0.0004
Buildout plus Amortized Construction Emissions[1]				146.99
Exceeds Thresholds?				No
Source: CalEEMod Version 2016.3.1. Values shown represent the total unmitigated GHG emission projections for operation of the Proposed Project. 1. Buildout construction GHG emissions were amortized over 30-years then added to buildout operational GHG emissions. 4,409.77/30 =146.99				

Therefore, Alternative C will not generate greenhouse gas emissions, either directly or indirectly, that may have a potentially significant impact on the environment and no mitigation is required.

All components of construction, including equipment, fuels, materials, and management practices, would be subject to current and future CVWD and SCAQMD rules and regulations related to greenhouse gases. Applicable SCAQMD rules include, but are not limited to, source specific standards that reduce the greenhouse gas content in engines and limit equipment idling durations. In addition, project-related GHG emissions will not exceed established GHG thresholds for construction because there are no such thresholds established. Therefore, this GHG impact would be less than significant.

Operation and maintenance of the subject channel reach would not exceed SCAQMD thresholds for operational emissions. Most of the project's GHG emissions will occur within the few months of construction, and there will be no new GHG emissions associated with channel operations and maintenance because that portion of the channel is currently being maintained by CVWD.

Utility Projects
Greenhouse gas emissions associated with all utility relocation projects have been accounted for in the above, overall Project impact analysis. As shown on Table 3-15, GHG emissions associated with Project operation is negligible, with amortized construction-related emissions being the bulk of annual post-construction emissions. Therefore, the utility projects will not generate greenhouse gas emissions, either directly or indirectly, that may have a potentially significant impact on the environment and no mitigation is required.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Less than Significant. Alternative C will not conflict with the goals of executive order S-3-05 or the 40% GHG reduction goal recently codified through Senate Bill 32 (2016) because (1) it is not considered a "large emitter" of GHGs (25,000 MT CO_2e/year) requiring cap-and-trade regulation per CARB's regulatory measure to help achieve statewide GHG reduction goals.

Alternative C is also consistent with regional GHG reduction goals. The project would not conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of GHGs. This impact would be less than significant.

Utility Projects
Greenhouse gas emissions associated with all utility relocation projects have been accounted for in the above overall Project impact analysis. GHG emissions associated with Project and utility operations are negligible, with amortized construction-related emissions being the bulk of annual post-construction emissions. Alternative C will not conflict with the goals of executive order S-3-05 or the 40% GHG reduction goal recently codified through Senate Bill 32 (2016) The project is also consistent with regional GHG reduction goals, as they pertain to Alternative C, by adhering to the required state Low Carbon Fuel Standard for construction equipment and heavy-duty vehicle efficiency standards. The utility projects would not conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of GHGs. These impacts would be less than significant.

3.4.7.2.2 Alternative C Mitigation Measures

There are no potentially significant impacts. Mitigation measures are not required.

3.4.7.2.3 Alternative C Significance After Mitigation

There are no potentially significant GHG impacts and a mitigation program is not required.

3.4.7.2.4 Alternative C Cumulative Impacts

Cumulative air quality impacts associated with Alternative C would be similar to the Proposed Project due to the dispersing nature of pollutant emissions and aggregate impacts from surrounding jurisdictions and air management districts. However, construction emissions associated Alternative C, specifically NOx emissions, will exceed SCAQMD thresholds and create a significant and unavoidable impact. Therefore, Alternative C will result in a cumulatively considerable contribution to GHG emissions. Specifically, Alternative C will contribute to impacts associated with the Coachella Valley's nonattainment of ozone, for which NOx is a precursor. Impacts will be significant and unavoidable.

3.4.7.3 Alternative D: "No Project" Alternative

3.4.7.3.1 Alternative D Impacts

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

No Impact. Alternative D will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment because CVSC improvements would not occur, and greenhouse gas conditions would be unaffected. There will be no impact.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

No Impact. Alternative D will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases because CVSC improvements would not occur, and greenhouse gas conditions would be unaffected. There will be no impact.

3.4.7.3.2 Alternative D Mitigation Measures

There will be no impacts, therefore mitigation measures are not required.

3.4.7.3.3 Alternative D Significance After Mitigation

There will be no impacts and no mitigation.

3.4.7.3.4 Alternative D Cumulative Impacts

Alternative D will not generate greenhouse gas emissions, either directly or indirectly, that could have a significant impact on the environment because CVSC improvements would not occur, and greenhouse gas conditions would be unaffected. There will be no cumulative impacts to greenhouse gas conditions.

3.4.7.4 Environmentally Superior Alternative

Alternative A (Proposed Project) is considered the environmentally superior alternative because it will emit fewer GHG's during both construction and operation when compared to Alternatives B and C.

3.4.8 Hazards and Hazardous Materials

The following section analyzes the potential hazards and hazardous material impacts associated with the CVSC Improvement Project alternatives. The study area for hazardous materials is based on an assessment of local hydrogeologic conditions and proximity to nearby wells. Possible contaminating activities (e.g., leaking underground storage tanks) were identified within 0.25 miles of the project area based on their location up-gradient of the project site. The study area for the evaluation of airport and airstrip impacts is within two miles of the project site. The study area for the evaluation of wildfires and emergency access includes the Project area and nearby lands.

The evaluation of impacts associated with hazards and hazardous materials includes two components: (1) the potential for hazards or hazardous materials to be generated, used, transported or stored as part of the Proposed Project during construction, operation and maintenance; and (2) the potential impacts that existing hazards or hazardous materials exacerbated by the project could have on the subject channel.

With the exception of two oil pipelines and two natural gas pipelines, evidence for aboveground or underground storage tanks, clarifiers, sumps, or other potentially hazardous material-containing structures were not encountered on any portion of the site during the Phase I Site Assessment or in documents conducted for this evaluation. At least one oil pipeline (Kinder Morgan) crosses under the channel at its intersection with Highway 111. Releases from pipelines in this area have not been reported nor were any observed at the time of this assessment.

The evaluation of the potential to encounter hazards or hazardous materials in soil and groundwater in the project planning area is based on federal, State, and local regulatory database reviews which identified permitted hazardous materials uses, environmental cases, and spill sites within 1/8 miles of the project site. The project is also identified as occurring within Land Use Compatibility Zones D and E of the Jacqueline Cochran Airport Master Plan.[21] Compatible land uses include low to medium density residential, while there are no land use compatibility conflicts for lands that are allocated in Zone E.[22]

The subject reach of the CVSC is subject to ongoing maintenance, including vegetation mowing and emergency repairs following a flood event to preserve stormwater flow capacity. Channel soils appeared to be comprised primarily of sands and silts, with a crust of salt occurring across portions of the channel bottom. The City of Coachella's sanitation treatment plant discharges treated/reclaimed municipal wastewater into the channel in the site's northern portion. Indications of odorous or stained water and/or soil were not encountered at the outlet area. Note that this water is discharged under permit, indicating that it is frequently observed and tested by the Regional Water Quality Control Board.

Please see Section 2.10.4 and Section 2.10.5 for a detailed description of existing conditions.

3.4.8.1 Alternative B: "Fully-Lined Channel"

3.4.8.1.1 Alternative B Impacts

a) Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Less than Significant: Alternative B will result in the same level of impact as the Proposed Project with respect to hazards to the public or environment through the routine transport, use, or disposal of hazardous materials. Given the limited and managed use of potentially toxic or hazardous materials in the construction and maintenance of the channel, and the programmatic regulation and oversight of their use, transport and disposal, Alternative B will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

[21] Figure 5 Eastern Coachella Valley Area Plan – Jacqueline Cochran Airport
[22] Op. sit.

Utility Projects
Given the limited and managed use of potentially toxic or hazardous materials in the construction and maintenance of the proposed utility relocation projects, and the programmatic regulation and oversight of their use, transport and disposal, the utility relocation portion of the project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Adherence to the mitigation measures set forth in Section 2.10.7 will further ensure that impacts are less than significant.

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

Less than Significant. Alternative B will involve the same potential level of impact as the Proposed Project. During the construction phase, the contractor will be required to identify and properly prepare staging areas for storing materials. The use and handling of hazardous materials during construction activities would be equivalent to the Proposed Project, and would be conducted in accordance with applicable federal, State, and local laws, including California Occupational Health and Safety Administration (CalOSHA) requirements. Alternative B would not result in a significant risk of explosion or accidental release of hazardous substances.

Utility Projects
As discussed in Section 2.10.6.b, it is not anticipated that the proposed utility relocations would result in a significant hazard to the public from foreseeable upset. The contractor will be required to identify and properly prepare staging areas for storing materials. The use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, State, and local laws, including California Occupational Health and Safety Administration (CalOSHA) requirements. SCG will be required to comply with all applicable state and federal regulations for the safe replacement and relocation of active gas lines. With proper protocols and management, the utility relocation portion of the project would not result in a significant risk of explosion or accidental release of hazardous substances. Adherence to the mitigation measures set forth in Section 2.10.7 will further ensure that impacts are less than significant.

c) Emits hazardous emissions or handles hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

Less than Significant. The nearest school to the project site is approximately 0.3 miles to the west of the project planning area. The construction, operation and maintenance of the subject channel segment will have no impact on schools from a hazardous materials perspective. Similar to the Proposed Project, Alternative B construction will involve the use of limited amounts of solvents, lubricants and ad fuels the use, storage and disposal of which will not come within 0.25 miles of this school. Regulations controlling the use, transport and disposal of construction-related materials, included standard requirements imposed by the Riverside County Department of Environmental Health, the Highway Patrol and local police and fire departments such as container types, securing of materials, etc., would ensure that impacts would be less than significant.

Utility Projects
The construction, operation and maintenance of the relocated utilities will have no impact on schools from a hazardous materials perspective. Regulations controlling the use, transport and disposal of construction-related materials, included standard requirements imposed by the Riverside County Department of Environmental Health, the Highway Patrol and local police and fire departments such as container types, securing of materials, etc., would ensure that impacts would remain less than significant. Mitigation measures set forth in Section 2.10.7 will further ensure that impacts to school and other sensitive receptors are less than significant.

d) Would be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to public to the public or the environment.

No Impact. According to the findings in the project-specific ISA, no location within the project boundary, or the boundary of any alternative is included on any lists of hazardous materials sites compiled pursuant to Government Code Section 65962.5. For this reason, this criterion is not applicable and no impact will occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.

No Impact. Similar to the Proposed Project, Alternative B will not result in habitable structures. The Jacqueline Cochran Regional Airport is located approximately 1.2 miles west of the CVSC project planning area, and its land use management plan encompasses the entire project planning area. The proposed channel improvement project and utility facility relocations will have no impact on airport operations, and as a non-structural project located at a considerable distance from any portion of the airport, will have no impact on the airport's land use plans.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

No Impact. There are no private airstrips located in the project vicinity, the closest private airstrip being the Bermuda Dunes Airport located 9.75± miles to the northwest, therefore no impact will occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

No Impact. The County of Riverside and City of Coachella have adopted emergency response plans and emergency operations plans that involve their respective fire departments, County Sheriff and other emergency response staff. The construction Alternative B may create some temporary road detours, although these are expected to be limited in scope and duration. These will not conflict or physically interfere with established emergency response or evacuation plans.

Utility Projects
The relocation of utilities may create some temporary road detours, although these are expected to be limited in scope and duration. These will not conflict or physically interfere with established emergency response or evacuation plans. No impact will occur. Adherence to the mitigation measures set forth in Section 2.10.7 will further ensure that impacts are less than significant.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

No Impact. The project planning area does not occur in a wildfire hazard zone as defined in either the Coachella or County General Plans. Alternative B will not increase the risk of wildland fires during construction or operational phases. Given that the entire project area is located primarily in urban and developed areas, and is not comprised of combustible materials, there will be no impacts associated with wildland fires or urban wildfires.

3.4.8.1.2 Alternative B Mitigation Measures

There are no potentially significant impacts. Mitigation measures are not required.

3.4.8.1.3 Alternative B Significance After Mitigation

There are no potentially significant hazardous materials impacts and a mitigation program is not required.

3.4.8.1.4 Alternative B Cumulative Impacts

Alternative B would have less than significant impacts associated with hazards and hazardous materials during both construction and operations. Alternative B would be subject to stringent hazardous material regulations imposed by local, regional, State and federal law. A potential future project occurring in the vicinity of the subject channel would be required to construct and operate facilities consistent with these same local, regional or State requirements. Therefore, Alternative B will not significantly contribute to cumulative impacts associated with hazards or hazardous materials.

3.4.8.2 Alternative C: "Slope Lining and Channel Widening"

3.4.8.2.1 Alternative C Impacts

a) Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Less than Significant: Alternative C will result in the same level of impact as the Proposed Project with respect to hazards to the public or environment through the routine transport, use, or disposal of hazardous materials. Given the limited and managed use of potentially toxic or hazardous materials in the construction and maintenance of the channel, and the programmatic regulation and oversight of their use, transport and disposal, Alternative C will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Utility Projects
Given the limited and managed use of potentially toxic or hazardous materials in the construction and maintenance of the proposed utility relocation projects, and the programmatic regulation and oversight of their use, transport and disposal, the utility relocation portion of the project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Adherence to the mitigation measures set forth in Section 2.10.7 will further ensure that impacts are less than significant.

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

Less than Significant. Alternative C will involve the same level of impact as the Proposed Project. During the construction phase, the contractor will be required to identify and properly prepare staging areas for storing materials. The use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, State, and local laws, including California Occupational Health and Safety Administration (CalOSHA) requirements. Alternative C would not result in a significant risk of explosion or accidental release of hazardous substances.

Utility Projects
As discussed in Section 2.10.6.b, it is not anticipated that the proposed utility relocations would result in a significant hazard to the public from foreseeable upset. The contractor will be required to identify and properly prepare staging areas for storing materials. The use and handling of hazardous materials during

construction activities would occur in accordance with applicable federal, State, and local laws, including California Occupational Health and Safety Administration (CalOSHA) requirements. SCG will be required to comply with all applicable state and federal regulations for the safe replacement and relocation of active gas lines. With proper protocols and management, the utility relocation portion of the project would not result in a significant risk of explosion or accidental release of hazardous substances. Adherence to the mitigation measures set forth in Section 2.10.7 will further ensure that impacts are less than significant.

c) Emits hazardous emissions or handles hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

Less than Significant. The nearest school to the project site is approximately 0.3 miles to the west of the project planning area. The construction, operation and maintenance of the subject channel segment will have no impact on schools from a hazardous materials perspective. Similar to the Proposed Project, Alternative C construction will involve the use of limited amounts of solvents, lubricants and ad fuels the use, storage and disposal of which will not come within 0.25 miles of this school. Regulations controlling the use, transport and disposal of construction-related materials, included standard requirements imposed by the Riverside County Department of Environmental Health, the Highway Patrol and local police and fire departments such as container types, securing of materials, etc., would ensure that impacts would be less than significant.

Utility Projects
The construction, operation and maintenance of the relocated utilities will have no impact on schools from a hazardous materials perspective. Regulations controlling the use, transport and disposal of construction-related materials, included standard requirements imposed by the Riverside County Department of Environmental Health, the Highway Patrol and local police and fire departments such as container types, securing of materials, etc., would ensure that impacts would remain less than significant. Mitigation measures set forth in Section 2.10.7 will further ensure that impacts to school and other sensitive receptors are less than significant.

d) Would be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to public to the public or the environment.

No Impact. According to the findings in the project-specific ISA, no location within the project boundary, or the boundary of any alternative is included on any lists of hazardous materials sites compiled pursuant to Government Code Section 65962.5. For this reason, this criterion is not applicable and no impact will occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.

No Impact. Similar to the Proposed Project, Alternative C will not result in habitable structures. The Jacqueline Cochran Regional Airport is located approximately 1.2 mile west of the CVSC project planning area, and its land use management plan encompasses the entire project planning area. The proposed channel improvement project and utility facility relocations will have no impact on airport operations, and as a non-structural (vertical) project located at a considerable distance from any of the airports, will have no impact on the airport's land use plans.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

No Impact. There are no private airstrips located in the project vicinity, the closest private airstrip being the Bermuda Dunes Airport located 9.75± miles to the northwest, therefore no impact will occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

No Impact. The County of Riverside and City of Coachella have adopted emergency response plans and emergency operations plans that involve their respective fire departments, County Sheriff and other emergency response staff. The construction Alternative C may create some temporary road detours, although these are expected to be limited in scope and duration. These will not conflict or physically interfere with established emergency response or evacuation plans.

Utility Projects
The relocation of utilities may create some temporary road detours, although these are expected to be limited in scope and duration. These will not conflict or physically interfere with established emergency response or evacuation plans. No impact will occur. Adherence to the mitigation measures set forth in Section 2.10.7 will further ensure that impacts are less than significant.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

No Impact. The project planning area does not occur in a wildfire hazard zone as defined in either the Coachella or County General Plans. Alternative C will not increase the risk of wildland fires during construction or operational phases. Given that the entire project area is located primarily in urban and developed areas, and is not comprised of combustible materials, there will be no impacts associated with wildland fires or urban wildfires.

3.4.8.2.2 Alternative C Mitigation Measures

There are no potentially significant impacts. Mitigation measures are not required.

3.4.8.2.3 Alternative C Significance After Mitigation

There are no potentially significant hazard or hazardous materials impacts, and a mitigation program is not required.

3.4.8.2.4 Alternative C Cumulative Impacts

Alternative C would make a less than significant contribution to cumulative impacts associated with hazards and hazardous materials during both construction and operations. Alternative C and all future other projects are subject to stringent regulations imposed by local, regional, State and federal law. Any project occurring in the vicinity of the subject channel would be required to construct and operate facilities consistent with these same local, regional or State requirements. Therefore, Alternative C will not significantly contribute to cumulative impacts associated with hazardous materials.

3.4.8.3 Alternative D: "No Project" Alternative

3.4.8.3.1 Alternative D Impacts

a) Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

No Impact. Under this alternative no changes or improvements to the CVSC are proposed. The public and the environment will not be exposed to hazards related to the routine transport, use, or disposal of hazardous materials from construction or operational activities. No impact would occur.

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

No Impact. Under this alternative no changes or improvements to the CVSC are proposed. The public and the environment will not be exposed to hazards related to the foreseeable upset and accident conditions involving the release of hazardous materials into the environment. No impact would occur.

c) Emits hazardous emissions or handles hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

No Impact. Schools will not be exposed to conditions related to hazards or hazardous materials as result of Alternative D, given that no project and no changes are proposed.

d) Would be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to public to the public or the environment.

No Impact. According to the findings in the project-specific ISA, no location within the project boundary, or the boundary of any alternative is included on any list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. For this reason, this criterion is not applicable and no impact will occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.

No Impact. There will be no proposed change under Alternative D and conditions will remain the same. There would be no impact to the airport land use plan or present a safety hazard for people residing or working in the project area.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

No Impact. There will be no proposed change under Alternative D and conditions will remain the same. There would be no impact to the airport land use plan or present a safety hazard for people residing or working in the project area.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

No Impact. The City of Coachella and the County of Riverside have adopted emergency response plans. Alternative D will result in no new changes or impacts to these plans. It should be noted that to the extent the "build" alternatives increase channel capacity to covey the 100-year storm, existing conditions may pose a threat to all-weather access at the Airport Boulevard bridge. Nonetheless, there will be no conflict with established plans since there will be not changes to roadways or transportation corridors.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

No Impact. Alternative D would have no wildfire impacts, since no change in current conditions would occur.

3.4.8.3.2 Alternative D Mitigation Measures

Alternative D would not require mitigation, since no project related activity would occur.

3.4.8.3.3 Alternative D Significance After Mitigation

There would be no impacts associated with hazards or hazardous materials under Alternative D.

3.4.8.3.4 Alternative D Cumulative Impacts

Alternative D would have no impacts associated with hazards and hazardous materials given that no change is proposed. Therefore, the Alternative D will not significantly contribute to cumulative impacts associated with hazards or hazardous materials. There will be no impact.

3.4.8.4 Environmentally Superior Alternative

None of the three build alternatives pose a significant impact with regard to hazards or hazardous materials. The Proposed Project is considered the environmentally superior alternative, in that it will require fewer haul trips for materials and aggregate, which reduces risks of unforeseen spills, and overall hazards when compared to Alternatives B and C. The build alternatives are also superior to the No Project Alternative in that they mitigate for and provide protection against the existing 100-year flood hazard in this area of the valley, and the possible loss of all-weather access at the Airport Boulevard bridge in such an event.

3.4.9 Hydrology and Water Quality

The following section analyzes the potential hydrology and water quality impacts associated with the CVSC Improvement Project alternatives. The project planning area is located at the southwesterly boundary of the Colorado River Hydrologic Region (HR) in the Whitewater River Hydrologic Unit (HU), and falls under the jurisdiction of the Colorado River RWQCB (Region 7).[23] Within Whitewater River Hydrologic Unit, the Project site lies in the Whitewater River watershed.

