Final Environmental Impact Report/
Environmental Impact Statement

Thousand Palms Flood Control Project

Prepared for

Coachella Valley Water District

and

United States Army Corps of Engineers
Regulatory Division

Prepared by

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Executive Summary

ES.1 Introduction

The Coachella Valley Water District (CVWD) and the United States Army Corps of Engineers Regulatory Division (USACE/Corps) have prepared a joint Environmental Impact Report (EIR) and Environmental Impact Statement (EIS) (collectively referred to as the "EIR/EIS") for the Thousand Palms Flood Control Project ("Project" or "Proposed Action") in order to comply with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). CVWD is the CEQA lead agency and USACE is the NEPA lead agency for the Project.

The proposed Project (Alternative 1) consists of a series of flood control improvements designed to meet the Federal Emergency Management Agency (FEMA) 0.01 chance, or 100-year, flood event thereby providing flood protection for developed and planned development areas in Thousand Palms and the vicinity. The need for flood control has increased substantially in recent years due to continued growth and development in the Coachella Valley. The proposed Project is also designed to support continued aeolian (wind-driven) transport of sand to the Coachella Valley Preserve (Preserve), where it forms habitat for the sensitive Coachella Valley fringe-toed lizard (State-listed as endangered and federally-listed as threatened). The proposed Project is linear in nature, consisting of four reaches, and is generally located on the northern and eastern margins of the community of Thousand Palms. Components of the proposed Project include levees, channels, culverts, and a sediment basin. The levees and channels would be comprised of compacted native soil with a layer of soil cement to protect the structures from erosion.

As discussed in Section 1.3 (Project Objectives & Purpose and Need) of this EIR/EIS, the primary objective of the Project is to provide flood protection to developed areas within the FEMA-designated Flood Hazard Area, while avoiding adverse effects and enhancing sand transport to the Preserve. While substantial flood control improvements have been constructed to protect properties in the south half of the Coachella Valley, the portion of the valley north of the I-10 freeway, including Thousand Palms, has little flood protection and is subject to substantial flooding hazards. Secondary objectives of the Project are to enhance the viability of the Preserve and the Coachella Valley Wildlife Refuge (respectively) by establishing clear boundaries; avoiding disruption of aeolian processes for sand transport; preserving an approximately 550-acre floodway area; and replenishing sand on the Preserve/Refuge during the operations and maintenance phase by collecting material that has gathered along Project facilities and redistributing it on the Preserve/Refuge within the active wind corridor, whereas such materials would otherwise continue traveling downwind/downstream away from the protected habitat areas.

In addition to the acquisition and preservation of the 550-acre floodway, CVWD will mitigate direct and indirect impacts to the Coachella Valley National Wildlife Refuge (Refuge) by preserving 32 acres of aeolian sand habitat and acquiring 24.9 acres of private lands located near Reach 3 that will be transferred to the USFWS to replace portions of the Refuge impacted by the Project (see Figure 3.6-1, Land Ownership Proposed Project Alignment). The 24.9 acres of acquired lands will be considered part of the 32-acre requirement. These lands are required to be of equal or greater acreage than those disturbed due to construction and be comprised of ecologically equivalent habitat to support sensitive species. A Habitat Conservation Plan will be prepared to describe all mitigation land acquisition, management, and compensation actions (see MM BIO-6: Compensate for Habitat Loss in Section 4.6 Biological Resources and Appendix C.3, Biological Assessment). An additional objective of the Project is to provide an alignment consistent with Coachella Valley Multiple Species Habitat Conservation Plan

(CVMSHCP) boundary. Reach 4 of the proposed Project has been designed to generally follow the boundary of the Coachella Valley Preserve.

ES.2 Alternatives

Alternatives to the proposed Project (Alternative 1) considered in detail in the EIR/EIS include the following:

- **Removal of Reach 2 (Alternative 2).** Alternative 2 would reduce the impact area of the proposed Project by not including an approximately 1,700-foot long levee located north of E. Ramon Road and Southern California Edison's Mirage Substation (referred to as Reach 2 in the proposed Project (Alternative 1) description). Reaches 1, 3, and 4 would be implemented as proposed under Alternative 1.
- **Modified Reach 3 (Alternative 3).** Alternative 3 would implement Reaches 1-4 of the proposed Project, with two possible realignments of Reach 3. Each would adjust the upstream portion of the Reach 3 levee so that it angles more to the west/southwest compared to the proposed Project. The purpose of the adjustment to Reach 3 is to reduce impacts to State and federal jurisdictional waters of the U.S. and/or to minimize potential adverse effects to the wind corridor and sand transport onto the Preserve/Refuge.
- **No Action (Alternative 4).** Under Alternative 4 construction and operation of the Project would not occur and existing conditions related to flood hazard would continue to persist. Potentially catastrophic flooding would continue to threaten the Thousand Palms area. In the absence of the Project, new construction on properties in flood hazard areas would continue to be subject to flood-proofing requirements imposed by Riverside County. Due to the ongoing hazard, other flood protection strategies may be proposed in the future to address the area's flooding problem.

Each of these alternatives is described in detail in Chapter 2, as well as a description of other alternatives considered and the rationale for elimination from further analysis.

ES.2.1 Comparison of Alternatives

Tables ES-1 and ES-2 summarize the environmental impacts that would occur from selection and implementation of each of the alternatives. A full analysis of the impacts from each alternative is presented in Sections 4.2 through 4.14 (Environmental Consequences) of this EIR/EIS, while Section 2.5 (Comparison of Alternatives) provides of summary comparison of the alternatives for each issue area.