The Whitewater River is the principal drainage course through the Coachella Valley.[24] The CVSC is the easterly man-made extension of the Whitewater River Stormwater Channel (WRSC); extending east of Washington Street (in the city of La Quinta) and downstream to the Salton Sea delta. Its headwaters [of the WRSC] are in the San Bernardino Mountains and the terminus is the Salton Sea, a terminal lake with no outlet located in the Colorado Desert. The WRSC/CVSC is located within the Salton Sea drainage basin and it is the dominant stormwater drainage facility in the Coachella Valley

The 100-year floodplain in the project planning area is shown on Exhibit 2-7, showing the extent and depth of potential flooding outside of and beyond the CVSC in the project planning area. CVWD implements a multi-faceted floodplain management program of corrective and preventative measures to maximize channel capacity, minimize flood damage potential, and preserving and enhancing natural resources in the floodplain. Such programs may include emergency preparedness plans, flood control works, adoption and implementation of floodplain management regulations and plans.

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23 Colorado River Hydrologic Region; http://www.water.ca.gov/pubs/groundwater/bulletin_118/california%27s_groundwater__bulletin_118_-_update_2003_/bulletin118_10-cr.pdf; Accessed October 2017.

24 City of Coachella General Plan EIR (2014).

CVDW complies with state (California Department of Public Health, Division of Drinking Water) and federal (U.S. Environmental Protection Agency) drinking water quality standards. Each year, CVWD monitors domestic water wells for regulated and unregulated chemicals that are not detected during regular, ongoing monitoring.

Impaired Water Bodies: The Coachella Valley Stormwater Channel is listed as being impaired for Toxaphene, DDT (Dichlorodiphenyltrichloroethane), Nitrogen, Dieldrin, ammonia (Total Ammonia), PCBs (Polychlorinated biphenyls), Toxicity and Indicator Bacteria under Section 303(d) of the Clean Water Act (CWA)[25]. Total Maximum Daily Loads (TMDLs) for the pollutants listed above have been established for the Coachella Valley Stormwater Channel.

Please see Section 2.11.4 and Section 2.11.5 for a detailed description of existing hydrology and water quality conditions.

3.4.9.1 Alternative B: "Fully-Lined Channel"

3.4.9.1.1 Alternative B Impacts

a) Violate any water quality standards or wastewater discharge requirements.

Less than Significant. Similar to the Proposed Project, most of Alternative B's construction activities will be occurring within the channel and atop the channel service road. Other activities will include the transport of construction and slope lining materials into and out of the channel and the management of low flows in the channel as construction progresses.

Construction BMPs referenced in Section 2.11.6 and required by Mitigation Measures HYD-3 and 4, HYD-6 through 9, Section 2.11.7, will effectively reduce or avoid the discharge of any pollutants of concern that might enter nearby receiving waters by establishing limits of construction and the use of a variety of standard practices. With the application of mitigation set forth in Section 2.11.7, including HYD-3, 4, 6, 7, 8 and 9, Alternative B will not exceed wastewater discharge requirements, and impacts to water quality will be less than significant.

To protect the water quality during construction, SWRCB's existing construction policy (Construction General Permit Order 2009-0009-DWQ) will require the development of a project specific construction SWPPP in compliance with the State's General Construction Permit.

By following the procedures outlined in the mitigation measures set forth in Section 2.11.7, as well as SWPPP, impacts to water quality associated with Alternative B construction activities would be less than significant because pollution, contamination or nuisance as defined in Section 13050 of the CWC or violation of regulatory standards as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for receiving water body would be avoided or minimized with adherence to the permit conditions.

Utility Projects
As with the channel improvement portion of Alternative B, application of mitigation measures set forth in Section 2.11.7 will ensure that construction activities associated with the utility relocation projects will not exceed wastewater discharge requirements, and impacts to water quality will be less than significant.

[25] "CV Link EIR Water Quality Assessment Report," prepared by Stantec on September 2016.

To protect the water quality during construction, SWRCB's existing construction policy (Construction General Permit Order 2009-0009-DWQ) will require the development of project-specific construction SWPPPs in compliance with the State's General Construction Permit. Temporary construction BMPs will be considered and incorporated, as appropriate.

Impacts on water quality will be less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Less than Significant. Alternative B will generate demand for water resources for concrete, dust control, hydro-consolidation of soils, haul truck cleaning, and related construction activities. Water demand associated with project construction was calculated based on the extent and type of development. Compared to the Proposed Project, which demands approximately 4.25 acre-feet of water for concrete, Alternative B would require 210% more concrete (Alt A: 37,000 CY versus Alt B: 114,800 CY) and therefore have a higher water demand for required water of approximately 13.72 acre-feet. The Proposed Project and Alternative B have similar project areas and will have comparable water demands for all other construction activities, which is approximately 53± acre-feet over the course of construction.

Post-construction, annual channel maintenance will involve less routine vegetation mowing than required under the Proposed Project or Alternative C. Emergency repairs following a flood event will occur infrequently, with a conservative estimate of generating an annual average demand of 2 acre-feet of water.

Putting the water demand for the subject channel improvements, operation and maintenance into context helps to understand the relative significance of this demand. For 2015, the Coachella Valley Integrated Water Management Plan identified a valley-wide water demand of 689,753± acre-feet.[26] The CVSC project's modest one-time demand of 67± acre-feet constitutes a 0.009% increase in demand during the project's construction year.

Depending on location along the channel and the time of year, Alternative B may draw water from the perched groundwater table primarily associated with agricultural irrigation water, however it is not the source of supply for domestic uses in the area. Therefore, Alternative B will not substantially deplete groundwater supplies nor will it interfere substantially with groundwater recharge, will not create a net deficit in aquifer volume or lower the local groundwater table level. Production at surrounding wells, the nearest of which is 800 feet northwest of the project site, will be unaffected by Alternative B.

Therefore, the water demand associated with both construction and operation of the subject channel segment will be very limited, and any impacts to groundwater will be less than significant.

Utility Projects
Similar to the channel improvement portion of Alternative B, construction water demands for the utility relocation projects would be very limited and temporary, and would end once construction and relocation is complete. There will be no operational water demands. Impacts will be less than significant.

[26] "Coachella Valley Integrated Water Management Plan", prepared by Coachella Valley Regional Water Management Group. 2010.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or offsite.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of surface runoff in a manner, which would result in flooding on- or off-site.

Less than Significant (c and d): The intent of both the Proposed Project and Alternative B is to make improvements to the subject reach of the CVSC that are sufficient to contain the 100-year storm with adequate channel freeboard, which will mitigate the threat of potential loss of life, damage to property, and erosion outside of the channel in a large flooding event. The Alternative B will not substantially alter the existing drainage pattern, which will remain substantially the same as the existing condition and under the other two build alternatives. Low flows will continue in the same pattern as under existing conditions, with limited straightening of the flow line along the lined pilot channel. Under all build alternatives, including Alternative B, the channel will contain the 100-year storm flow projected for this reach of the channel and provide requisite freeboard.

Alternative B will allow the subject segment of the CVSC to carry a 100-year flow of approximately 39,000 cfs and an SPF flow of about 82,000 cfs. Alternative B will construct approximately 47.65 acres of impermeable surface in the form of [concrete] channel slope and bottom lining, which is 26.53 acres more than the impermeable surface purposed for the Proposed Project. However, due to the regional watershed served by the CVSC, the limited additional area of impermeable surface introduced into the watershed, and the lag time between local and regional runoff, Alternate B will not substantially increase the rate of surface runoff in a manner that would result in an increased flooding hazard either within the project area.

Utility Projects
The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways and graded shoulders, service roads, and existing utility structures. One IID power pole located within the channel would be removed, and the corresponding channel bottom will be excavated and lined at this location. The utility relocation projects will not substantially increase the rate of surface runoff in a manner that would result in an increased flooding hazard within the project planning area. Post-utility relocation conditions would be similar to existing utility and site conditions, with the exception of the IID power pole being removed from within the channel, and the existing drainage pattern would not adversely be altered. Impacts would be less than significant

e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Less than Significant with Mitigation. Similar to the Proposed Project, construction of Alternative B in itself would not generate large volumes of stormwater that would exceed the capacity of existing or planned stormwater channel improvements. However, the use of construction equipment, vehicles, and materials in the CVSC channel would create the potential for increases in polluted runoff during rain events. The same pre-construction planning required for the Proposed Project would be applicable to Alternative B to ensure construction materials and activities are controlled and managed through proper siting of construction staging areas, dust and runoff control plans, and the implementation of BMPs and mitigation measures set forth in Section 2.11.7. With the implementation of BMPs and mitigation measures, the potential for the project to generate significant volumes of polluted runoff will be less than significant

Utility Projects
As with the channel improvement portion of Alternative B, construction materials and activities associated with all utility relocation projects will be controlled and managed through pre-construction planning, thoughtful siting of construction staging areas, dust and runoff control plans, and the implementation of BMPs and mitigation measures set forth in Section 2.11.7. Neither would the subject utility relocation projects generate meaningful volumes of runoff. With the implementation of BMPs and mitigation measures, the potential for the project to generate significant volumes of runoff, polluted or otherwise, will be less than significant

f) Otherwise substantially degrade water quality.

Less than Significant. Alternative B will involve channel excavation and the installation of concrete side slope and fully lining the channel bottom from approximately 1,000 ft. upstream of Airport Boulevard to Thermal Drop. All of the planned construction materials are essentially inert once in place and concrete has cured. Once construction is completed, the planning area will be periodically monitored and channel maintenance performed. Post-construction, the project has a less than significant potential to substantially degrade local or regional water quality.

Utility Projects
All of the planned construction materials for the utility relocation project are essentially inert once in place and concrete has cured. Once construction is completed, the utilities will be periodically serviced and maintained, as necessary. During and post-construction, the utility relocations will have a less than significant potential to substantially degrade local or regional water quality.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazards Boundary or Flood Insurance Road Map or other flood hazard delineation map.

No Impact. Similar to the Proposed Project, Alternative B would not involve the construction of new housing. Rather, the project is designed to remove housing from the exiting 100-year flood plain. Therefore, Alternative B will have a beneficial environmental effect in this regard.

Utility Projects
The utility relocation projects would not place existing or new housing within a 100-year flood. No impact would occur.

h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flow.

No Impact. Similar to the Proposed Project, the intent of Alternative B is to reduce the extent of the 100-year flood threat by improving the channel construction and capacity. Channel bottom lining is proposed from approximately 1,000 ft. upstream of Airport Boulevard to Thermal Drop to ensure that flows through the channel and bridge supports are as efficient as possible. Alternative B does not introduce new obstructions to flood flows nor will it impede or deflect such flows.

Utility Projects
As noted above, the purpose of the Project is to reduce the extent of the 100-year flood threat and to improve flood flows through the Coachella Valley. One of the utility relocation projects requires the removal of an IID power pole located within the channel in proximity to the Airport Boulevard Bridge, which essentially removes a structure that would otherwise impede or redirect flood flows. The SCG natural gas line and irrigation lateral will be underground, and no new obstructions would result from the utility relocations.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

No Impact. Similar to the Proposed Project, construction of Alternative B will not result in an appreciable increase in channel flows and none of the flows constitutes a risk of damage, loss, injury or death. There are no impoundment levees or dams in the construction area and none are proposed. Temporary catchments and low-flow diversions are planned during construction to convey perennial flows through the site and to intercept and convey any groundwater that breaks out during excavation.

Utility Projects
There are no impoundment levees or dams in the construction area, and none are proposed. The SCG natural gas line and irrigation lateral will be underground, and no new obstructions would result from the utility relocations. Therefore, the utility relocation projects will not result in an appreciable increase in flooding and none of the flows constitutes a risk of damage, loss, injury or death.

j) Inundation by seiche, tsunami, or mud flow.

No Impact. Alternative B's construction area is virtually identical to the Proposed Project and is not vulnerable to seiche or tsunami, and there are no project features that would increase exposure of people or structures to such occurrences. The project will not create any large impoundments that could affect people or property. Mudflows are an extremely rare event in this area. No impact is anticipated.

Utility Projects
The utility relocation areas are not vulnerable to seiche or tsunami, and there are no project features that would increase exposure of people or structures to such occurrences. The project will not create any large impoundments that could affect people or property. No impact is anticipated.

3.4.9.1.2 Alternative B Mitigation Measures

Similar to the Proposed Project, Alternative B will be required to adhere to the same mitigation measures set forth in Section 2.11.7 to ensure the potential impacts on the existing and long-term water quality in the channel are below levels of significance. No new mitigation measures are required for this alternative.

3.4.9.1.3 Alternative B Significance After Mitigation

Implementation of the mitigation measures presented in Section 2.11.7 will ensure potential impacts to hydrology and water quality are reduced to less than significant levels.

3.4.9.1.4 Alternative B Cumulative Impacts

Alternative B will incrementally reduce the land area and improvements that are currently subject to flooding and/or inundation in a 100-year storm event in the subject reach of the channel. While construction has the potential to degrade surface water quality through soil erosion or accidental discharges, this potential will be avoided or minimized through the implementation of standard BMPs and the above described mitigation measures. Therefore, Alternative B will not make a substantially considerable contribution to local or regional hydrology or water quality.

3.4.9.2 Alternative C: "Slope Lining and Channel Widening"

3.4.9.2.1 Alternative C Impacts

a) Violate any water quality standards or wastewater discharge requirements.

Less than Significant Impact. Most of Alternative C's construction activities will be occurring within the channel and atop the channel service road. Channel widening will occur on lands to the east of the existing channel. Other activities will include the import and export of materials and the management of low flows in the channel as construction progresses.

Construction BMPs referenced in Section 2.11.6 and required by Mitigation Measures HYD-3 and 4, HYD-6 through 9, Section 2.11.7, will effectively reduce or avoid the discharge of any pollutants of concern that might enter nearby receiving waters by establishing limits of construction and the use of a variety of standard practices. In accordance with the Colorado River Basin Region NPDES Permit (NPDES No. CAS617002), the channel improvement project is not a Priority Development project. Therefore, no post-construction BMPs are required. With the application of mitigation set forth in Section 2.11.7, including HYD-3, 4, 6, 7, 8 and 9, Alternative C will not exceed wastewater discharge requirements, and impacts to water quality will be less than significant.

To protect the water quality during construction, SWRCB's existing construction policy (Construction General Permit Order 2009-0009-DWQ) will require the development of a project specific construction SWPPP in compliance with the State's General Construction Permit.

By following the procedures outlined in the mitigation measures set forth in Section 2.11.7, as well as SWPPP, impacts to water quality associated with Alternative C construction activities would be less than significant because pollution, contamination or nuisance as defined in Section 13050 of the CWC or violation of regulatory standards as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for receiving water body would be minimized and less than significant with adherence to the permit conditions.

Utility Projects
As with the channel improvement portion of Alternative C, application of mitigation measures set forth in Section 2.11.7 will ensure that construction activities associated with the utility relocation projects will not exceed wastewater discharge requirements, and impacts to water quality will be less than significant.

To protect the water quality during construction, SWRCB's existing construction policy (Construction General Permit Order 2009-0009-DWQ) will require the development of a project specific construction SWPPP in compliance with the State's General Construction Permit. Temporary construction BMPs will be considered and incorporated as appropriate.

Impacts on water quality will be less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Less than Significant. Alternative C will generate demand for water resources for concrete, dust control, hydro-consolidation of soils, haul truck cleaning, and related construction activities. Water demand associated with project construction was calculated based on the extent and type of development. Compared to the Proposed Project, which demands approximately 4.25± acre-feet of water for concrete, Alternative

C would require 0.5% more concrete (37,000 CY versus 37,200 CY) and therefore have a slightly higher water demand for concrete but will virtually be the same. Alternative C will disturb roughly 20 more acres than the Proposed Project, thus increasing water demands for construction activities from 53± acre-feet to 62.1± acre-feet have similar project areas and will have comparable water demands for all other construction activities, which is approximately over the course of construction.

Post-construction, annual channel maintenance will involve vegetation mowing and emergency repairs following a flood event that is anticipated to occur approximately every three years and generate an annual average demand of 2 acre-feet of water.

Putting the water demand for the subject channel improvements, operation and maintenance into context helps to understand the relative significance of this demand. For 2015, the Coachella Valley Integrated Water Management Plan has projected valley-wide water demand of 689,753 acre-feet.[27] The CVSC project's modest one-time demand of 66± acre-feet constitutes a 0.009% increase in demand during the project's construction year.

Depending on location along the channel and the time of year, Alternative C may intrude into the perched groundwater table primarily associated with agricultural irrigation water, which is not the source of supply for domestic uses in the area. Therefore, Alternative C will not substantially deplete groundwater supplies nor will it interfere substantially with groundwater recharge, will not create a net deficit in aquifer volume or lower the local groundwater table level. Surrounding wells will be unaffected by Alternative C.

Therefore, the water demand associated with both construction and operation of the subject channel segment will be very limited, and any impacts to groundwater will be less than significant.

Utility Projects

Similar to the channel improvement portion of Alternative C, construction water demands for the utility relocation projects would be temporary and would end once construction and relocation is complete. There will be no operational water demands associated with the utility relocation projects. Impacts will be less than significant.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or offsite.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of surface runoff in a manner, which would result in flooding on- or off-site.

Less than Significant (c and d): The intent of Alternative C is to make improvements to the subject reach of the CVSC that are sufficient to contain the 100-year storm with adequate channel freeboard, which will mitigate the threat of erosion outside of the channel in a large flooding event. Alternative C will not substantially alter the existing drainage pattern, excepting that it will contain the 100-year storm flow projected for this reach of the channel and also provide requisite freeboard.

Alternative C will allow the subject segment of the CVSC to carry a 100-year flow of approximately 39,000 cfs and an SPF flow of about 82,000 cfs. Alternative C will construct approximately 25.13 acres of impermeable surface in the form of [concrete] channel slope and bottom lining, which is 4 acres more than

[27] "Coachella Valley Integrated Water Management Plan", prepared by Coachella Valley Regional Water Management Group. 2010.

the impermeable surface purposed for the Proposed Project. However, due to the regional watershed served by the CVSC, the limited additional area of impermeable surface introduced into the watershed, and the lag time between local and regional runoff, Alternate C will not substantially increase the rate of surface runoff in a manner that would result in an increased flooding hazard either within the project area.

Utility Projects
The majority of impacts associated with the relocation of the CVWD irrigation lateral, SCG natural gas pipeline, and IID power poles would occur on lands currently disturbed by paved roadways and graded shoulders, service roads, and existing utility structures. One IID power pole located within the channel would be removed, and the corresponding channel bottom will be excavated and lined at this location. The utility relocation projects will not substantially increase the rate of surface runoff in a manner that would result in an increased flooding hazard either within the project planning area. Post-utility relocation conditions would be similar to existing utility conditions, with the exception of the IID power pole being removed from within the channel, and the existing drainage pattern would not adversely be altered. Impacts would be less than significant

e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Less than Significant with Mitigation. Similar to the Proposed Project, construction of Alternative C in itself would not generate large volumes of stormwater that would exceed the capacity of existing or planned stormwater channel improvements. However, the use of construction equipment, vehicles, and materials in the CVSC channel would create the potential for increases in polluted runoff during rain events. The same pre-construction planning required for the Proposed Project would be applicable to Alternative C to ensure construction materials and activities are controlled and managed through proper siting of construction staging areas, dust and runoff control plans, and the implementation mitigation measures set forth in Section 2.11.7. With the implementation of mitigation measures, the potential for the project to generate significant volumes of polluted runoff will be less than significant.

Utility Projects
As with the channel improvement portion of Alternative C, construction materials and activities associated with all utility relocation projects will be controlled and managed through pre-construction planning, thoughtful siting of construction staging areas, dust and runoff control plans, and the implementation of BMPs and mitigation measures set forth in Section 2.11.7. Neither would the subject utility relocation projects generate meaningful volumes of runoff. With the implementation of BMPs and mitigation measures, the potential for the project to generate significant volumes of polluted runoff will be less than significant

f) Otherwise substantially degrade water quality.

Less than Significant. Alternative C would provide slope protection along the entire length of the Project channel reach. The channel would be widened to the east between the mobile home park at Airport Boulevard downstream to the northernmost UPRR bridge. The channel invert would be lowered approximately five feet from about 1,000 feet upstream of the Airport Boulevard bridge to the Thermal Drop Structure. Lining would be constructed beneath the bridges similar to Alternative A. All of the planned construction materials are essentially inert once in place and concrete has cured. Once construction is completed, the planning area will be periodically monitored and channel maintenance performed. Post-construction, the project has a less than significant potential to substantially degrade local or regional water quality.

Utility Projects
All of the planned construction materials for the utility relocation project are essentially inert once in place and concrete has cured. Once construction is completed, the utilities will be periodically serviced and maintained, as necessary. Post-construction, the utility relocations will have a less than significant potential to substantially degrade local or regional water quality.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazards Boundary or Flood Insurance Road Map or other flood hazard delineation map.

No Impact. Similar to the Proposed Project, Alternative C would not involve the construction of new housing. Rather, the project is designed to remove housing from the exiting 100-year flood plain. Therefore, Alternative C will have a beneficial environmental effect in this regard.

Utility Projects
The utility relocation projects would not place existing or new housing within a 100-year flood. No impact would occur.

h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flow.

No Impact. Similar to the Proposed Project, the intent of Alternative C is to reduce the extent of the 100-year flood threat by improving the channel construction and capacity. Slope protection will be provided along the entire length of the project channel reach and the channel would be widened to the east between Airport Boulevard downstream to the northernmost UPRR bridge to ensure that flows through the channel are as efficient as possible. Alternative C does not introduce new obstructions to flood flows nor will it impede or deflect such flows.

Utility Projects
As noted above, the purpose of the Project is to reduce the extent of the 100-year flood threat and to improve flood conveyance through the Coachella Valley. One of the utility relocation projects requires the removal of an IID power pole located within the channel in proximity to the Airport Boulevard Bridge, which essentially removes a structure that would otherwise impede or redirect flood flows. The SCG natural gas line and irrigation lateral will be underground, and no new obstructions would result from the utility relocations.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

No Impact. Similar to the Proposed Project, construction of Alternative C will not result in an appreciable increase in channel flows and none of the flows constitutes a risk of damage, loss, injury or death. There are no impoundment levees or dams in the construction area and none are proposed. Temporary catchments and low-flow diversions are planned during construction to convey perennial flows through the site and to intercept and convey any groundwater that breaks out during excavation.

Utility Projects
There are no impoundment levees or dams in the construction area and none are proposed. Therefore, the utility relocation projects will not result in an appreciable increase in flooding and none of the flows constitutes a risk of damage, loss, injury or death.

j) Inundation by seiche, tsunami, or mud flow.

No Impact. Alternative C's construction area is not vulnerable to seiche or tsunami, and there are no project features that would increase exposure of people or structures to such occurrences. The project will not create any large impoundments that could affect people or property. Mudflows are an extremely rare event in this area. No impact is anticipated.

Utility Projects
The utility relocation areas are not vulnerable to seiche or tsunami, and there are no project features that would increase exposure of people or structures to such occurrences. The project will not create any large impoundments that could affect people or property. No impact is anticipated.

3.4.9.2.2 Alternative C Mitigation Measures

Similar to the Proposed Project, Alternative C will be required to adhere to the same mitigation measures set forth in Section 2.11.7 to ensure the potential impacts on the existing and long-term water quality in the channel are below levels of significance. No new mitigation measures are required for this alternative.

3.4.9.2.3 Alternative C Significance After Mitigation

Implementation of the mitigation measures presented in Section 2.11.7 will ensure potential impacts to hydrology and water quality are reduced to less than significant levels.

3.4.9.2.4 Alternative C Cumulative Impacts

Alternative C will incrementally reduce the land area and improvements that are currently subject to flooding and/or inundation in a 100-year storm event in the subject reach of the channel. While construction has the potential to degrade surface water quality through soil erosion or accidental discharges, this potential will be avoided or minimized through the implementation of standard BMPs and the above described mitigation measures. Therefore, Alternative C will not make a substantially considerable contribution to local or regional hydrology or water quality.

3.4.9.3 Alternative D: "No Project" Alternative

3.4.9.3.1 Alternative D Impacts

a) Violate any water quality standards or wastewater discharge requirements.

No Impact. Alternative D will not result in CVSC improvements and the existing conditions remain as they currently occur. Therefore, there will be no violation of water quality standards or wastewater discharge.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

No Impact. Alternative D will have no impact on supplies of groundwater, nor will it interfere with groundwater recharge. The CVSC will remain under the same conditions and levees around the CVSC will not be improved with additional impervious surfaces.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or offsite.

No Impact. Alternative D will maintain existing conditions and there will be no physical changes to the environment such as alterations in drainage patterns or alteration of a stream or river.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of surface runoff in a manner, which would result in flooding on- or off-site.

No Impact. Alternative D will not change the hydrologic patterns within the planning area and will not result in any new or increased risk of on-site or off-site flooding.

e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

No Impact. Alternative D will not create any new runoff and would not result in any additional source of polluted runoff.

f) Otherwise substantially degrade water quality.

No Impact. As noted above, Alternative D will effect no changes on the environment and no degradation of local water quality will result.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazards Boundary or Flood Insurance Road Map or other flood hazard delineation map.

Significant and Unavoidable Impact. Alternative D would result in no changes to the physical environment and would not place new housing within a 100-year flood hazard area. However, current conditions do not provide adequate stormwater protection for existing housing and structures in the project area (see Exhibit 2-7 Existing 100-Year Flood Plain in the Planning Area). Because the nature of this alternative is to provide no additional improvements to the CVSC, and the only way to mitigate the flooding hazard would be to improve the CVSC, Alternative D will result in significant and unavoidable flooding impacts.

h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flow.

Significant and Unavoidable Impact. As noted above, under Alternative D there will be no construction within a 100-year flood hazard area or elsewhere. However, current conditions do not provide adequate stormwater protection to existing housing and structures in the project area (see Exhibit 2-7 Existing 100-Year Flood Plain in the Planning Area). Because the nature of this alternative is to provide no additional improvements to the CVSC, and the only way to mitigate the flooding hazard would be to improve the CVSC, Alternative D will result in significant and unavoidable flooding impacts.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

Significant and Unavoidable Impact. As noted above, under Alternative D there will be no construction within a 100-year flood hazard area or elsewhere. However, current conditions do not provide adequate stormwater protection to existing housing and structures in the project area (see Exhibit 2-7 Existing 100-Year Flood Plain in the Planning Area). Because the nature of this alternative is to provide no additional improvements to the CVSC, and the only way to mitigate the flooding hazard would be to improve the CVSC, Alternative D will result in significant and unavoidable flooding impacts.

j) Inundation by seiche, tsunami, or mud flow.

No Impact. Alternative D will not affect stormwater or domestic water storage, and will not expose people or structures to seiche, tsunami, or mudflows.

3.4.9.3.2 Alternative D Mitigation Measures

As discussed above, Alternative D will result in significant and unavoidable impacts. Due to the nature of a "No Project" alternative, Alternative D will not be able to provide the improvements and/or mitigation necessary to protect existing housing and structures in the project area from flooding hazards.

3.4.9.3.3 Alternative D Significance After Mitigation

Alternative D will not be able to provide the improvements and/or mitigation necessary to protect existing housing and structures in the project area from existing flooding hazards. Therefore, Alternative D will result in significant and unavoidable impacts associated with continuing flooding hazards.

3.4.9.3.4 Alternative D Cumulative Impacts

Alternative D will have no cumulative impacts.

3.4.9.4 Environmentally Superior Alternative

Alternatives A, B, and C "build alternatives" would be required to comply with the same local, state, and federal regulations pertaining to water quality and hydrology. All build alternatives meet the necessary hydraulic flow and capacity to achieve project objectives. The Proposed Project is considered the environmentally superior project because it requires the lowest water demand during construction.

3.4.10 Land Use Planning

The Coachella Valley is located in the central portion of Riverside County at the westernmost limits of the Sonoran Desert. The region is noted for prime agricultural lands in the east valley areas, and for exclusive resort residential and world-class tourist developments primarily in the western and central portions of the valley, although this trend is continuing to move east towards the project area. The region is served by major transportation arteries, including US Interstate-10, State Highways 111, 74, 62 and 86, and the Union Pacific Railroad. Lands adjacent to and in proximity of the proposed channel improvement project are primarily designated for *Light Industrial*, *Low Density Residential* and *Commercial Retail*. An area designated *High Industrial* is located on the west side of the channel between Airport Boulevard (Ave 56) and Ave 54. The channel itself is designated *Public Facilities*. Lands south of the project south limits are primarily designated *Agriculture* (per City of Coachella and Riverside County General Plan).

The project planning area extends approximately one mile north and south of Airport Boulevard (Avenue 56) and is located in the City of Coachella and the unincorporated Riverside County community of Thermal, with residential development located both east and west of the existing channel. While potential improvements to the existing channel have been in place for several decades and much of the residential development on the east side of the channel has occurred since the channel's construction.

Lands adjacent to and in proximity of the proposed channel improvement project are primarily designated for *Light Industrial*, *Low Density Residential* and *Commercial Retail*. An area designated *High Industrial* is located on the west side of the channel between Airport Boulevard (Ave 56) and Ave 54. The channel itself is designated *Public Facilities*. Lands south of the project south limits are primarily designated *Agriculture*. Also please see Exhibit 2-9 Land Use Map.

Please see Sections 2.15.4 and 2.15.5 for detailed description of the existing land use conditions.

3.4.10.1 Alternative B: "Fully-Lined Channel"

3.4.10.1.1 Alternative B Impacts

a) Physically divide an established community.

Less than Significant Impact. Alternative B will be constructed primarily within the existing CVSC channel cross-section and atop the existing flood control channel maintenance roads. The channel already serves to divide the communities to some degree, but connectivity between lands to the east and west will continue to be well provided by Airport Boulevard and Highway 111 and their bridges over the channel, and Cactus Drive to the east. Similar to the Proposed Project, access to one mobile home park and adjacent lands could be temporarily disrupted by channel construction activities and short-term lane closures or detours. Mitigation Measure TRA-6 addresses and will preclude these potential impacts. No new mitigation measures are required for Alternative B.

Utility Projects
The proposed utility relocation projects will primarily occur on lands previously disturbed by roadways, service roads, and utility structures. No utility relocation will traverse or physically divide an established community or isolate any community. There will be no impacts.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

Less than Significant Impact. CVWD is the Lead Agency for this project and has sole jurisdiction over the subject channel improvement project. Alternative B is consistent with and implements goals, policies and programs of both the County and Coachella General Plans. It is also consistent with CVWD's *Eastern Coachella Valley Stormwater Master Plan* (2017).

Alternative B also protects existing lands, improvements and homes that are currently subject to damage in the event of a 100-year storm, and protects and makes possible the development of additional lands without the threat of flood damage in such an event. Once constructed and with FEMA re-designation, the subject channel improvements will also remove lands from the need for flood insurance coverage.

Therefore, the project will not result in a significant conflict with any applicable land uses, land use designations, or other land use plan, policy, or regulation. Impacts would be less than significant.

Utility Projects
The utility relocation projects will not result in a change to, or interfere with any applicable land uses, land use designations, or other land use plan, policy, or regulation. All relocations will be in close proximity to their respective impact areas. Impacts would be less than significant.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

Less than Significant with Mitigation. Similar to the Proposed Project, Alternative B is also supported by the Biological Resource Assessment Report and Coachella Valley Multiple Species Habitat Conservation Plan Compliance Analysis, provided in Appendix C. Of the 32 species identified with potential to occur in the project area, seven are fully covered and conserved by the CVMSHCP: desert pupfish, flat-tailed horned lizard, southwestern willow flycatcher, least Bell's vireo, western yellow bat, Palm Springs pocket mouse, and Coachella Valley (Palm Springs) round-tailed ground squirrel. One sensitive species that is known to occur in the project planning area is the burrowing owl, which is a covered species under the CVMSHCP; the Section 7 ESA federal permit for the CVMSHCP does not allow take of this species under the MBTA. This species nests and roosts underground and is particularly vulnerable to ground disturbing activities.

Neither the County of Riverside nor the City of Coachella have local ordinances protecting biological resources. Both jurisdictions and CVWD are signatories to and participate in the implementation of the CVMSHCP. The CVMSHCP recognizes the importance of maintaining regional flood control facilities and makes provision for such maintenance in Conservation Areas.[28] Alternative B is located outside of a CVMSHCP Conservation Area. As a Permittee under the CVMSHCP, CVWD must comply with all applicable terms and conditions of the CVMSHCP and Implementing Agreement (See Section 13.0 of the CVMSHCP Implementing Agreement). These include, but are not limited to, implementation of "Land Use Adjacency Guidelines", where applicable. However, the project site is not located adjacent to a conservation area associated with the CVMSHCP.

Compliance with the mitigation measure presented in Section 2.12.7 (also see Mitigation Measures BIO-1, BIO-2, BIO-4, and BIO-10 through 12 in Section 2.5) including compliance with all requirements of the CVMSHCP, will ensure that the CVSC improvement project will not conflict with any local policy, ordinance, or Habitat Conservation Plan. Therefore, with mitigation, impacts will be less than significant. No new mitigation measures are required for Alternative B.

Utility Projects

For all utility projects, compliance with the mitigation measure presented in Section 2.12.7 (also see Mitigation Measures BIO-1, BIO-2, BIO-4, and BIO-10 through 12 in Section 2.5) including compliance with all requirements of the CVMSHCP, will ensure that the utility relocations will not conflict with any local policy, ordinance, or Habitat Conservation Plan. Therefore, with mitigation, impacts will be less than significant.

3.4.10.1.2 Alternative B Mitigation Measures

No new mitigation measures would be necessary as land use impacts would be less than significant. Mitigation measures set forth in Section 2.12.7, related compliance with the MSHCP shall also be adhered to under the Alternative B scenario.

3.4.10.1.3 Alternative B Significance After Mitigation

The channel improvement project will have beneficial effects on surrounding land in the project area by significantly reducing future flooding hazards. Potential land use impacts associated with Alternative B will be limited to temporary access, will occur only during construction and will be of short duration. With the implementation of the mitigation measure, impacts associated with land use and land use compatibility will be less than significant.

3.4.10.1.4 Alternative B Cumulative Impacts

The majority of the proposed channel improvement project will occur within CVWD rights-of-way with most limits of disturbance occurring in areas that are currently periodically disturbed as part of regular channel maintenance. There are no potential project conflicts or inconsistencies with applicable adopted plans, policies and regulations, and the project would not combine with others to result in a substantial cumulative impact. The surrounding land uses will benefit and flooding conditions on adjoining lands will be enhanced by the project. In the overall, there will be a less than cumulatively substantial effect on existing and planned land uses generated by Alternative B.

[28] Coachella Valley Multiple Species Habitat Conservation Plan, Section 7.3.1.1: Covered Operation, Maintenance, and Safety Activities within Existing Rights-of-Way or Easements.

3.4.10.2 Alternative C: "Slope Lining and Channel Widening"

3.4.10.2.1 Alternative C Impacts

a) Physically divide an established community.

Less than Significant Impact. Similar to the Proposed Project, a portion of Alternative C will be constructed within the existing CVSC channel cross-section and atop the existing flood control channel maintenance roads. Alternative C will also widen the eastern portion of the channel between the mobile home park at Airport Boulevard downstream to the northernmost UPRR bridge; however, channel improvements will not divide the mobile home park community. The channel already serves to divide the communities to some degree, but connectivity between lands to the east and west will continue to be well provided by Airport Boulevard, Highway 111 and Cactus Drive. Similar to the Proposed Project, access to one mobile home park and adjacent lands could be temporarily disrupted by channel construction activities and short-term lane closures or detours. Mitigation Measure TRA-6 addresses and will preclude these potential impacts. No new mitigation measures are required for Alternative C.

Utility Projects
The proposed utility relocation projects will primarily occur on lands previously disturbed by roadways, service roads, and utility structures. No utility relocation will traverse or physically divide an established community. There will be no impacts.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

Less than Significant Impact. CVWD is the Lead Agency for this project and has sole jurisdiction over the subject channel improvement project. Alternative C is consistent with and implements goals, policies and programs of both the County and Coachella General Plans. It is also consistent with CVWD's *Eastern Coachella Valley Stormwater Master Plan* (2017).

Alternative C also protects existing lands, improvements and homes that are currently subject to damage in the event of a 100-year storm, and protects and makes possible the development of additional lands without the threat of flood damage in such an event. Once constructed, the subject channel improvements will also remove lands from the need for flood insurance coverage.

Therefore, the project will not result in a significant conflict with any applicable land uses, land use designations, or other land use plan, policy, or regulation. Impacts would be less than significant.

Utility Projects
The utility relocation projects will not result in a change to, or interfere with any applicable land uses, land use designations, or other land use plan, policy, or regulation. All utility relocations will be in close proximity to their respective impact areas. Impacts would be less than significant.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

Less than Significant with Mitigation. Alternative C would have similar impacts to conservation plans as the Proposed Project and Alternative B. Although Alternative C would disturb approximately 20 more acres with the widening of the channel, the same regional/local biological species are potentially affected. Of the 32 species identified with potential to occur in the project area, seven are fully covered and conserved by the CVMSHCP: these include desert pupfish, flat-tailed horned lizard, southwestern willow flycatcher, least Bell's vireo, western yellow bat, Palm Springs pocket mouse, and Coachella Valley (Palm Springs) round-

tailed ground squirrel. One sensitive species that occurs in the project planning area is the burrowing owl, which is a covered species under the CVMSHCP; the federal permit for the CVMSHCP does not allow take of this species under the MBTA. This species nests and roosts underground and is particularly vulnerable to ground disturbing activities.

Alternative C is located outside of a CVMSHCP Conservation Area. As a Permittee under the CVMSHCP, CVWD must comply with all applicable terms and conditions of the CVMSHCP and Implementing Agreement (See Section 13.0 of the CVMSHCP Implementing Agreement). This includes, but not limited to, implementation of "Land Use Adjacency Guidelines", where applicable.

Compliance with the mitigation measure presented in Section 2.12.7 (also see Mitigation Measures BIO-1, BIO-2, BIO-4, and BIO-10 through 12 in Section 2.5) including compliance with all requirements of the CVMSHCP, will ensure that the CVSC improvement project will not conflict with any local policy, ordinance, or Habitat Conservation Plan. Therefore, with mitigation, impacts will be less than significant. No new mitigation measures are required for Alternative C.

Utility Projects
For all utility projects, compliance with the mitigation measure presented in Section 2.12.7 (also see Mitigation Measures BIO-1, BIO-2, BIO-4, and BIO-10 through 12 in Section 2.5.7) including compliance with all requirements of the CVMSHCP, will ensure that the utility relocations will not conflict with any local policy, ordinance, or Habitat Conservation Plan. Therefore, with mitigation, impacts will be less than significant.

3.4.10.2.2 Alternative C Mitigation Measures

No new mitigation measures would be necessary as land use impacts would be less than significant. Mitigation measures set forth in Section 2.12.7 and related to compliance with the MSHCP shall also be adhered to under the Alternative C scenario.

3.4.10.2.3 Alternative C Significance After Mitigation

The channel improvement project will have beneficial effects on land uses and long-term land use plans in the project area. Potential land use impacts associated with Alternative C will be limited to temporary access, will occur only during construction and will be of short duration. With the implementation of the mitigation measure, impacts associated with land use and land use compatibility will be less than significant.

3.4.10.2.4 Alternative C Cumulative Impacts

Similar to the Proposed Project and Alternative B, there are no potential project conflicts or inconsistencies with applicable adopted plans, policies and regulations, and the project would not combine with others to result in a substantial cumulative impact. The surrounding land uses will benefit and flooding conditions on adjoining lands will be enhanced by the project. In the overall, there will be a less than cumulatively substantial effect on existing and planned land uses generated by Alternative C.

3.4.10.3 Alternative D: "No Project" Alternative

3.4.10.3.1 Alternative D Impacts

a) Physically divide an established community.

No Impact. There will be no proposed change under Alternative D and conditions will remain the same. For this reason, Alternative D will not physically divide an established community.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

No Impact. Given that conditions will not be changed under Alternative D, no conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction will occur. It should be noted that both the Coachella and County General Plans explicitly or implicitly assume and endorse a CVSC facility that contains the 100-year flood.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

No Impact. Under this alternative no changes are proposed. There will be no conflicts with any applicable habitat conservation plan or community conservation plan.

3.4.10.3.2 Alternative D Mitigation Measures

Alternative D would not require mitigation, since no project related activity would occur.

3.4.10.3.3 Alternative D Significance After Mitigation

There would be no impacts associated with land use under Alternative D.

3.4.10.3.4 Alternative D Cumulative Impacts

As analyzed above, Alternative D would have no significant impacts associated with land use. Existing flooding threats to existing and future land uses would continue and constrain uses and future development. Nonetheless, Alternative D will not significantly contribute to cumulative impacts associated with land uses or land use policy. There will be no cumulatively considerable impact.

3.4.10.4 Environmentally Superior Alternative

Alternative A (Proposed Project) is considered the environmentally superior alternative because it will result in the lowest acreage of impermeable surfaces that are covered by the CVMSHCP.

3.4.11 Mineral and Energy Resources

The following section analyzes the potential mineral and energy impacts associated with the CVSC Improvement Project alternatives. The region is important in terms of both construction-related mineral resources and in the production of energy from renewable resources. In the Coachella Valley, mineral resources are largely associated with fluvial deposits in the Indio Hills, Mecca Hills and foothills of the Little San Bernardino Mountains. Energy resources are becoming more distributed in the valley, with wind turbine development focused in the San Gorgonio Pass area and geothermal at the south end of the Salton Sea. Solar photovoltaic systems are being developed throughout the valley.

Please see Section 2.13.4 and 2.13.5 for detailed discussion of the existing mineral and energy conditions in the project area.

3.4.11.1 Alternative B: "Fully-Lined Channel"

3.4.11.1.1 Alternative B Impacts

a) Use large or excessive amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner?

Less than Significant Impact. Similar to the Proposed Project, Alternative B would use limited amount of fossil fuels for the construction equipment at the site. The type and number of pieces of equipment to be involved in Alternative B's channel's improvements has been evaluated by the project engineers and those data have been used to conduct air quality and other analysis. Construction information and project-specific assessment were used to estimate gasoline and/or diesel fuel consumption on the construction site. The project's energy demand will be temporary and ends with completion of the proposed channel improvements. The project is not expected to result usage of large or excessive amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner and energy demand will be de minimis once construction is completed. Less than significant impact is anticipated.

Utility Projects
As with the channel improvement portion of Alternative B, the utility relocations will only require energy during the construction period. The utility facilities relocation projects will not, in and of themselves, result in the usage of large or excessive amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner and energy demand will be de minimis during and following construction. Less than significant impact is anticipated.

b) Constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand?

No Impact. Construction activities associated with buildout of Alternative B would require energy mainly supplied by gasoline, propane, or diesel-powered generators with minimal or no reliance on the electrical grid. Overall, electricity consumption that would be required during construction would be limited and temporary. Therefore, construction activities associated with buildout of Alternative B would not create electrical system capacity problems or result in the construction of new or expanded electricity facilities and impacts on available electricity supplies would be less than significant. Once constructed, Alternative B will not require any grid-sourced electricity. Therefore, overall demand will be limited and temporary and would not constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand. No impact is anticipated.

Utility Projects
Energy required during utility relocation activities would be limited and temporary. Minor and temporary disruptions to electricity and natural gas supplies will not affect users, and no additional capacity will be required. The majority of construction activities would not draw power from the local electrical grid, and impacts on available electricity and natural gas supplies would be less than significant. Therefore, overall demand will be limited and temporary and would not constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand. No impact is anticipated.

c) Require or result in the construction or expansion of new electrical generation and/or transmission facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact. As noted above, construction of Alternative B will result in a temporary, and less than significant demand for electrical power. At buildout, the project will not result in electrical demand. Overall, Alternative B would require or result in the construction alternative transmission facilities, as described in Section 1.0, but would not require expansion of new electrical generation facilities. Only limited relocation of power poles will be required. The Project will have a less than significant impact to generation and transmission facilities is anticipated.

Utility Projects
As noted above, construction of the project will result in a temporary, and less than significant demand for electrical power. At buildout, the project will not require any new grid-sourced electricity. Overall, the project will not require or result in the construction or expansion of new electrical generation facilities. Less than significant impact is anticipated. No impact is anticipated.

d) Conflict with existing energy standards, including standards for energy conservation?

No Impact. There are no standards for energy conservation related to construction of flood control facilities applicable to the Project. Alternative B's energy consumption will be limited, and much of the project's energy will be embedded in channel concrete and steel providing long-term return on this energy investment. Energy investment will largely end with completion of construction, and neither construction nor operation-related energy needs of the project will conflict with any current energy standards or conservation goals.

Utility Projects
There are no standards for energy conservation related to the relocation of utility facilities. Upon completion of the relocation activities, the utility facilities will generate no additional demand for energy. Neither construction nor operation of these facilities will conflict with any current energy standards or conservation goals.

e) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Less than Significant Impact. Lands within the CVSC project planning area are classified as MRZ-1, indicating that no significant mineral resources occur or are expected to occur in this area. The construction of Alternative B would require approximately 115,000 CY of aggregate. With approximately 272 million tons of mineable aggregate currently permitted in the Coachella Valley, the project's total aggregate demand is approximately 0.02% of permitted aggregate at all operating mining operations in the valley. The impact of the project on the availability of the sand and gravel resource would not be significant because the volume of material already permitted for mineral extraction in the valley is sufficient to meet demand for approximately 130 years at current rates of consumption. Alternative B, including the utility relocation projects, will not physically affect these mineral resources. Project's impact on the known mineral resources would be less than significant.

f) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. Lands within the CVSC project planning area are classified as MRZ-1, indicating that no significant mineral resources occur or are expected to occur in this area. The project area is not located close to known locally important mineral resource recovery site delineated on a local general plan. No impact is anticipated.

Utility Projects
No utility relocation will occur near known locally important mineral resource recovery site delineated on a local general plan. No impact is anticipated.

3.4.11.1.2 Alternative B Mitigation Measures

No mitigation measures and monitoring programs are required.

3.4.11.1.3 Alternative B Significance After Mitigation

There will be less than significant impacts to energy and mineral resources as a consequence of the construction of Alternative B.

3.4.11.1.4 Alternative B Cumulative Impacts

The demand for non-renewable energy at the completion of Alternative B would not trigger the need for new electrical or natural gas generation facilities, as it will generate its electric power needs from portable equipment rather than from the utility grid. The Alternative B's demand for mineral resources (0.02% of the total permitted aggregate currently permitted for extraction in the valley) will also be quite limited. Alternative B's contribution to a cumulative impact on energy and mineral resources would not be cumulatively considerable.

3.4.11.2 Alternative C: "Slope Lining and Channel Widening"

3.4.11.2.1 Alternative C Impacts

a) Use large or excessive amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner?

Less than Significant Impact. Similar to the Proposed Project, Alternative C would use limited amount of fossil fuels for the construction equipment at the site. The type and number of pieces of equipment to be involved in Alternative C's channel's improvements has been evaluated by the project engineers and those data have been used to conduct air quality and other analysis. Construction information and project-specific assessment were used to estimate gasoline and/or diesel fuel consumption on the construction site. The project's energy demand will be temporary and ends with completion of the proposed channel improvements. The project is not expected to result usage of large or excessive amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner and energy demand will be de minimis once construction is completed. Less than significant impact is anticipated.

Utility Projects
As with the channel improvement portion of Alternative C, the utility relocations will only require energy during the construction period. The utility facilities will not, in and of themselves, result in the usage of large or excessive amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner and energy demand will be de minimis once construction is completed. Less than significant impact is anticipated.

b) Constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand?

No Impact. Construction activities associated with buildout of Alternative C would require energy mainly supplied by gasoline, propane, or diesel-powered generators with minimal or no reliance on the electrical grid. Overall, electricity consumption that would be required during construction would be limited and temporary. Therefore, construction activities associated with buildout of Alternative C would not create electrical system capacity problems or result in the construction of new or expanded electricity facilities

and impacts on available electricity supplies would be less than significant. Once constructed, Alternative C will not require any grid-sourced electricity. Therefore, overall demand will be limited and temporary and would not constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand. No impact is anticipated.

Utility Projects
Energy required during utility relocation activities would be limited and temporary. Minor and temporary disruptions to electricity and natural gas supplies will not affect users, and no additional capacity will be required. The majority of construction activities would not draw power from the local electrical grid, and impacts on available electricity or natural gas supplies would be less than significant.

Once constructed, utility facilities will not require any grid-sourced electricity. Therefore, overall demand will be limited and temporary and would not constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand. No impact is anticipated.

c) Require or result in the construction or expansion of new electrical generation and/or transmission facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact. As noted above, construction of Alternative C will result in a temporary, and less than significant demand for electrical power. At buildout, the Project will not result in electrical demand. Overall, Alternative C will not require or result in the construction or expansion of new electrical generation and/or transmission. Less than significant impact is anticipated.

Utility Projects
As noted above, construction of the project will result in a temporary, and less than significant demand for electrical power. At buildout, the project will not require any grid-sourced electricity. Overall, the project will not require or result in the construction or expansion of new electrical generation facilities. Less than significant impact is anticipated. No impact is anticipated.

d) Conflict with existing energy standards, including standards for energy conservation?

No Impact. There are no standards for energy conservation related to construction of flood control facilities applicable to the Project. Alternative C's energy consumption will be limited, and much of the Project's energy will be embedded in channel concrete providing long-term return on this energy investment. Energy investment will largely end with completion of construction, and neither construction nor operation of the Project will conflict with any current energy standards or conservation goals.

Utility Projects
There are no standards for energy conservation related to the relocation of utility facilities. Upon completion of the relocation activities, the utility facilities will generate no new demand for energy. Neither construction nor operation of the utility relocation projects will conflict with any current energy standards or conservation goals.

e) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Less than Significant Impact. Lands within the Project planning area are classified as MRZ-1, indicating that no significant mineral resources occur or are expected to occur in this area. The construction of Alternative C would require approximately 27,000 CY of aggregate. With approximately 272 million tons of mineable aggregate currently permitted in the Coachella Valley, the Project's total aggregate demand is approximately 0.01% of permitted aggregate at all operating mining operations in the valley. The impact

of the Project on the availability of the sand and gravel resource would not be significant because the volume of material already permitted for mineral extraction in the valley is sufficient to meet demand for approximately 130 years at current rates of consumption. Alternative C, including the utility relocation projects, will not physically affect these mineral resources. Project's impact on the known mineral resources would be less than significant.

f) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. Lands within the Project planning area are classified as MRZ-1, indicating that no significant mineral resources occur or are expected to occur in this area. The Project area is not located close to known locally important mineral resource recovery site delineated on a local general plan. No impact is anticipated.

Utility Projects
No utility relocation will occur near known locally important mineral resource recovery site delineated on a local general plan. No impact is anticipated.

3.4.11.2.2 Alternative C Mitigation Measures

No mitigation measures and monitoring programs are required.

3.4.11.2.3 Alternative C Significance After Mitigation

There will be less than significant impacts to energy and mineral resources as a consequence of the construction of Alternative C.

3.4.11.2.4 Alternative C Cumulative Impacts

The demand for energy at the completion of Alternative C would not trigger the need for new electrical or natural gas generation facilities, as it will generate its electric power needs from portable equipment rather than from the utility grid. Alternative C's contribution to a cumulative impact on energy resources would not be cumulatively considerable.

Alternative C will result in a demand for about 0.01% of the total permitted aggregate currently permitted for extraction in the Coachella Valley. Although the aggregate required for Alternative C will contribute to the continued reduction in this material, Alternative C will not be cumulatively considerable.

3.4.11.3 Alternative D: "No Project" Alternative

3.4.11.3.1 Alternative D Impacts

a) Use large or excessive amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner?

No Impact. Under the Alternative D scenario, no CVSC improvements would be constructed and there would be no expenditures of energy.

b) Constrain local or regional energy supplies, require additional capacity, or substantially affect peak and base periods of electrical demand?

No Impact. Under the Alternative D scenario, no CVSC improvements would be constructed and there would be no expenditures of energy.

c) Require or result in the construction or expansion of new electrical generation and/or transmission facilities, the construction of which could cause significant environmental effects?

No Impact. Under the Alternative D scenario, no CVSC improvements would be constructed and there would be no expenditures of energy.

d) Conflict with existing energy standards, including standards for energy conservation?

No Impact. Under the Alternative D scenario, no CVSC improvements would be constructed and there would be no expenditures of energy.

e) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. Under the Alternative D scenario, no CVSC improvements would be constructed and there would be no commitment of mineral resources to the Project.

f) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. Under the Alternative D scenario, no CVSC improvements would be constructed and there would be no commitment of mineral resources to the Project.

3.4.11.3.2 Alternative D Mitigation Measures

No mitigation measures required under Alternative D.

3.4.11.3.3 Alternative D Significance After Mitigation

There would be no change in existing conditions and no impacts under Alternative D.

3.4.11.3.4 Alternative D Cumulative Impacts

Alternative D would have no impact on energy or mineral resources and would not directly or indirectly induce growth in the Project area or the region. Alternative D would not result in a cumulatively substantial increase in the long-term use of energy and would not use energy in a wasteful or inefficient manner. As a result, there would be no contribution to cumulative impacts to energy and mineral resources.

3.4.11.4 Environmentally Superior Alternative

Of the build alternatives, the Proposed Project would require the least amount of concrete, thus requiring the least amount of energy and mineral resources. Therefore, the Proposed Project us the environmentally superior alternative.

3.4.12 Noise

The following section analyzes the potential noise impacts associated with Project alternatives. The existing noise environment in the CVSC planning area varies substantially during the day and evening hours, and is affected by several major noise sources, including roadway traffic on State Highways 111 and 86 and Airport Boulevard, and from rail traffic on the two Union Pacific Railroad lines that pass through the planning area.

An additional source of noise is aircraft operations at the Jacqueline Cochran Regional Airport where the closest runway is approximately 1.3 miles to the west. The airport is under the jurisdiction of the County's Airport Land Use Commission, which has adopted standards for acceptable community noise levels associated with aircraft noise. For sensitive land uses, including parks and playgrounds, "clearly acceptable" exterior noise levels are those below 55 dBA CNEL, "normally acceptable exterior noise levels are up to 65 dBA CNEL, and "marginally acceptable" exterior noise levels are those between 65 to 70 dBA CNEL due to aircraft noise. The Project area is located outside the airport's 60 and 65 dB CNEL boundaries.

Rail (primarily freight) traffic on the Union Pacific lines that pass through the planning area can be expected to generate a 60 L_{dn} dBA noise contour 2,200 feet to 3,600 feet from these lines. While rail traffic fluctuates with the times of the year and regional economic activity, on average of 50 to 60 freight trains pass through daily. The existing CNEL noise levels measured at 100 feet from the road centerline and associated with planning area roadway traffic is expected to range from 52.5 CNEL dBA to 65.7 CNEL dBA.[29] [30]

Please see Section 2.14.4 and 2.14.5 for detailed discussion of the existing noise conditions in the Project area.

3.4.12.1 Alternative B: "Fully-Lined Channel"

3.4.12.1.1 Alternative B Impacts

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

Less than Significant with Mitigation. Similar to the Proposed Project, construction of Alternative B would require the use of heavy equipment that would, during the construction period of one year, temporarily increase noise levels along the Project alignment until Project completion. A variety of construction activities are necessary for the different project components.

The same sensitive receptors affected by the Proposed Project would be affected by Alternative B construction noise. The closest residences (mobile home park at Airport Boulevard and the CVSC) are located within 50 feet of the Project construction area and would be subjected to occasional intrusive noise levels. However, as construction activities move away from sensitive receptors so too will levels of construction noise.

Based on *Table 2-19: Typical Construction Equipment and Associated Noise Levels* in Section 2.14.6, noise levels could occasionally reach 74 to 85 dBA at 50 feet from the noise source, depending on equipment and machinery used at a given time. Vibration plate compactors may also be required to ensure adequate soils compaction, and while compactors may generate the highest noise levels they will occur exclusively within the channel and will be separated from sensitive receptors by intervening terrain in most cases.

[29] "City of La Quinta General Plan Update Noise Element Technical Report" prepared by Urban Crossroads, Inc. June 2011.

[30] "2014 Traffic Volumes on California State Highways", Caltrans 2015

Most construction activities will take place within the channel and at a distance from sensitive receptors, with the exception of those portions of the Project near Airport Boulevard and the aforementioned mobile home park at this location. Another 13-unit mobile home park is also located in the planning area on south Desert Cactus Drive but its closest approach to the construction area is 470± feet, well outside the potential construction noise impact zone. No other sensitive receptors have been identified within the potential Project construction noise impact zone [the construction zone is generally limited to a few hundred feet and will differ based on equipment used on-site].

Construction of Alternative B will be limited to the same permitted construction hours as the Proposed Project, which will limit the exposure of residences during sensitive hours[31]. In addition, Alternative B will adhere to the same mitigation measures set forth in Section 2.14.7 for the Proposed Project. These additional measures will ensure that work is conducted during normal working hours (except in an emergency), construction equipment is equipped with adequate mufflers or with manufacture's standard noise control devices, and haul truck traffic is limited to the hours of construction. For these reasons and with implementation of the mitigation set forth in Section 2.14.7, this impact is considered less than significant.

Utility Projects
The Project-related utility relocations are of two types, the first involves using conventional augers to excavate foundation holes for power and guy poles. The second involves the use of horizonal drill equipment to bore holes for an 8-inch natural gas line and for the 72-inch casing for the subject irrigation lateral. The potential noise impacts associated with these two project types are described in detail in Section 2.14.6.a. Given the temporary nature of the relocation construction activities and distance to the nearest residences in relation to the relocation sites, noise impacts will be less than significant.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

Potentially Significant and Unavoidable. Construction of Alternative B will use similar construction equipment, including roller compactors, which will result in periods of occasionally intrusive ground vibrations during earthwork activities and soil compaction in proximity to sensitive receptors. As a result, it is expected that ground-borne vibration from construction would cause intermittent, localized intrusion but temporary impacts lasting up to several days in a given location will quickly diminish with distance.

A vibration analysis was prepared for the Proposed Project and is discussed in Section 2.14.6, Table 2-21, demonstrating that use of certain construction equipment will exceed the vibration standard of 0.01 in/sec PPV at receiver locations within 100 feet of plate compactors and large bulldozers during construction, and also for this reason the use of large bulldozers within 100 feet of nearby sensitive residential land uses would generate a significant, albeit short-term, impact. Alternative B will require the use of similar construction equipment; therefore, impacts associated with ground borne vibration will be the same as the Proposed Project.

Mitigation measures N-1 and N-4 are provided in Section 2.14.7 to reduce construction vibration levels to the greatest extent possible; however, plate and other compactors, and large bulldozers will operate within proximity to residences. As a result, impacts associated with groundborne vibration during construction will remain significant and unavoidable.

[31] Between October 1st and April 30th, construction is permitted Monday through Friday from 6:00 am to 5:30 pm, and Saturday, Sunday, and Holidays from 8:00 am to 5:00 pm. Between May 1st and September 30th, construction is permitted Monday through Friday from 5:00 am to 7:00 pm, and Saturday, Sunday, and Holidays from 8:00 am to 5:00 pm.

Utility Projects
The Project-related utility relocations are of two types, the first involves using conventional augers to excavate foundation holes for power and guy poles. The second involves the use of horizonal directional drill equipment to bore holes for an 8-inch natural gas line and for the 72-inch casing for the subject irrigation lateral. Neither the auger nor the horizontal directional drill operations generate significant ground vibration. Therefore, these activities, which will be of temporary and short duration, will not expose sensitive receptors to or generation of excessive groundborne vibration or groundborne noise levels.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

No Impact. Alternative B will not result in permanent increases in ambient noise levels in the Project vicinity. Long-term maintenance will be limited to periodic inspections and occasional repairs of the levees and service roads that will be short-lived. Otherwise, Alternative B will generate no new permanent noise, and no adverse long-term impacts will occur.

Utility Projects
The utility relocation projects will not result in permanent increases in ambient noise levels in the project vicinity. Long-term maintenance will be limited to periodic inspections by IID, SCG and CVWD personnel. Otherwise, the Project will generate no new permanent noise, and no adverse impacts will occur.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

Less than Significant with Mitigation. Alternative B construction will temporarily increase ambient noise levels in the vicinity due to the presence and operation of a wide variety of construction equipment and construction traffic. Noise generating construction activities will include construction staging, materials delivery, incremental grading, site watering, excavation, soil compaction, placement of reinforcing steel, pouring of concrete and final grading.

These construction operations will result in occasional high, intrusive noise levels at nearby sensitive receiver receptors. However, construction activity will progress from upstream, will be of relatively short duration, and will fall below acceptable as construction progresses downstream These impacts will be short-term and will not represent a long-term perceptible increase in noise levels surrounding the project area. The mitigation measures set forth in Section 2.14.7 shall be implemented to reduce the impacts to the greatest extent practicable.

Utility Projects
As discussed in Section 2.14.6.d, the utility facility relocation projects would result in a temporary increase in noise levels during daytime construction hours. Due to the temporary nature of the relocation construction activities and distance to the nearest residences in relation to the relocation sites, noise impacts will be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels;

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact (e and f). Jacqueline Cochran Regional Airport is a county-owned, public use airport located 1.25 miles west of the Project area. The Project area does not lie within the sensitive noise contours (<60 dBA CNEL) of the Jacqueline Cochrane Regional Airport so there will be no impact.[32] Alternative B will not expose people working in the Project area to excessive noise levels generated by operations at the regional airport. No mitigation is required.

Utility Projects
The project area does not lie within the sensitive noise contours (<60 dBA CNEL) of the Jacqueline Cochrane Regional Airport so there will be no impact.[33] The project will not expose people working in the project area to excessive noise levels generated by operations at the regional airport. No mitigation is required.

3.4.12.1.2 Alternative B Mitigation Measures

Alternative B will adhere to the same mitigation measures as the Proposed Project provided in Section 2.14.7. With the mitigation measures, construction-related vibration and other noise impacts at nearby sensitive receiver locations will be greatly reduced but will still exceed acceptable limits and impacts will be potentially significant and practicably cannot be further mitigable.

The impacts to the closest sensitive receivers are unlikely to be sustained during the entire construction period, but will occur rather only during the times that construction activities are scheduled in proximity to these sensitive receptors. Construction will be restricted to daytime hours consistent with local jurisdiction, thereby eliminating potential vibration and other potential noise impacts during the sensitive nighttime hours. With the implementation of mitigation measures, construction and operational noise impacts will be less than significant; however there will be significant and unavoidable impacts from groundborne vibrations along the Project alignment.

3.4.12.1.3 Alternative B Significance After Mitigation

Similar to the Proposed Project, the construction of Alternative B may create substantial short-term noise increases and cause perceptible vibration if large bulldozers and/or compactors are used in proximity to sensitive uses along the channel. Implementation of the mitigation measures detailed above would reduce noise impacts during construction to the extent practicable by requiring that activities be limited to the hours of the local municipal codes. However, applicable regulations exempt construction activities from certain community noise standards[34] [35]. During the least sensitive time of the day construction noise levels will exceed local jurisdiction standards at locations immediately adjacent to sensitive receptors along the channel.

There is no feasible mitigation for these short-term but occasionally impacting noise levels because certain equipment must be used and therefore the impact cannot be avoided. Construction noise will be significant and unavoidable.

3.4.12.1.4 Alternative B Cumulative Impacts

32 Exhibit IV-1-City of La Quinta General Plan.
33 Ibid.
34 Section 7.04.070 of the Coachella Municipal Code (CMC) specifically exempts noise sources associated with construction and related activities, provided that such activities take place during daytime hours.
35 County Noise Ordinance No. 847.

Alternative B improvements are expected to operate at noise levels that are essentially the same as current conditions, primarily maintenance activities. During construction, the noise sources will be mobile and will come and go as construction moves down the channel. In most cases, unmitigated noise levels will not exceed 65 dBA Leq at 25 feet from the Project planning area for any sensitive receptor except within the allowable hours of 7 a.m. and 5 p.m. for construction-related noise, which would be within the site boundaries of the Project planning area. The exception is noise and ground vibration associated with construction activities in proximity to residences, where impacts may be significant even with mitigation.

Alternative B will not result in a permanent stationary noise sources, and operational noise levels would not exceed city or county standards for sensitive receptors, nor would they result in substantial permanent increases in ambient noise levels in the project vicinity above levels existing without the project. Noise generated from maintenance and operation of the channel will be infrequent and transient in nature, and will not exposed sensitive receptors for a substantial amount of time. Therefore, noise impacts associated with operation of Alternative B would not be cumulatively considerable.

3.4.12.2 Alternative C: "Slope Lining and Channel Widening"

3.4.12.2.1 Alternative C Impacts

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

Less than Significant with Mitigation. Similar to the Proposed Project, construction of Alternative C would require the use of heavy equipment that would temporarily increase noise levels at properties near the work sites. A variety of construction activities are necessary for the different project components.

Construction of Alternative C will result in noise impacts to sensitive receptors. The closest residences (mobilehome park at Airport Boulevard and the channel and residences located south of Desert Cactus Drive west of Church Street) are located within 25-50 ft of the Project construction areas. Based on *Table 2-19: Typical Construction Equipment and Associated Noise Levels* in Section 2.14.6, noise levels could occasionally reach decibels in the 74 to 85 dBA at 50 feet from the noise source, depending on equipment and machinery used at a given time. Vibration plate compactors may also be required to ensure adequate soils compaction, and while compactors may generate the highest noise levels they will occur exclusively within the channel and will be separated from sensitive receptors by intervening terrain in most cases.

Construction of Alternative C will occur during and will be limited to the same permitted daytime construction hours as the Proposed Project. In addition, Alternative C will adhere to the same mitigation measure, set forth in Section 2.14.7, as the Proposed Project. These additional mitigation measures will ensure that work is conducted during normal working hours (except in an emergency), construction equipment is equipped with adequate mufflers or with manufacture's standard noise control devices, and haul truck traffic is limited to the hours of construction. For these reasons and with implementation of the mitigation set forth in Section 2.14.7, this impact is considered less than significant.

Utility Projects
The Project-related utility relocations are of two types, the first involves using conventional augers to excavate foundation holes for power and guy poles. The second involves the use of horizonal drill equipment to bore holes for an 8-inch natural gas line and for the 72-inch casing for the subject irrigation lateral. The potential noise impacts associated with these two project types are described in detail in Section 2.14.6.a. Given the temporary nature of the utility relocation activities and distance to the nearest residences in relation to the relocation sites, noise impacts will be less than significant.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

Potentially Significant and Unavoidable. Construction of Alternative C will use similar construction equipment, including roller compactors, which will result in periods of occasionally intrusive ground vibrations during earthwork activities and soil compaction in proximity to sensitive receptors. As a result, it is expected that ground-borne vibration from construction would cause intermittent, localized intrusion but temporary impacts, which will quickly diminish with distance.

A vibration analysis was prepared for the Proposed Project in Section 2.14.6, Table 2-21, demonstrating that use of certain construction equipment will exceed the vibration standard of 0.01 in/sec PPV at receiver locations within 100 feet of plate compactors and large bulldozers during construction, and use of large bulldozers within 100 feet of nearby sensitive residential land uses would be a significant impact. Alternative C will require the use of similar construction equipment; therefore, impacts associated with ground borne vibration will be the same as the Proposed Project.

Mitigation measures N-1 and N-4 are provided in Section 2.14.7 to reduce construction vibration levels to the greatest extent possible; however, plate and other compactors, and large bulldozers will operate within proximity to residences. As a result, impacts associated with groundborne vibration during construction will remain significant and unavoidable.

Utility Projects
The Project-related utility relocations are of two types, the first involves using conventional augers to excavate foundation holes for power and guy poles. The second involves the use of horizonal directional drill equipment to bore holes for an 8-inch natural gas line and for the 72-inch casing for the subject irrigation lateral. Neither the auger nor the horizontal directional drill operations generate significant ground vibration. Therefore, these activities, which will be of temporary and short duration, will not expose sensitive receptors to or the generation of excessive groundborne vibration or groundborne noise levels.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

No Impact. Alternative C will not result in permanent increases in ambient noise levels in the Project vicinity. Long-term maintenance will be limited to periodic inspections and occasional repairs of the levees and service roads that will be short-lived. Otherwise, Alternative C will generate no new permanent noise, and no adverse impacts will occur.

Utility Projects
The utility relocation projects will not result in permanent increases in ambient noise levels in the project vicinity. Long-term maintenance will be limited to periodic and infrequent inspections by SCG and IID personnel. Otherwise, the Project utility relocation projects will generate no new permanent noise, and no adverse impacts will occur.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

Less than Significant with Mitigation. Alternative C construction will temporarily increase ambient noise levels in the vicinity due to the presence and operation of a wide variety of construction equipment and construction traffic. Noise generating construction activities will include construction staging, incremental grading, site watering, excavation, soil compaction, placement of reinforcing steel, pouring of concrete and final grading.

These construction operations will result in occasional high, intrusive noise levels at nearby sensitive receptors. However, construction activity will progress from upstream, will be of relatively short duration, and noise levels will fall below acceptable as construction progresses downstream These impacts will be short-term and will not represent a long-term perceptible increase in noise levels surrounding the project area. The mitigation measures set forth in Section 2.14.7 shall be implemented to reduce the impacts to the greatest extent practicable.

Utility Projects
As discussed in Section 2.14.6.d, the utility facility relocation projects would result in a temporary increase in noise levels during daytime construction hours. Due to the temporary nature of the relocation construction activities and distance to the nearest residences in relation to the relocation sites, noise impacts will be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels;

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact (e and f). Jacqueline Cochran Regional Airport is a county-owned, public use airport located 1.2± miles west of the Project area. The Project area does not lie within the sensitive noise contours (<60 dBA CNEL) of the Jacqueline Cochrane Regional Airport so there will be no impact.[36] Alternative C will not expose people working in the Project area to excessive noise levels generated by operations at the regional airport. No mitigation is required.

Utility Projects
The project area does not lie within the sensitive noise contours (<60 dBA CNEL) of the Jacqueline Cochrane Regional Airport so there will be no impact.[37] The project will not expose people working in the project area to excessive noise levels generated by operations at the regional airport. No mitigation is required.

3.4.12.2.2 Alternative C Mitigation Measures

Alternative C will adhere to the same avoidance, minimization and mitigation measures as the Proposed Project provided in Section 2.14.7. With these measures, construction-related vibration and other noise impacts at nearby sensitive receiver locations will be greatly reduced but will still exceed acceptable limits; impacts will be significant and practicably cannot be further mitigable. The impacts to the closest sensitive receivers are unlikely to be sustained during the entire construction period, but rather will occur only during the times of construction in proximity to these sensitive receptors. Construction will be restricted to the least sensitive daytime hours consistent with local jurisdiction, thereby eliminating potential vibration and other potential noise impacts during the sensitive nighttime hours. With the implementation of these mitigation and minimization measures, construction and operational noise impacts will be less than significant for most but not for all sensitive receptors.

[36] Exhibit IV-1-City of La Quinta General Plan.
[37] Ibid.

3.4.12.2.3 Alternative C Significance After Mitigation

Operation of the improved channel under Alternative C will not exceed noise standards, and impacts will be less than significant. However, similar to the Proposed Project, the construction of Alternative C may create substantial short-term noise increases, and cause perceptible vibration if large bulldozers and/or compactors are used in proximity to sensitive uses along the channel. Implementation of the mitigation measures detailed above would reduce noise impacts during construction to the extent practicable by requiring that activities be limited to the hours of the local municipal codes. However, although construction hours exempt construction activities from noise standards, noise levels during construction will exceed local jurisdiction standards at locations immediately adjacent to sensitive receptors along the channel. There is no feasible mitigation for these short-term but occasionally impacting noise levels, and construction noise will be significant and unavoidable.

3.4.12.2.4 Alternative C Cumulative Impacts

Alternative C improvements are expected to operate at noise levels that are essentially the same as current conditions. During construction, the noise sources will be mobile and will come and go as construction moves down the channel. In most cases, unmitigated noise levels will not exceed 65 dBA Leq at 25 feet from the Project planning area for any sensitive receptor except within the allowable hours of 7 a.m. and 5 p.m. for construction-related noise, which would be within the site boundaries of the Project planning area. The exception is groundborne vibration associated with construction activities in proximity to residences, where impacts may be significant even with mitigation.

Alternative C will not result in a permanent stationary noise sources and operational noise levels would not exceed city or county standards for sensitive receptors, nor would they result in substantial permanent increases in ambient noise levels in the Project vicinity above levels existing without the Project. Noise generated from maintenance and operation of the channel will be infrequent and transient in nature, and will not exposed sensitive receptors for a substantial amount of time. Therefore, noise impacts associated with operation of Alternative C would not be cumulatively considerable.

3.4.12.3 Alternative D: "No Project" Alternative

3.4.12.3.1 Alternative D Impacts

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

No Impact. Under this alternative no changes are proposed. The public will not be subjected to an increase in noise generation.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

No Impact. Under this alternative no changes are proposed. The public will not be subjected to an increase in groundborne vibration or noise levels.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

No Impact. There will be no change under Alternative D and conditions will remain the same. There will be no permanent increase to ambient noise levels in the Project vicinity.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

No Impact. There will be no change under Alternative D and conditions will remain the same. There will be no temporary increase to ambient noise levels in the Project vicinity.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels;

No Impact. There will be no proposed change under Alternative D and conditions will remain the same. There would be no impact to the airport land use plan.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There will be no proposed change under Alternative D and conditions will remain the same. There would be no impact to people residing or working in the Project area.

3.4.12.3.2 Alternative D Mitigation Measures

Since no construction would occur, no mitigation measures would be necessary.

3.4.12.3.3 Alternative D Significance After Mitigation

Since no construction would occur, there would be no noise impacts associated with Alternative D.

3.4.12.3.4 Alternative D Cumulative Impacts

As described above, Alternative D would have no impacts associated with noise and vibration during both construction and operations given that no change is proposed. Therefore, Alternative D will not contribute to cumulative impacts associated with noise.

3.4.12.4 Environmentally Superior Alternative

All three build alternatives would result in the same significant and unavoidable noise impacts as they relate to ground borne vibrations. There is no environmentally superior alterative as impacts in relation to sensitive receptors at the north end of the Project area would be the same.

3.4.13 Population, Housing and Socio-Economic Resources

The following section analyzes the potential population, housing and socio-economic impacts associated with the CVSC Improvement Project alternatives.

The area surrounding the Project site is comprised of incorporated areas of the City of Coachella and the unincorporated community of Thermal. Currently (2018), the estimated population of the City of Coachella is approximately 45,407.[38]

[38] California Department of Finance- Demographic Research Unit, Population Estimates for Cities, Counties, and the State. January 2015 and 2016 (Report E-1).

The 2016 population of Thermal was approximately 3,634.[39] In 2016, the average household size in Coachella was 4.43 and in Thermal was 3.58.[40]

In the east Coachella Valley, the County projects that the unincorporated area population will increase from 32,454 in Year 2010 to 89,606 by Year 2020 and 206,313 by the Year 2035.[41] According to Riverside County and as indicated in the population projections above, the east Coachella Valley is expected to grow at a substantial rate in the next two decades. The County projects that the unincorporated area housing will increase from 7,363 units in Year 2010 to 22,971 units by Year 2020, and 55,286 units by the Year 2035.[42] Most of the new housing in the Project area is expected to be built in Coachella.

Please see Section 2.15.4 and 2.15.5 for detailed discussion of the existing mineral and energy conditions in the Project area.

3.4.13.1 Alternative B: "Fully-Lined Channel"

3.4.13.1.1 Alternative B Impacts

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. Alternative B consists of improving the subject reach of the CVSC to eliminate the 100-Year flood threat that currently exists. The Project is not expected to directly induce new development or population growth, but will ensure that current and future development is protected from the 100-year flooding threat. No impact is anticipated.

Utility Projects
None of the utility relocation projects will directly or indirectly induce new development or population growth. No new supplies of irrigation water, electrical power or natural gas will be generated by these utility relocation projects. There will be no impacts.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact (b and c). The Project area includes single-family residences and mobile home parks (approximately 33 dwelling units) that are located adjacent and in proximity (25-50 feet) to the channel improvement construction site. Alternative B's design will avoid physical disturbance to these residences, which will remain occupiable during Project construction and following Project completion.

[39] Dept. of Finance did not report a 2016 population estimate for Thermal. An estimate is provided here using the lowest positive growth rate of the surrounding communities (1.8%) to provide a conservative estimate. Basis: 2010 U.S. Census and 2010-2014 American Community Survey 5-Year Estimates.
[40] Ibid.
[41] Riverside County General Plan 2015, Appendix F-1: Population and Employment Forecast, Table 6. 2015.
[42] Ibid.

No residences will be displaced as a result of Alternative B. A few will be impacted by noise and ground vibration during temporary periods of channel construction in the immediate vicinity. These impacts will be limited to the least sensitive times of the day (daytime hours), will be intermittent and will only occur when activity is in proximity, and are temporary and will end once the subject improvements are completed. Alternative B will eliminate the existing 100-Year flooding threat, which could potentially result in loss of life and property in the Project's area of benefit. Alternative B will not displace a substantial number of persons or homes that would require the construction of replacement housing.

Utility Projects
The project planning area includes single-family residences and mobile homes that are located adjacent or in proximity to the utility relocation sites. These include mobile homes that actually encroach into CVWD rights-of-way just south of Airport Boulevard, near where one new IID power pole will be located. Nonetheless, the new power pole will avoid these residences, which should remain occupiable during and following project completion. The utility relocation projects will not displace persons or houses, nor will it require the construction of replacement housing.

3.4.13.1.2 Alternative B Mitigation Measures

Alternative B will not have a significant adverse effect on area or regional population, housing or socio-economic conditions.

3.4.13.1.3 Alternative B Significance After Mitigation

Alternative B will not have a significant adverse effect on area or regional population, housing or socio-economic conditions.

3.4.13.1.4 Alternative B Cumulative Impacts

Implementation of Alternative B will not increase the local population or increase demand for housing or socio-economic resources. This Alternative would have a cumulatively considerable beneficial effect by removing the identified flooding threat that currently exists along the stormwater conveyance channel.

3.4.13.2 Alternative C: "Slope Lining and Channel Widening"

3.4.13.2.1 Alternative C Impacts

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. Alternative C consists of improving the subject reach of the CVSC, including widening portions of the reach to the east, to eliminate the 100-Year flood threat that currently exists. The Project is not expected to directly induce new development or population growth, but will ensure that current and future development is protected from the 100-year flooding threat. No substantial growth-inducement or related impacts are anticipated from implementation of Alternative C.

Utility Projects
None of the utility relocation projects will directly or indirectly induce new development or population growth. No new supplies of irrigation water, electrical power or natural gas will be generated by these utility relocation projects. There will be no impacts.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact (b and c). The Project area includes single-family residences and mobile homes (approximately 33 units) that are located adjacent and in proximity to the channel improvement construction site. Alternative C's design will avoid these residences, which should remain occupiable during Project construction and following Project completion.

No adjacent or nearby residence or resident will be displaced. A few will be impacted by noise and ground vibration during short periods of channel construction in their immediate vicinity. Due to the widening of the channel, Alternative C has the potential to expose more residences to construction related noise impacts. These impacts will be limited to the least sensitive times of the day, will be intermittent and will only occur when construction activity is in proximity to these homes; finally, impacts are temporary and will end once the subject improvements are completed.

Alternative C will eliminate the existing 100-Year flooding threat, which could damage or destroy these and other homes in the Project's area of benefit. Alternative C will not displace a substantial number of person or houses requiring the construction of replacement housing.

Utility Projects
The project planning area includes single-family residences and mobile homes that are located adjacent or in proximity to the utility relocation sites. These include mobile homes that actually encroach into CVWD rights-of-way just south of Airport Boulevard, near where one new IID power pole will be located. Nonetheless, the new power pole will avoid these residences, which should remain occupiable during and following project completion. The utility relocation projects will not displace persons or houses, nor will it require the construction of replacement housing.

3.4.13.2.2 Alternative C Mitigation Measures

Alternative C will not have a significant adverse effect on area or regional population, housing or socio-economic conditions.

3.4.13.2.3 Alternative C Significance After Mitigation

Alternative C will not have a significant adverse effect on area or regional population, housing or socio-economic conditions.

3.4.13.2.4 Alternative C Cumulative Impacts

Implementation of Alternative C will not increase the local population or increase demand for housing or socio-economic resources. This Alternative would have a cumulatively considerable beneficial effect by removing the identified flooding threat.

3.4.13.3 Alternative D: "No Project" Alternative

3.4.13.3.1 Alternative D Impacts

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. Alternative D will have no direct impact on housing or population. Existing housing and population conditions and trends would continue. Alternative D will result in no growth inducing impacts.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. Under Alternative D, existing housing trends and conditions will continue. No housing will be displaced.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. Under Alternative D, no people will be displaced. Population and housing conditions will continue under existing conditions and trends.

3.4.13.3.2 Alternative D Mitigation Measures

No significant impacts will occur. Therefore, no mitigation measures are required.

3.4.13.3.3 Alternative D Significance After Mitigation

No mitigation is required, so no population or housing impacts will occur.

3.4.13.3.4 Alternative D Cumulative Impacts

Alternative D will not result in cumulative impacts because there will be no change to the current population and housing trends.

3.4.13.4 Environmentally Superior Alternative

None of the three build alternatives would result in significant impacts to population and housing. All three alternatives are virtually the same in that regard and, therefore, there is no environmentally superior alternative.

3.4.14 Public Services

The following section analyzes the potential public service impacts associated with the CVSC Improvement Project alternatives.

Fire Protection
The Riverside County Fire Department provides fire protection and emergency services in unincorporated Riverside County, including the Project site, and provides contract fire protection services to the City of Coachella.

Police Protection
The Riverside County Sheriff's Department provides police protection in the Project area, including the City of Coachella and unincorporated lands.

Schools
The Coachella Valley Unified School District provides public K-12 school services in the Project area. The closest school, John Kelley Elementary, is located approximately 0.33 miles west of the subject reach of the CVSC.

Libraries
The principal provider of library services in the Coachella Valley is the Riverside County Library System, a network of public libraries serving Riverside County, which includes a library location in Coachella, approximately 2.0 miles from the Project planning area.

Parks
Riverside County owns and maintains a wide range of parks and community facilities in the Project area, the closest being the Thermal Ball Park located on Olive Street in Thermal, approximately 0.25 miles west of the Project planning area.

Other Public Facilities
In the Project area, Imperial Irrigation District provides electricity, and Verizon provides telephone and digital communication services. No natural gas services are provided in the Project area. The Thermal US Post Office is located approximately 0.25 miles west of the planning area at 87200 Airport Boulevard.

Please see Section 2.16.4 and 2.16.5 for detailed discussion of the existing mineral and energy conditions in the Project area.

3.4.14.1 Alternative B: "Fully-Lined Channel"

3.4.14.1.1 Alternative B Impacts

a) The project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- ***Fire Protection***
- ***Police Protection***
- ***Schools***
- ***Parks***
- ***Other Public Facilities***

Less than Significant.
Fire Protection Services
Similar to the Proposed Project, Alternative B will require an approved Construction Traffic Control Plan to minimize potential traffic impacts during construction and assures that mobility and accessibility in the Project area are maintained to the greatest extent practicable. Therefore, Alternative B would not adversely affect the provision of fire protection services or result in the need for new or physically altered facilities. Alternative B will have a less than significant impact on fire protection services.

Less than Significant.

Police Protection Services

As discussed above, construction Traffic Control Plan will be implemented to minimize potential traffic impacts during construction and assures that mobility and accessibility in the Project area are maintained to the greatest extent practicable. Therefore, Alternative B would not adversely affect the provision of police protection services or result in the need for new or physically altered facilities; therefore, it will have a less than significant impact on police protection services.

No Impact.

Schools

Alternative B does not include the construction of residential units or habitable structures and would not result in a permanent increase in the local population and would not result in substantial increases in the demand for school services. Therefore, it would not require the provision of new or additional school facilities, nor would it affect the enrollment or capacity of the schools within the Project area. No Project-related impacts would occur to public school services.

No Impact.

Parks/Other Public Facilities

Alternative B would not result in any land development or population increase that could generate increased demand for parks or any other public services. Therefore, no impact to public services is anticipated.

Utility Projects

None of the utility relocation projects would result in any land development or population increase that could generate increased demand for public services. Staging areas, including equipment storage areas, will be secured and will not generate a significant demand for additional police or fire services. As discussed in Section 2.18, a Construction Traffic Control Plan will be implemented to minimize potential traffic impacts during construction and assures that mobility and accessibility in the project area are maintained to the greatest extent practicable. Public utilities and agricultural irrigation will not be expanded but will be upgraded with new facilities.

3.4.14.1.2 Alternative B Mitigation Measures

No significant impacts will occur. Therefore, no mitigation measures are required.

3.4.14.1.3 Alternative B Significance After Mitigation

No mitigation is required, so no public service impacts will occur.

3.4.14.1.4 Alternative B Cumulative Impacts

Construction of Alternative B could conceivably require fire and/or police protection and emergency medical services in case of emergencies, theft or vandalism. However, that demand would not result in a need for expansion of fire, police or other public services or facilities. Therefore, Alternative B will not have a considerable cumulative contribution to impacts or demand for public services.

3.4.14.2 Alternative C: "Slope Lining and Channel Widening"

3.4.14.2.1 Alternative C Impacts

a) The project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- ***Fire Protection***
- ***Police Protection***
- ***Schools***
- ***Parks***
- ***Other Public Facilities***

Less than Significant.

Fire Protection Services

Similar to the Proposed Project, Alternative C will require a Construction Traffic Control Plan to minimize potential traffic impacts during construction and assures that mobility and accessibility in the Project area are maintained to the greatest extent practicable. Therefore, Alternative C would not adversely affect the provision of fire protection services or result in the need for new or physically altered facilities. Alternative C will have a less than significant impact on fire protection services.

Less than Significant.

Police Protection Services

As discussed above, construction Traffic Control Plan will be implemented to minimize potential traffic impacts during construction and assures that mobility and accessibility in the Project area are maintained to the greatest extent practicable. Therefore, Alternative C would not adversely affect the provision of police protection services or result in the need for new or physically altered facilities; therefore, it will have a less than significant impact on police protection services.

No Impact.

Schools

Alternative C does not include any residential units or habitable structures and would not result in a permanent increase in the local population and would not result in substantial increases in the demand for school services. Therefore, it would not require the provision of new or additional school facilities, nor would it affect the enrollment or capacity of the schools within the Project area. No Project-related impacts would occur to public school services.

No Impact.

Parks/Other Public Facilities

Alternative C would not result in any land development or population increase that could generate increased demand for parks or any other public services. Therefore, no impact to public services is anticipated.

Utility Projects

None of the utility relocation projects would result in any land development or population increase that could generate increased demand for public services. Staging areas, including equipment storage areas, will be secured and will not generate a significant demand for additional police or fire services. As discussed in Section 2.18, a Construction Traffic Control Plan will be implemented to minimize potential traffic impacts during construction and assures that mobility and accessibility in the project area are maintained to the greatest extent practicable. Public utilities and agricultural irrigation will not be expanded but will be upgraded with new facilities.

3.4.14.2.2 Alternative C Mitigation Measures

No significant impacts will occur. Therefore, no mitigation measures are required.

3.4.14.2.3 Alternative C Significance After Mitigation

No mitigation is required, so no public service impacts will occur.

3.4.14.2.4 Alternative C Cumulative Impacts

Construction of Alternative C could conceivably require fire and/or police protection and emergency medical services in case of emergencies, theft or vandalism. However, that demand would not result in a need for expansion of fire, police or other public services or facilities. Therefore, Alternative C will not have a considerable cumulative contribution to impacts or demand for public services.

3.4.14.3 Alternative D: "No Project" Alternative

3.4.14.3.1 Alternative D Impacts

a) The project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- ***Fire Protection***
- ***Police Protection***
- ***Schools***
- ***Parks***
- ***Other Public Facilities***

No Impact. Alternative D will result in the continuation of existing conditions. There would be no additional population increase or demand for fire services, police services, schools, parks, or other public facilities.

3.4.14.3.2 Alternative D Mitigation Measures

No significant impacts will occur. Therefore, no mitigation measures are required.

3.4.14.3.3 Alternative D Significance After Mitigation

There will be no impacts to public services under this alternative

3.4.14.3.4 Alternative D Cumulative Impacts

Alternative D will have no cumulative impacts.

3.4.14.4 Environmentally Superior Alternative

All three build alternatives would require the same level of emergency services and will have no impact on schools or parks. Therefore, all build alternatives are virtually the same and there is no environmentally superior alternative.

3.4.15 Recreational Resources

The following section analyzes the potential recreational impacts associated with Project alternatives. Riverside County owns and maintains a wide range of parks and community facilities in the Project area, the closest being the Thermal Ball Park located on Olive Street in Thermal, approximately 0.42 miles west of the Project planning area. The City of Coachella has nine public parks[43], including two pocket parks, none of which are located in proximity of the Project. The Riverside County East Area Plan of the Comprehensive General Plan calls for several trails and bike paths in the Project planning area, including a regional trail along both sides of the stormwater channel, along Airport Boulevard, Avenue 58, and Fillmore Street. None of these facilities have been constructed.

In 2017, CVAG approved the CV Link Multi-modal Transportation Project which includes a recreational path along the west (right) bank of the channel and along the northern portion of the Project area from Avenue 54 south to Airport Boulevard. The 20±-foot wide CV Link path will be constructed atop the channel service road. It is uncertain when this segment of CV Link will be constructed but is expected to follow the subject channel improvements associated with the Project. CVWD will continue to coordinate with CVAG for the final design, location, construction, and operation of the CV Link Project.

Please see Section 2.17.4 and 2.17.5 for detailed discussion of the existing recreational setting conditions in the Project area.

3.4.15.1 Alternative B: "Fully-Lined Channel"

3.4.15.1.1 Alternative B Impacts

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

No Impact (a and b). Similar to the Proposed Project, Alternative B will not have a direct or indirect adverse impact on community parks and/or open space areas. There are no parks or recreational facilities in the immediate vicinity, and future facilities such as CV Link will be enhanced by the Project. Alternative B would not increase the use of existing neighborhood or regional parks or other recreational facilities, nor will it require the construction or expansion of recreational facilities. No adverse impacts, including increased use, to neighborhood or regional parks, other recreational are anticipated.

Utility Projects
The proposed utility relocation projects will not increase the use of existing neighborhood or regional parks or other recreational facilities, will not affect access to such facilities, and will not require the construction or expansion of recreational facilities. No impacts would occur.

3.4.15.1.2 Alternative B Mitigation Measures

No significant impacts would occur, therefore mitigation measures are not required.

3.4.15.1.3 Alternative B Significance After Mitigation

No mitigation is required, so no recreational impacts will occur.

[43] City of Coachella General Plan, Figure 3-8: Park Service Area. 2015.

3.4.15.1.4 Alternative B Cumulative Impacts

The proposed improvements to the CVSC could not increase demand or the need for additional facilities nor will it require the construction or expansion of recreational facilities. The effect of this Project on recreational resources is not cumulatively considerable.

3.4.15.2 Alternative C: "Slope Lining and Channel Widening"

3.4.15.2.1 Alternative C Impacts

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

No Impact (a and b). Similar to the Proposed Project, Alternative C will not have a direct or indirect adverse impact on community parks and/or open space areas. There are no parks or recreational facilities in the immediate vicinity, the Project would not increase the use of existing neighborhood or regional parks or other recreational facilities, nor will it require the construction or expansion of recreational facilities. No adverse impacts, including increased use, to neighborhood or regional parks, other recreational are anticipated.

Utility Projects
The proposed utility relocation projects will not increase the use of existing neighborhood or regional parks or other recreational facilities, will not affect access to such facilities, and will not require the construction or expansion of recreational facilities. No impacts would occur.

3.4.15.2.2 Alternative C Mitigation Measures

No significant impacts would occur; therefore, mitigation measures are not required.

3.4.15.2.3 Alternative C Significance After Mitigation

No mitigation is required; no recreational impacts will occur.

3.4.15.2.4 Alternative C Cumulative Impacts

The proposed improvements to the CVSC could not increase demand or the need for additional facilities nor will it require the construction or expansion of recreational facilities. The effect of this Project on recreational resources is not cumulatively considerable.

3.4.15.3 Alternative D: "No Project" Alternative

3.4.15.3.1 Alternative D Impacts

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

No Impact (a and b). Alternative D will result in no change to existing conditions. No impacts to parks or recreational facilities would occur.

3.4.15.3.2 Alternative D Mitigation Measures

No significant impacts will occur. Therefore, no mitigation measures are required.

3.4.15.3.3 Alternative D Significance After Mitigation

No mitigation is required, so no recreational impacts will occur.

3.4.15.3.4 Alternative D Cumulative Impacts

Alternative D could not increase demand or the need for additional facilities nor will it require the construction or expansion of recreational facilities. The effect of this Project on recreational resources is not cumulatively considerable.

3.4.15.4 Environmentally Superior Alternative

None of the alternatives would result in impacts to recreational resources. All alternatives are virtually the same in this respect, and therefore there is no environmentally superior alternative.

3.4.16 Transportation and Traffic

The following section analyzes the potential transportation and traffic related impacts associated with the CVSC Improvement Project alternatives. Transportation facilities that occur within or in proximity to the Project area include State Highways 111 and 86, Airport Boulevard and two railroad lines of Union Pacific Railroad. Rail traffic ranges from 40 to 50 trains per day. Current (2014) motor vehicle traffic on State Highway 111 and 86 was 4,400 AADT and 17,000 AADT, respectively.[44]

Airport Boulevard is an existing two-lane roadway that is planned for expansion to provide four travel lanes. Current (2011) average daily traffic volumes on Airport Boulevard west of Highway 86 are approximately 4,300 ADT and are projected to reach 14,400 with buildout of surrounding lands as designed in the Riverside County General Plan.[45] Currently, all major roadway segments are operating under LOS A (free-flowing) conditions, and all have available capacity to accommodate additional traffic.

Please see Section 2.18.4 and 2.18.5 for detailed discussion of the existing mineral and energy conditions in the Project area.

3.4.16.1 Alternative B: "Fully-Lined Channel"

3.4.16.1.1 Alternative B Impacts

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

No Impact. Similar to the Proposed Project, construction and operation of Alternative B will not have a significant conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Access to transit and to other modes of travel, including CV Link, will not be affected.

[44] "2014 Traffic Volumes on California State Highways", Caltrans 2015
[45] Appendix EIR-4, Riverside County General Plan Update. 2015.

All major roads and intersections in the Project area currently operate at acceptable levels. Project construction will result in temporary, short-term traffic accessing the Project area from existing roads. All Project-related vehicle parking will occur on off of public roads and will be limited to CVWD easements and rights-of-way. With implementation of standard traffic management, no significant construction-related traffic delays, closures, or detours are anticipated. Impacts will be less than significant. Existing CVWD channel access will be used during Project construction, and no new access roads or transportation facilities are proposed. Alternative B will not permanently cross or interfere with the use of any component of the circulation system, including bicycle paths, or mass transit facilities.

Long-term maintenance will involve periodic channel inspections and less frequent repairs after storm events. It is anticipated that inspections will involve one or two utility trucks per inspection. The impacts of Alternative B construction and maintenance traffic on the existing roadway network will be negligible and will not adversely impact existing roads or intersections, their operation, or levels of service.

With proper construction management and traffic control, Alternative B will not have an adverse effect on roadway network operations and will not conflict with either Coachella or County plans or policies pertaining to the performance of the circulation system. Impacts will be less than significant.

Utility Projects

As previously discussed, traffic volumes on potentially affected streets are relatively low. Along Airport Boulevard, IID power pole work will require equipment within or adjacent to the road right-of-way and will require appropriate signage and traffic cones to ensure continued safe roadway operation. Within and adjacent to the Highway 111 right-of-way, CVWD and SCG activities will not encroach into travel lanes and will require appropriate signage and traffic cones to ensure continued safe roadway operation. All three agencies shall, as necessary, secure easements from Riverside County and/or Caltrans prior to initiation of work within road rights-of-way. These are programmatic activities for all three utilities and no new or specific mitigation measures are required. With proper construction management and traffic control, the utility relocation projects will not have an adverse effect on roadway network operations and will not conflict with either Coachella or County plans or policies pertaining to the performance of the circulation system.

a) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Less than Significant. The Riverside County Congestion Management Program (CMP) is prepared by the Riverside County Transportation Commission (RCTC) and the last update was adopted in 2011. The portion of State Highway 111 within the Project area is a CMP roadway that extends from US I-10 to the west to the Imperial County line to the south.

Current traffic volumes on the subject segment of Highway 111 are relatively low and the roadway is currently operating at LOS A. Alternative B construction traffic could affect Highway 111 traffic in the vicinity of Avenue 54, Airport Boulevard and the northern terminus of Fillmore Street. However, this additional traffic will be of low hourly volume, and will have a very limited and less than significant effect on the function of Highway 111 as a dependable component of the County Congestion Management Plan, there will be no disruption to rail traffic. Therefore, impacts will be less than significant

Utility Projects

As discussed above, utility relocation construction traffic could affect Highway 111 traffic in the vicinity of Avenue 54, Airport Boulevard and the northern terminus of Fillmore Street. There will be no disruption to rail traffic. However, this additional traffic will be of low hourly volume, and will have a very limited and less than significant effect on the function of Highway 111 as a dependable component of the County Congestion Management Plan. Therefore, impacts will be less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

No Impact. Construction will occur more than a one mile east of the nearest airport, primary access to which is from Airport Boulevard. The Jacqueline Cochran Regional Airport is a general aviation airport with relatively modest daily operations. Alternative B will not cause either an increase in traffic levels or a change in location of any facilities or improvements that that would results in substantial safety risks. Alternative B will have no impact on long-term air traffic patterns or operations, and any effects associated with construction vehicles will be temporary.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersection) or incompatible uses (e.g., farm equipment).

Less than Significant. Channel access will be taken from several locations along public streets, including possibly Avenue 54, Highway 111, Airport Boulevard, Avenue 57 (extended) and Fillmore Street. A traffic control plan will be prepared to ensure that construction equipment entering and leaving the Project site does so in a manner that does not create a hazard. Beyond these points of Project/roadway interface, Alternative B will not result in design features or incompatible uses that could increase traffic and circulation hazards. With the implementation of mitigation measures set forth in Section 2.18.7, the potential of the Project to increase roadway hazards will be less than significant.

Utility Projects
The proposed utility relocation projects will not result in design features or incompatible uses that could increase traffic and circulation hazards. All three agencies shall, as necessary, secure easements from Riverside County and/or Caltrans prior to initiation of work within road rights-of-way. These are programmatic activities for all three utilities and no new or specific mitigation measures are required. With the implementation of mitigation measures set forth in Section 2.18, the potential of the project to increase roadway hazards will be less than significant.

e) Result in inadequate emergency access.

Less than Significant. Similar to the Proposed Project, none of the planned construction activities under Alternative B are expected to have a significant effect on access to or use of surrounding public roads by emergency management agencies (fire, police, medical). Construction access points will be managed by use of gates, flag-persons and other appropriate to ensure that undue delays or closures do not occur. Therefore, the Alternative B will not result in inadequate emergency access in the Project vicinity.

Utility Projects
None of the planned relocation activities are expected to have a significant effect on access to or use of surrounding public roads by emergency management agencies (fire, police, medical). Construction access points will be managed by use of gates, flag-persons and other appropriate means to ensure that undue delays or closures do not occur. Therefore, the utility relocation projects will not result in inadequate emergency access in the project vicinity.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

No Impact. Alternative B will have a very limited effect on multi-modal transportation facilities in the Project area. Roadway improvements are generally less than those planned for the long-term, and General Plan buildout dimensions and many multi-modal components of these roadways may not be constructed for years to come.

The nearest Sunline bus routes to the Project area are Line 91 and 95. Line 91 runs in the eastern portion of the site through Airport Boulevard and a bus stop is located at the northwest corner of Airport Boulevard and Palm Street that will be unaffected by Alternative B. No significant adverse impacts will occur on the closest bus stop or route and/or passengers.

Utility Projects
None of the utility relocation projects will affect existing or proposed public transit. No significant adverse impacts will occur on the closest bus stop or route and/or passengers. There are no pedestrian or bicycle facilities in the project area that would be impacted by the utility relocation projects

3.4.16.1.2 Alternative B Mitigation Measures

Similar to the Proposed Project, Alternative B is expected to have minimal and generally less than significant impacts on the local transportation system, including roadways, rail lines and multi-modal facilities. Nonetheless, to further ensure that impacts are less than significant, the mitigation measures set forth in Section 2.18.7 are recommended to further minimize potential impacts to traffic and circulation.

3.4.16.1.3 Alternative B Significance After Mitigation

Mitigation is not required as impacts associated with Alternative B will be less than significant. However, recommended avoidance and minimization measures set forth in Section 2.18.7 will ensure impacts are less than significant.

3.4.16.1.4 Alternative B Cumulative Impacts

All roadway segments and intersections analyzed within the Project area currently operate at acceptable levels of service. Alternative B will not require or affect any changes to the existing highways or local streets, nor it will generate any significant permanent traffic in the area. Therefore, Alternative B would not contribute to any cumulatively considerable impacts related to transportation and traffic.

3.4.16.2 Alternative C: "Slope Lining and Channel Widening"

3.4.16.2.1 Alternative C Impacts

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

No Impact. Similar to the Proposed Project, construction and operation of Alternative C will not have a significant conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Access to transit and to other modes of travel, including CV Link, will not be affected.

All major roads and intersections in the Project area currently operate at acceptable levels. Alternative C construction will result in temporary, short-term traffic accessing the Project area from existing roads. All Project-related vehicle parking will occur on off of public roads and will be limited to CVWD easements and rights-of-way. With implementation of standard traffic management, no significant construction-related traffic delays, closures, or detours are anticipated. Impacts will be less than significant. Existing CVWD channel access will be used during Project construction, and no new access roads or transportation facilities are proposed. Alternative C will not permanently cross or interfere with the use of circulation system, bicycle paths, or mass transit facilities.

Long-term maintenance will involve periodic channel inspections and less frequent repairs. It is anticipated that inspections will involve one or two utility trucks per inspection. The impacts of Project construction and maintenance traffic on the existing roadway network will be negligible and will not adversely impact existing roads or intersections, their operation, or levels of service.

With proper construction management and traffic control, Alternative C will not have an adverse effect on roadway network operations and will not conflict with either Coachella or County plans or policies pertaining to the performance of the circulation system. Impacts will be less than significant.

Utility Projects
As previously discussed, traffic volumes on potentially affected streets are relatively low. Along Airport Boulevard, IID power pole work will require equipment within or adjacent to the road right-of-way and will require appropriate signage and traffic cones to ensure continued safe roadway operation. Within and adjacent to the Highway 111 right-of-way, CVWD and SCG activities will not encroach into travel lanes and will require appropriate signage and traffic cones to ensure continued safe roadway operation. All three agencies shall, as necessary, secure easements from Riverside County and/or Caltrans prior to initiation of work within road rights-of-way. These are programmatic activities for all three utilities and no new or specific mitigation measures are required. With proper construction management and traffic control, the utility relocation projects will not have an adverse effect on roadway network operations and will not conflict with either Coachella or County plans or policies pertaining to the performance of the circulation system.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Less than Significant. The Riverside County Congestion Management Program (CMP) is prepared by the Riverside County Transportation Commission (RCTC) and the last update was adopted in 2011. The portion of State Highway 111 within the Project area is a CMP roadway that extends from US I-10 to the west to the Imperial County line to the south.

Current traffic volumes on the subject segment of Highway 111 are relatively low and the roadway is currently operating at Level of Service (LOS) A, the best level of service. Alternative C construction traffic could affect Highway 111 traffic in the vicinity of Avenue 54, Airport Boulevard and the northern terminus of Fillmore Street. However, this additional traffic will be of low hourly volume, and will have a very limited and less than significant effect on the function of Highway 111 as a dependable component of the County Congestion Management Plan. There will be no disruption to rail traffic. Therefore, impacts will be less than significant.

Utility Projects
As discussed above, Project construction traffic could affect Highway 111 traffic in the vicinity of Avenue 54, Airport Boulevard and the northern terminus of Fillmore Street. There will be no disruption to rail traffic. Also, additional traffic associated with the utility relocation projects will be of low hourly volume, and will have a very limited and less than significant effect on the function of Highway 111 as a dependable component of the County Congestion Management Plan. Therefore, impacts will be less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

No Impact. Construction will occur more than one mile east of the nearest airport, primary access to which is from Airport Boulevard. The Jacqueline Cochran Regional Airport is a general aviation airport with relatively modest daily operations. Alternative C will not cause either an increase in traffic levels or a

change in location of any facilities or improvements that that would results in substantial safety risks. Alternative C will have no impact on long-term air traffic patterns or operations, and any effects associated with construction vehicles will be temporary.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersection) or incompatible uses (e.g., farm equipment).

Less than Significant. Channel access will be taken from several locations along public streets, including possibly Avenue 54, Highway 111, Airport Boulevard, Avenue 57 (extended) and Fillmore Street. A traffic control plan will be prepared to ensure that construction equipment entering and leaving the Project site does so in a manner that does not create a hazard. Beyond these points of Project/roadway interface, Alternative C will not result in design features or incompatible uses that could increase traffic and circulation hazards. With the implementation of mitigation measures set forth in Section 2.18.7, the potential of the Project to increase roadway hazards will be less than significant.

Utility Projects
The proposed utility relocation projects will not result in design features or incompatible uses that would increase traffic and circulation hazards. All three agencies shall, as necessary, secure easements from Riverside County and/or Caltrans prior to initiation of work within road rights-of-way. These are programmatic activities for all three utilities and no new or specific mitigation measures are required. With the implementation of mitigation measures set forth in Section 2.18, the potential of the project to increase roadway hazards will be less than significant.

e) Result in inadequate emergency access.

Less than Significant. Similar to the Proposed Project, none of the planned construction activities under Alternative C are expected to have a significant effect on access to or use of surrounding public roads by emergency management agencies (fire, police, medical). Construction access points will be managed by use of gates, flag-persons and other appropriate to ensure that undue delays or closures do not occur. Therefore, Alternative C will not result in inadequate emergency access in the Project vicinity.

Utility Projects
None of the planned relocation activities are expected to have a significant effect on access to or use of surrounding public roads by emergency management agencies (fire, police, medical). Construction access points will be managed by use of gates, flag-persons and other appropriate means to ensure that undue delays or closures do not occur. Therefore, the utility relocation projects will not result in inadequate emergency access in the project vicinity.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

No Impact. There are very limited multi-modal transportation facilities in the project area. Existing roadway improvements are generally less than planned long-term facilities; General Plan buildout dimensions and many multi-modal components of these roadways may not be constructed for years to come.

The nearest Sunline bus routes to the Project area are Line 91 and 95. Line 91 runs in the eastern portion of the site through Airport Boulevard and a bus stop is located at the northwest corner of Airport Boulevard and Palm Street that will be unaffected by Alternative C. No significant adverse impacts will occur on the closest bus stop or route and/or passengers.

Utility Projects
None of the utility relocation projects will affect existing or proposed public transit, or existing pedestrian or bicycle paths. No significant adverse impacts will occur on the closest bus stop or route and/or passengers.

3.4.16.2.2 Alternative C Mitigation Measures

Similar to the Proposed Project, Alternative C is expected to have minimal and generally less than significant impacts on the local transportation system, including roadways, rail lines and multi-modal facilities. Nonetheless, to further ensure that impacts are less than significant, the avoidance and minimization measures set forth in Section 2.18.7 are recommended for application to Alternative C and thereby further minimize potential impacts to traffic and circulation.

3.4.16.2.3 Alternative C Significance After Mitigation

Mitigation is not required as impacts associated with Alternative C will be less than significant. However, recommended mitigation measures set forth in Section 2.18.7 will ensure impacts are less than significant.

3.4.16.2.4 Alternative C Cumulative Impacts

All roadway segments and intersections analyzed within the Project area currently operate at acceptable levels of service. Alternative C will not require or affect any changes to the existing highways or local streets, nor it will generate any significant permanent traffic in the area. Therefore, Alternative C would not contribute to any cumulatively considerable impacts related to transportation and traffic.

3.4.16.3 Alternative D: "No Project" Alternative

3.4.16.3.1 Alternative D Impacts

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

No Impact. Alternative D will result in the continuation of existing conditions. The Project will not conflict with an applicable plan, ordinance, or policy relating to transportation or the circulation system.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

No Impact. Alternative D will result in the continuation of existing conditions. The Project will not conflict with an applicable congestion management program.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

No Impact. Alternative D will result in the continuation of existing conditions. The Project will not change air traffic patterns or increase traffic levels that may induce safety risks.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersection) or incompatible uses (e.g., farm equipment).

No Impact. Alternative D will result in the continuation of existing conditions. The Project will not increase hazards due to a design feature or incompatible use.

e) Result in inadequate emergency access.

No Impact. Alternative D will result in the continuation of existing conditions. The Project will not conflict with emergency access or result in inadequate emergency access.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

No Impact. Alternative D will result in the continuation of existing conditions. The Project will not conflict with adopted policies, plans, or programs regarding transit or alternative transportation.

3.4.16.3.2 Alternative D Mitigation Measures

No significant impacts will occur. Therefore, no mitigation measures are required.

3.4.16.3.3 Alternative D Significance After Mitigation

No significant transportation or circulation impacts will occur. Therefore, no mitigation measures are required.

3.4.16.3.4 Alternative D Cumulative Impacts

No impacts would occur under Alternative D; therefore, this alternative would not add to cumulative impacts associated with traffic or circulation.

3.4.16.4 Environmentally Superior Alternative

All of the build alternatives will be required to submit a traffic control plan to mitigate all potential impacts associated with construction traffic. None of the alternatives would result in additional ongoing traffic or daily trips. Therefore, all build alternatives are virtually the same in regard to traffic and circulation impacts, and there is no environmentally superior alternative.

3.4.17 Utilities and Service Systems

The following section analyzes the potential impacts to utilities and service systems associated with the CVSC Improvement Project alternatives. Utilities include domestic water, wastewater, irrigation water, solid waste management, energy services, data and telecommunications.

Please see Section 2.19.4 and 2.19.5 for detailed discussion of the existing utility and service system conditions in the Project area.

3.4.17.1 Alternative B: "Fully-Lined Channel"

3.4.17.1.1 Alternative B Impacts

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

No Impact. Similar to all build alternatives, Alternative B will be subject to the federal Clean Water Act (CWA), which prohibits unauthorized discharges from construction projects unless in compliance with an NPDES permit. The NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009, as amended by Order No. 2010-0014) would apply to Alternative B because the construction site includes more than 1-acre of soil disturbance. Construction activities include clearing, grading, grubbing, excavation, stockpiling, and reconstruction of existing facilities involving removal or replacement.

As set forth in Section 3.4.9: Hydrology and Water Quality, Alternative B shall be managed in a manner that avoids, minimizes and mitigates potential unauthorized discharges into surface or ground water.

No wastewater will be generated as part of Alternative B. Human waste will be addressed through on-site portable toilets located within staging areas and/or along the existing CVWD service road on top of the levee. Portable toilets will be regularly emptied and maintained. Therefore, the Project will not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (CRRWQCB). No significant impact is anticipated.

Utility Projects
Similar to the Proposed Project, the associated utility relocation projects are subject to the federal Clean Water Act (CWA), which prohibits unauthorized discharges from construction projects unless in compliance with an NPDES permit. The Order applies to construction sites that include one or more acre of soil disturbance. As set forth in Section 2.11: Hydrology and Water Quality, the Proposed Project and associated utility relocation projects shall be managed in a manner that avoids, minimizes and mitigates potential unauthorized discharges into surface or ground water. None of the utility projects involves an acre of more of site disturbance.

No wastewater will be generated as part of the utility relocations. Oils, solvents, lubricants and other potentially hazardous materials will be collected and disposed of in an approved manner. Human waste will be addressed through on-site portable toilets, which will be regularly emptied and maintained. Therefore, the project will not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (CRRWQCB). No significant impact is anticipated.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

No Impact. The scope of Alternative B is limited to the construction of channel improvements and associated activities that, once completed, will have little or no effect on or generate a demand for utilities or services. Neither water nor wastewater treatment are required by Alternative B. Therefore, Alternative B will have no effect on such facilities and will induce no environmental effects in this regard.

Utility Projects
Once construction is completed, neither water nor wastewater treatment are required by the utility relocations. Therefore, the utility relocations will have no effect on such facilities and will induce no environmental effects in this regard.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Less than Significant Impact. Alternative B improvements to the CVSC channel will result positive impacts to local and regional drainage by increasing the channel capacity and reducing flooding hazard. When compared to the Proposed Project, Alternative B will have somewhat greater effects on channel bottom habitat. At this time, only Alternative B impacts to the noise environment would be significant even with the application of practicable mitigation measures.

Utility Projects
Relocation of the irrigation lateral, SCG gas pipeline, and IID poles will not require the construction of new stormwater drainage facilities. The utility relocation projects are part Alternative B, which in and of itself is designed to increase capacity in the subject reach on the CVSC to convey the 100-Year storm flow and meet freeboard and other CVWD design standards for stormwater management facilities.

d) Not have sufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.

Less than Significant Impact. Alternative B will generate demand for water resources for concrete, dust control, hydro-consolidation of soils, haul truck cleaning, and related construction activities. Water demand associated with Project construction was calculated using the same method for the Proposed Project, which is based on the extent and type of development. It is assumed that construction of Alternative B could generate a demand of up to 13.75± acre-feet for concrete and 53± acre-feet for all other construction activities, including and especially hydroconsolidation and dust control over the course of construction. Post-construction, periodic channel maintenance will involve vegetation mowing and emergency repairs following a flood event that is anticipated to occur approximately every three years and generate an annual average demand of 2 acre-feet of water.

For 2015, the Coachella Valley Integrated Water Management Plan has projected valley-wide water demand of 689,753 acre-feet.[46] Alternative B's modest one-time demand of 67± acre-feet constitutes a 0.009% increase in demand during construction.

Therefore, and as demonstrated, there are sufficient water supplies available to serve Alternative B and meet its comparatively modest and one-time water demand for construction. No new or expanded entitlements are needed. Less than significant impacts would occur as a result of implementation of Alternative B, and no mitigation is required.

Utility Projects
As discussed above, there are sufficient water supplies available to serve the Project-related utility relocation projects and meet their comparatively modest and one-time water demand for construction. No new or expanded entitlements are needed. Less than significant impacts would occur as a result of implementation of the subject utility relocation projects, and no mitigation is required.

[46] "Coachella Valley Integrated Water Management Plan", prepared by Coachella Valley Regional Water Management Group. 2010.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

No Impact. Alternative B will not generate a permanent demand for wastewater treatment facilities. During construction, portable toilets will be used by construction crews and will generate a modest amount of wastes requiring treatment. Portable toilets will be periodically emptied and delivered to a wastewater collection and/or treatment facility. Therefore, Alternative B will have no impact on wastewater collection or treatment facilities.

Utility Projects
Similar to the Proposed Project, the utility relocation projects will not generate a permanent demand for wastewater treatment facilities. During construction, portable toilets will be used by construction crews and will generate a modest amount of waste requiring treatment. Portable toilets will be periodically emptied and delivered to a wastewater collection and/or treatment facility. Therefore, the utility relocation projects will have no impact on wastewater collection or treatment facilities.

f) Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

g) Not comply with federal, state, and local statutes and regulations related to solid waste.

Less than Significant Impact (f and g). A limited volume of solid waste (such as vegetation, concrete, asphalt, and framing materials) will be generated during construction of Alternative B. Much of the solid waste generated will be recycled. Riverside County has adopted a Countywide SRRE that establishes goals, programs, and methodologies for achieving 50 percent diversion of solid waste from landfills. Each of the waste management agencies that serve the Project area also provides recycling services. Remaining will be handled and disposed of by existing local solid waste service provider. Landfills within the Project area have sufficient capacity to accept anticipated Project waste.

Alternative B channel improvement project is not expected to generate a large amount of solid waste. Waste produced by construction activities will be handled and disposed of by the contractor or existing local solid waste service providers, and will comply with federal, state, and local statutes and regulations related to solid waste. Therefore, no significant impacts would occur from the Project and no mitigation is required for Alternative B.

Utility Projects
The subject utility relocation projects will generate very limited amounts of waste materials, none of which are classified as hazardous. Therefore, local haulers and landfills will be able to take those materials not suitable for recycling. Therefore, the utility relocation projects will not have an adverse impact on local landfills and will comply with all applicable solid waste regulations.

h) Result in significant adverse impacts on energy resources and delivery systems.

Less than Significant Impact. Construction of Alternative B will require the use of petroleum-based fuels to power equipment and provide on-site power, which constitutes a one-time demand its impacts on supplies of petroleum-based fuels will be less than significant.

Similar to the Proposed Project, Alternative B will require the relocation of Irrigation Lateral 99.8, and 8-inch SCG natural gas pipeline, and several IID power poles. The delivery of natural gas and electric power will be strengthened by the proposed utility relocation projects.

Based on discussions between CVWD and IID, poles will be relocated at the two discussed locations, on Airport Boulevard on the east and west bank of the channel, and west of the channel in the vicinity of the Lateral 99.8. Relocation activities has been closely coordinated with CVWD and IID. As discussed in Section 1, the relocation, removal and installation of new IID power poles have been made a part of the Project and have been analyzed throughout this document. Based upon plans prepared by IID and reviewed by CVWD, the proposed channel improvement Project will not have a significant adverse impact on IID's energy resources or delivery systems.

Alternative B also has the potential to impact an 8-inch high pressure natural gas line owned and operated by SCG. As with the IID facilities, the relocation of this gas line is a part of the Project and has been analyzed throughout this EIR. SCG will install a new 8-inch gas line to replace the line that will be impacted by the future channel improvements. Once constructed, the new line will be connected to the existing line well outside the channel right-of-way, the "retired" line in the channel will be removed during construction of channel improvements, and the balance of the retired 8-inch line will be abandoned in-place. CVWD and the project contractor will coordinate with SCG so that the utility can relocate these lines without an undue disruption of service. The relocation of these lines will be the responsibility of the SCG.

Frontier Communications provides telecommunications and data services to the Project planning area. A 12-inch fiber optic cable conduit is located within and crosses the southern portion of the channel between the UPRR lines and Highway 111. The relocation of this line is not required by the planned channel improvements. Also of note is an existing 20-inch Kinder Morgan petroleum pipeline that crosses beneath the channel. At this time, it has been determined that the Project does not require the relocation of this pipeline.

While Alternative B will require the relocation or reinstallation of electric power poles and natural gas lines, these activities will be closely coordinated between CVWD and the individual utilities. With proper coordination, Alternative B will have a less than significant impact on these resources/systems.

3.4.17.1.2 Alternative B Mitigation Measures

As noted above, Alternative B will result in the construction of new stormwater facilities that will have a less than significant impact on utilities. No further mitigation is required.

3.4.17.1.3 Alternative B Significance After Mitigation

As noted, the Alternative B will result in less than significant impacts to utilities without mitigation. Alternative B impacts will remain less than significant. There will be no residual impacts under this alternative and impacts will be less than significant.

3.4.17.1.4 Alternative B Cumulative Impacts

There will be very limited cumulative effects associated with Alternative B. Most public services and utilities are not needed to complete the Alternative B project, and those services or utilities that may serve will not result in significant adverse effects to these services or utilities. Therefore, Alternative B would have a less than cumulatively considerable impact on utilities and service systems.

3.4.17.2 Alternative C: "Slope Lining and Channel Widening"

3.4.17.2.1 Alternative C Impacts

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

No Impact. Similar to all build alternatives, Alternative C will also be subject to the federal Clean Water Act (CWA), which prohibits unauthorized discharges from construction projects unless in compliance with an NPDES permit. The NPDES General Permit would apply to Alternative C because the construction site includes more than 1-acre of soil disturbance. Construction activities would be comparable to if somewhat greater than the Proposed Project. As set forth in Section 3.4.9: Hydrology and Water Quality, Alternative C shall be managed in a manner that avoids, minimizes and mitigates potential unauthorized discharges into surface or ground water.

No wastewater will be generated as part of Alternative C. Human waste will be addressed through on-site portable toilets located within staging areas and/or along the existing CVWD service road on top of the levee, which will be regularly emptied and maintained. Therefore, the Alternative C project will not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (CRRWQCB). No significant impact is anticipated.

Utility Projects
Similar to the Proposed Project, the utility relocation projects are subject to the federal Clean Water Act (CWA), which prohibits unauthorized discharges from construction projects unless in compliance with an NPDES permit. The Order applies to construction sites that include one or more acre of soil disturbance. As set forth in Section 2.11: Hydrology and Water Quality, the Proposed Project shall be managed in a manner that avoids, minimizes and mitigates potential unauthorized discharges into surface or ground water. None of the utility projects involves an acre of more of site disturbance.

No wastewater will be generated as part of the utility relocations. Oils, solvents, lubricants and other potentially hazardous materials will be collected and disposed on in an approved manner. Human waste will be addressed through on-site portable toilets, which will be regularly emptied and maintained. Therefore, the project will not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (CRRWQCB). No significant impact is anticipated.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

No Impact. The scope of Alternative C is limited to the construction of channel improvements, channel widening and associated activities that, once completed, will have little or no effect on or generate a demand for utilities or services. Neither water nor wastewater treatment are required by Alternative C. Therefore, Alternative C will have no effect on such facilities and will induce no environmental effects in this regard.

Utility Projects
Once construction is completed, neither water nor wastewater treatment are required by the utility relocations. Therefore, the utility relocations will have no effect on such facilities and will induce no environmental effects in this regard.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Less than Significant Impact. Alternative C improvements to the CVSC channel will result positive impacts to local and regional drainage by increasing the channel capacity and reducing flooding hazard. Alternative C impacts will be greater than the Proposed Project with regard to impacts to air quality, biological resources and the noise environment, and land requirements, given it greater size and increased disturbance area and proximity to residences. Mitigation measures have been applied in the appropriate sections; however, impacts to air quality and noise remain as being significant.

Utility Projects
Relocation of the irrigation lateral, SCG gas pipeline, and IID poles will not require the construction of a new stormwater drainage facility. The utility relocation projects are part Alternative C, which in and of itself is designed to increase capacity in the subject reach on the CVSC to convey the 100-Year storm flow and meet freeboard and other CVWD design standards for stormwater management facilities.

d) Not have sufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.

Less than Significant Impact. Alternative C will generate demand for water resources for concrete, dust control, hydro-consolidation of soils, haul truck cleaning, and related construction activities. Water demand associated with Project construction was calculated using the same method for the Proposed Project, which is based on the extent and type of development. It is assumed that construction of Alternative C could generate a demand of up to 4.25± acre-feet for concrete and 62.1± acre-feet for all other construction activities, including and especially hydroconsolidation and dust control over the course of construction. Post-construction, periodic channel maintenance will involve vegetation mowing and management that is anticipated to occur approximately every three years and generate an annual average demand of 2 acre-feet of water.

For 2015, the Coachella Valley Integrated Water Management Plan has projected valley-wide water demand of 689,753 acre-feet.[47] Alternative C's modest one-time demand of 66± acre-feet constitutes a 0.009% increase in demand during construction.

Therefore, demand and resource analysis indicate there are sufficient water supplies available to serve Alternative C and meet its comparatively modest and one-time water demand for construction. No new or expanded entitlements are needed. Less than significant impacts would occur as a result of implementation of Alternative C, and no mitigation is required.

Utility Projects
As discussed above, there are sufficient water supplies available to serve the Project-related utility relocation projects and meet their comparatively modest and one-time water demand for construction. No new or expanded entitlements are needed. Less than significant impacts would occur as a result of implementation of the subject utility relocation projects, and no mitigation is required.

[47] "Coachella Valley Integrated Water Management Plan", prepared by Coachella Valley Regional Water Management Group. 2010.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

No Impact. Alternative C will not generate a permanent demand for wastewater treatment facilities. During construction, portable toilets will be used by construction crews and will generate a modest amount of wastes requiring treatment. Portable toilets will be periodically emptied and delivered to a wastewater collection and/or treatment facility. Therefore, Alternative C will have no impact on wastewater collection or treatment facilities.

Utility Projects
Similar to the Proposed Project, the utility relocation projects will not generate a permanent demand for wastewater treatment facilities. During construction, portable toilets will be used by construction crews and will generate a modest amount of wastes requiring treatment. Portable toilets will be periodically emptied and delivered to a wastewater collection and/or treatment facility. Therefore, the utility relocation projects will have no impact on wastewater collection or treatment facilities.

f) Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

g) Not comply with federal, state, and local statutes and regulations related to solid waste.

Less than Significant Impact (f and g). A limited volume of solid waste (such as vegetation, concrete, asphalt, and framing materials) will be generated during construction of Alternative C. Much of the solid waste generated will be recycled. Riverside County has adopted a Countywide SRRE that establishes goals, programs, and methodologies for achieving 50 percent diversion of solid waste from landfills. Each of the waste management agencies that serve the Project area also provides recycling services. Remaining will be handled and disposed of by existing local solid waste service provider. Landfills within the Project area have sufficient capacity to accept anticipated Project waste.

The Alternative C project, including the utility relocation projects, are not expected to generate a large amount of solid waste. Waste produced by construction activities will be handled and disposed of by the contractor or existing local solid waste service providers, and will comply with federal, state, and local statutes and regulations related to solid waste. Therefore, no significant impacts would occur from the Alternative C project and no mitigation is required.

h) Result in significant adverse impacts on energy resources and delivery systems.

Less than Significant Impact. Construction of Alternative C will require the use of petroleum-based fuels to power equipment and provide on-site power, which constitutes a one-time demand its impacts on supplies of petroleum-based fuels will be less than significant. Similar to the Proposed Project, Alternative C will require the relocation of Irrigation Lateral 99.8, an 8-inch SCG natural gas pipeline, and several IID power poles.

Based on discussions between CVWD and IID, poles will be relocated at the two discussed locations, on Airport Boulevard on the east and west bank of the channel, and west of the channel in the vicinity of the Lateral 99.8. Relocation activities has been closely coordinated with CVWD and IID. As discussed in Section 1, the relocation, removal and installation of new IID power poles have been made a part of the Project and have been analyzed throughout this document. Based upon plans prepared by IID and reviewed by CVWD, the proposed channel improvement Project will not have a significant adverse impact on IID's energy resources or delivery systems.

Alternative C also has the potential to impact an 8-inch high pressure natural gas line owned and operated by SCG. As with the IID facilities, the relocation of this gas line is a part of the Project and has been analyzed throughout this EIR. SCG will install a new 8-inch gas line to replace that line that will be impacted by the future channel improvements. Once constructed, the new line will be connected to the existing line well outside the channel right-of-way, the "retired" line in the channel will be removed during construction of channel improvements, and the balance of the retired 8-inch line will be abandoned in-place. CVWD and the project contractor will coordinate with SCG so that the utility can relocate these lines without an undue disruption of service. The relocation of these lines will be the responsibility of the SCG.

Frontier Communications provides telecommunications and data services to the Project planning area. A 12-inch fiber optic cable conduit is located within and crosses the southern portion of the channel between the UPRR lines and Highway 111. The relocation of this line is not required by the planned channel improvements. Also of note is an existing 20-inch Kinder Morgan petroleum pipeline that crosses beneath the channel. At this time, it has been determined that the Project does not require the relocation of this pipeline.

While Alternative C may require the relocation or reinstallation of electric power poles and a natural gas line, these activities will be closely coordinated between CVWD and the individual utilities. With proper coordination, Alternative C will have a less than significant impact on these resources/systems.

3.4.17.2.2 Alternative C Mitigation Measures

As noted above, Alternative C will result in the construction of new stormwater facilities that will have a less than significant impact on utilities. No further mitigation is required.

3.4.17.2.3 Alternative C Significance After Mitigation

As noted, the Alternative C will result in less than significant impacts to utilities without mitigation. Alternative C impacts will be less than significant.

3.4.17.2.4 Alternative C Cumulative Impacts

There will be very limited cumulative effects associated with Alternative C. Most public services and utilities are not needed to complete the Alternative, and those services or utilities that may serve will not result in significant adverse effects to these services or utilities. Therefore, Alternative C would have a less than cumulatively considerable impact on utilities and service systems.

3.4.17.3 Alternative D: "No Project" Alternative

3.4.17.3.1 Alternative D Impacts

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

No Impact. Under Alternative D, no construction and/or operational activities would be carried out to generate surface water that may contain sediments, trash and debris, oil and grease, fuels, lubricants, paints, miscellaneous chemicals. Conditions would be expected to remain the same and no new impacts would occur.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

No Impact. Under Alternative D, no water would be required for periodic dust control on access roads, or earthmoving activities. Therefore, no Project-related impacts will be anticipated and require no mitigation.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

No Impact. Under Alternative D, no new impervious surfaces would be constructed and the proposed reach of CVSC will continue to not meet the 100-year storm or CVWD's SPF standards.

d) Not have sufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.

No Impact. Alternative D would not require water for construction and operation. Therefore, there will be no water demand that would require new or expanded water supply resources or entitlements. No mitigation is required.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

No Impact. Alternative D would not require water for construction and operation. In addition, under Alternative D, no operational activities would be carried out that would generate wastewater. No project related impact is anticipated, therefore, no mitigation is required.

f) Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

No Impact. Under Alternative D, no solid waste would be generated. Therefore, Alternative D will not affect local and/or regional landfills capacities. No mitigation is required.

g) Not comply with federal, state, and local statutes and regulations related to solid waste.

No Impact. Alternative D would not generate waste during construction and operations. Therefore, no impacts would occur from this alternative and no mitigation is required.

h) Result in significant adverse impacts on energy resources and delivery systems.

No Impact. Alternative D would not require the use of energy sources or delivery systems during construction or operation Therefore, no impacts would occur and no mitigation is required.

3.4.17.3.2 Alternative D Mitigation Measures

No significant impacts would occur; therefore, mitigation measures are not required.

3.4.17.3.3 Alternative D Significance After Mitigation

No mitigation is required, so no will occur to utility or service systems.

3.4.17.3.4 Alternative D Cumulative Impacts

Alternative D would have no impacts on utilities and service systems. Therefore, Alternative D will not significantly contribute to cumulative impacts associated with utilities and service systems.

3.4.17.4 Environmentally Superior Alternative

Alternative A (Proposed Project) is considered the environmentally superior alternative because it will require the lowest water demand during construction. All other impacts to utility systems and infrastructure are essentially the same.

3.4.18 Environmentally Superior Alternative Summary and Findings

Pursuant to CEQA Guidelines §15126.6, and based upon the analysis contained within this section, the environmentally superior project alternative is determined to be Alternative A, the Proposed Project.

Although Alternative D (the No Project alternative) would result in fewer residual environmental impacts than the Proposed Project, this alternative would not meet the objectives of the CVSC Improvement Project, and would leave substantial population and property subject to 100-year flooding; and is therefore not considered environmentally superior. Alternatives B and C will generally have greater impacts compared to the Proposed Project due to the need for full channel lining under Alternative B and the larger impact area associated with Alternative C.

Table 3-16
Environmentally Superior Alternative Checklist

Topic	Alt. A: Proposed Project	Alt. B: Full Lining	Alt. C: Channel Widening	Alt. D: No Project
Aesthetics	LSM	LSM/MI	LSM/MI	NI
Agriculture and Forestry	LSM	LSM/SI	LSM/MI	NI
Air Quality	LSM	LSM/MI	LSM/MI	NI
Biological Resources	LSM	LSM/MI	LSM/MI	NI
Cultural and Tribal Cultural	LSM	LSM/SI	LSM/MI	NI
Geology and Soils	LSM	LSM/MI	LSM/MI	NI
Greenhouse Gas Emissions	LSM	LSM/MI	LSM/MI	NI
Hazards & Hazardous Materials	LS	LS/MI	LS/MI	NI
Hydrology and Water Resources	LSM	LSM/MI	LSM/MI	SU
Land Use and Planning	LSM	LSM/SI	LSM/MI	NI
Mineral and Energy	LS	LS	LS	NI
Noise	SU	SU	SU	NI
Population, Housing and Socio-Economic	NI	NI	NI	NI
Public Services	LS	LS	LS	NI
Recreation	NI	NI	NI	NI
Transportation and Traffic	LSM	LSM	LSM	NI
Utilities and Service Systems	LS	LS	LS	NI

NI = No Impact; LS = Less than Significant; LSM = Less than Significant with Mitigation; SU = Significant and Unavoidable
MI = More Impact than Proposed Project; LI =Less Impact than Proposed Project; SI = Similar Impact to Proposed Project

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4.0 UNAVOIDABLE SIGNIFICANT IMPACTS

Introduction

Unavoidable significant impacts are those that cannot be reduced to acceptable or insignificant levels by the implementation mitigation measures. Impacts associated with development of the Coachella Valley Stormwater Improvement Project are addressed in detail in Sections 2 and 3 of this EIR. Comprehensive mitigation measures, as well as monitoring and reporting programs, have been developed to address potential environmental impacts. In most cases, the mitigation measures set forth in this EIR will demonstrably and effectively reduce all potentially significant impacts to a level of less than significant. However, noise impacts, particularly impacts associated with groundborne vibrations during construction related to plate compactors and large bulldozers, could not be mitigated to a less than significant level. Because it is necessary to use plate compactors and large bulldozers to complete construction in proximity to sensitive receptors (residences), and no mitigation measures can reduce vibration levels associated with such equipment, impacts are considered unavoidable and significant.

A *Statement of Overriding Considerations* will be prepared with regard to unavoidable noise impacts, and will be considered by the District's Board of Directors at a public meeting as a part of its review of the Draft EIR (State CEQA Guidelines §15093). The draft statement will set forth information, considerations and findings that are supportive of the goals and benefits of the project as a whole.

Noise

The Proposed Project would not exceed city or county noise standards for sensitive receptors, nor would they result in substantial permanent increases in ambient noise levels in the project vicinity above levels existing without the project. The mitigation measures provided in Section 2.14.7 would successfully reduce all potential noise related impacts to less than significant levels with the exception of noise associated with groundborne vibration due to use of construction equipment in proximity to sensitive receptors.

Construction equipment capable of exceeding vibration standards that are required during construction of the Proposed Project include bulldozers, jack-hammers, loaded trucks, and plate compactors. The Proposed Project construction activities will exceed the Caltrans construction vibration standard of 0.01 in/sec PPV at sensitive receptor locations within 100 feet of plate compactors and large bulldozers during construction. If used as part of project construction, large bulldozers and/or plate compactors within 100 feet of nearby sensitive residential land uses would generate a significant impact. Mitigation measures N-1 and N-4 are

provided to reduce construction vibration levels to the greatest extent practicable; however, plate and other compactors, and large bulldozers will operate within proximity to residences. Because this equipment is necessary during construction, there are no feasible mitigation measures to apply that will successfully reduce groundborne vibration levels, and impacts would continue to be significant and unavoidable. However, construction activity will progress incrementally, will be of relatively short duration, and will fall below acceptable (regulatory) levels as construction progresses away from sensitive receptors.

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5. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF ENVIRONMENTAL RESOURCES

As required by State CEQA Section 15126.2(c), this section of the EIR addresses the potentially significant irreversible environmental changes to or loss of non-renewable resources that could occur from implementation of the Proposed Project. In general, non-renewable resources imply fossil-based energy resources, but may also pertain to the permanent loss of agricultural, biological, mineral and other natural resources. The use of non-renewable resources during short-term construction and long-term operation of the Proposed Project may be irreversible and irretrievable.

The development of the Proposed Project will result in the irretrievable and irreversible commitment of non-renewable natural resources, including energy resources such as petroleum and natural gas, water resources, and mineral resources used for construction materials, such as concrete and steel. Construction of the Proposed Project will result in the permanent loss of fossil fuels through the consumption of coal, petroleum or natural gas for the manufacture of steel, Portland Cement and concrete, and to fuel construction and maintenance vehicles. As detailed in Section 2.13, the construction of Proposed Project could result in energy demand ranging from 2.96 million kwh to 3.33 million kwh in order to produce the concrete necessary for project construction. On-going operation and maintenance of the subject channel segment will typically generate a low demand for energy, that demand being associated with regular site visits and inspections, periodic access and channel grading and vegetation management, and hauling. Standard fossil fuels are expected to be the primary energy source for the foreseeable future to run utility and water trucks, grading and hauling equipment. However, energy use associated with these ongoing activities will be de minimis and will generate a very low demand for finite energy or other resource resources.

Construction of the Proposed Project will have a limited impact on designated agricultural lands and/or lands that are in cultivation. The potential impact is limited to 0.34±-acres parcel located on the east and west sides and outside of the channel and upstream of the UPRR bridges, where an existing CVWD irrigation lateral is to be relocated as a part of the channel improvement project. Once the lateral has been relocated the excavation and staging areas will be returned to their original state. The agricultural lands that could be impacted are partially cultivated with date palm interspersed with fallow lands. Additional or altered easements may be required for the Proposed Project; however, disturbance to existing agricultural activities at this location will be limited, temporary and less than significant with implementation of AG-1.

Construction of the Proposed Project is estimated to require approximately 53,776 cubic yards (CY) of concrete, 25,948 CY of aggregate, a material that is in good supply in the Coachella Valley and which is locally mined at several locations, as discussed in Section 2.13. Therefore, total aggregate demand for the project is approximately 25,948 or 0.01% of permitted aggregate, and will not represent a significant impact to that supply.

Construction of the Proposed Project will marginally change the physical environment, insofar as it will result in the addition of concrete lining to the side slopes of the levees, and channel bottom lining along portions of the channel underlying bridges. However, given that the improvements occur on lands that are currently developed or in use as a stormwater channel, the impact on the affected land will not be significant.

As discussed in Section 2.6, with planned mitigation, the Proposed Project improvements will not result in significant loss of biological resources. The channel currently includes a mix of desert and alkali scrub and riparian habitats, which are protected under the CVMSHCP or Section 1600 of the California Fish and Game Code, and/or section 404 of the CWA. The Proposed Project would result in permanent impacts to 22.85 acres of CDFW waters and 9.45 acres of waters of the US. There are no federal wetlands within the Project area.

These impacts are associated with areas of channel slope and bottom lining. Once construction is completed the centerline of the pilot channel will be reestablished and the soft bottom portions of the channel will naturally re-vegetate as they do today following channel maintenance activities. As detailed in Section 2.6, the Proposed Project will fully mitigate its impact on biological species and habitats through implementation of a number of avoidance, minimization and mitigation measures, as well as compliance with CWA permits and conditions therein. Therefore, long-term impacts to biological resources will be mitigated to less than significant.

As discussed in Section 2.11 of this EIR, construction of the Proposed Project will generate demand for water resources for concrete, dust control, hydro-consolidation of soils, haul truck cleaning, and related construction activities. It is assumed, based on analysis of comparable construction projects, that construction of the Proposed Project could generate a demand of up to 4.42± acre-feet for concrete and 53± acre-feet for all other construction activities, including and especially hydroconsolidation and dust control over the course of construction. Post-construction, annual channel maintenance will involve vegetation mowing that is anticipated to occur every three years and generate an annual average demand of 2 acre-feet of water. This represents a 0.008% increase in current water demand in the Valley and will not result in a significant impact.

The Proposed Project will have a limited and less than significant irreversible impact on irretrievable resources. The Project will not significantly add to constructed areas and will mitigate its impacts to biological resources; therefore, any irreversible impacts will be less than significant.

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6.0 GROWTH INDUCING IMPACTS

Section 15126.2 of the CEQA Guidelines requires that an EIR consider and analyze a project's potential to induce growth. Growth inducement can be directly generated by a project, such as the extension of a roadway into a previously undeveloped area, or may indirectly impact growth and cause changes in the environment that could lead to growth. This section is based on the project description provided in Section 1 of this EIR, and the analysis of the various impact areas conducted in Section 2.

As described in this document, the construction and implementation of the Proposed Project, including the relocation of existing utility facilities, will not result in new homes or businesses, nor will it result in the extension of public services, facilities or utilities that could induce growth. The channel improvements would simply expand existing flood control facilities and ensure that they protect existing homes and businesses from flooding in future 100-year storm events. The Project could indirectly influence a future resident's or business decision to locate in the areas being removed from the existing flood hazard zone. However, alternative flood protection is feasible and the potential for a reduced flooding hazard to encourage a large number of people to move to the area in minimal.

Construction of the Proposed Project has the potential to attract workers and crew members to the area for a temporary construction opportunity. However, the one-year construction period would generate a limited demand for workers, many or most of which may be local to the area, and it is not expected to significantly increase the population. Ongoing, direct job creation resulting from the project will not to be significant. It will be limited to maintenance of the channel which is currently in place. No new employment opportunities would be created.

In conclusion, as described throughout this document, the Proposed Project has a limited potential to result in growth inducing impacts that could cumulatively impact the environment. No new infrastructure, services or utilities, beyond relocating existing facilities to accommodate project features, will be required for the Proposed Project, and its impacts on the local population will be less than significant.

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7. ORGANIZATIONS, PERSONS AND DOCUMENTS CONSULTED

A. Lead Agency and Project Proponent
Coachella Valley Water District
P.O. Box 1058
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B. Environmental/Planning Consultant
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Environmental/Planning Consultant
Subconsultant
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Palm Desert, CA 92211

C. Air Quality Consultant
Terra Nova Planning & Research, Inc.
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D. Biological Consultant
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3120 Chicago Avenue, Suite 110
Riverside, CA 92507

E. Cultural Consultants
CRM Tech
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Applied EarthWorks, Inc.
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Pasadena, CA 91107-3414

F. Engineering Consultant
Sladden Engineering
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Palm Desert, CA 92211

G. Geotechnical Consultant
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Irvine, CA 92618

H. Hydrology Consultant
Northwest Hydraulic Consultants
2600 Capitol Avenue, Suite 140
Sacramento, CA 95816

I. Paleontologic Consultant
Applied EarthWorks, Inc.
133 N. San Gabriel Blvd., Suite. 201
Pasadena, CA 91107-3414

J. Public Agencies

Bureau of Reclamation
Lower Colorado Region
500 Fir Street
Boulder City, NV 89005

California Department Fish and Wildlife Services, Region 6
78078 Country Club Drive, Suite 109
Bermuda Dunes, CA 92203

California Department of Transportation, District 8
464 W. 4th Street
San Bernardino, CA 92401

City of Coachella
1515 Sixth Street
Coachella, CA 92236

Federal Emergency Management Agency, Region 9
1111 Broadway, Suite 1200
Oakland, CA 94607

Riverside County Transportation Department
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Riverside, CA 92504

State Water Resources Control Board, Region 7
Colorado Regional Water Quality Control Board
73720 Fred Waring Drive, Suite 100
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Union Pacific Railroad
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U.S. Fish and Wildlife Service, Region 8
610 W. Ash Street
San Diego, CA 92101

K. Utilities

Imperial Irrigation District
333 E. Barioni Boulevard
Imperial, CA 92251

Southern California Gas
4495 Howard Avenue
Riverside, CA 92507

Kinder-Morgan
1100 West Town and Country Road, Suite 700
Orange, CA 92868

Century Link
Global Field Services
1550 Marlborough Ave Ste. #100
Riverside, CA 92507

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