ES.2.2 NEPA Preferred Alternative and CEQA Environmentally Superior Alternative

NEPA Preferred Alternative

The USACE Regulatory Division will use the analysis developed in this EIS and 404 (b)1 analysis, as well as other factors such as cost and available technology, to select the Least Environmentally Damaging Practicable Alternative (LEDPA). The LEDPA is the alternative that may be permitted under the Clean Water Act. In accordance with the Clean Water Act, no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impacts on aquatic ecosystems, as long as the alternative does not have other significant adverse environmental consequences. Under this definition, an alternative is only considered "practicable" if it is available and capable of being implemented after taking into consideration the cost, existing technology, and

logistics of the project, in light of overall project purposes. Therefore, factors including cost and technology are considered in terms of whether a particular feature, alignment, or alternative would be practicable. In accordance with NEPA (40 CFR Section 1502.14(e)), the USACE has identified the proposed action (Alternative 1) as its preferred alternative. ~~The USACE will determine the LEDPA as part of the Final EIR/EIS.~~

CEQA Environmentally Superior Alternative

In accordance with CEQA requirements, an "environmentally superior alternative" must be identified among the alternatives analyzed in an EIR or EIR/EIS. The environmentally superior alternative is the alternative found to have an overall environmental advantage compared to the other alternatives based on the impact analysis in the EIR. If the environmentally superior alternative is the No Project Alternative, State CEQA Guidelines Section 15126.6(e)(2) requires the EIR to identify an environmentally superior alternative from among the other alternatives.

As discussed in Section 2.6.2 (CEQA Environmentally Superior Alternative), Alternative 2 would reduce the amount of levee construction by approximately 1,700 feet thereby resulting in the fewest environmental impacts, and therefore would be the CEQA environmentally superior alternative. Impacts to sensitive biological resources including CVFTL and Coachella Milk-vetch would be the same as the proposed Project. Alternative 2 would also result in the lowest permanent impact to waters by reducing the direct loss to 0.41 acres. Without Reach 2, however, flows from Reach 1 would not be directed southeast towards Reach 3 as effectively and some sand that would be available to the wind corridor would be lost. In the event of a 100-year flood event, with current levels of protection, the SCE Mirage substation would become partially inundated (NHC, 2017). Residences located between 30th Avenue and the north end of Reach 3 (just south of E. Ramon Road) are not anticipated to be inundated during a 100-year flood event (NHC, 2017). However, there is uncertainty if this area would be protected from future large storm events as the physical hydrology of the area changes over time. Therefore, CVWD has identified the proposed action (Alternative 1) as its preferred alternative in order to provide the maximum flood protection to the community of Thousand Palms.

ES.3 Environmental Consequences

A summary of the environmental impacts that would occur as a result of the Thousand Palms Flood Control Project are included in Tables ES-1 and ES-2. Chapter 4 (Environmental Consequences) of this EIR/EIS describes the direct and indirect impacts of the proposed Project and alternatives for each issue area, as well as the mitigation included to avoid or substantially reduce adverse impacts. The unavoidable adverse impacts that would remain after mitigation are summarized in Section 6.3 (Unavoidable Adverse Impact). Chapter 5 (Cumulative Effects) of this EIR/EIS defines the cumulative scenario for each issue area and discusses the incremental impact of the proposed Project and alternatives when considered with other cumulative projects.

Table ES-1. Comparison of Alternatives to the Proposed Project

Issue Area	Proposed Project (Alternative 1)	Removal of Reach 2 (Alternative 2)	Modified Reach 3 (Alternative 3)	No Action (Alternative 4)
Aesthetics	The proposed levees would obstruct views of the desert landscape and use of construction equipment would degrade the existing visual character or quality of the surroundings.	Slightly reduced impacts on views of the desert landscape along Reach 2; construction equipment activity would be slightly reduced.	Essentially the same impacts on views of the desert landscape and reduced visual character or quality as the proposed Project.	Potential future degradation of visual character or quality of surroundings in the event of a large (100-year) storm.
Air Quality and Greenhouse Gases	Construction would result in emissions above the South Coast Air Quality Management District's regional and localized significance thresholds.	Slightly reduced overall truck trips and emissions during construction with Reach 2 removed. O&M activity would also be slightly reduced.	Essentially the same construction and O&M emissions as the proposed Project.	Potential increase in short-term and annual air quality impacts due to clean-up activities in the event of a large (100-year) storm.
Topography, Geology, & Soils	The proposed Project would be designed to withstand, and inspected following, major seismic events. Any repairs would be conducted as part of ongoing O&M. Some sediment would be intercepted and redistributed into the Preserve. Local topography would be altered at the spoil area and within the Preserve.	Essentially the same construction and O&M plan as the proposed Project. Slightly reduced effects on sediment movement and erosion.	Essentially the same as the proposed Project.	A large (100-year) storm event would continue to threaten the area. Flood protection would not be provided, and people in the region would remain at risk of flood related unstable soils or subsidence.
Sand Migration	During construction, the proposed Project would affect sand transport, sorting, and deposition within the wind corridor which supplies the Coachella Valley Preserve; however, implementation of mitigation measures would minimize these impacts. The proposed Project has been designed to minimize obstruction of sand transport by generally placing structures outside of the wind corridor, establishing a clear southern boundary for the Preserve protecting the wind corridor, establishing a 550-acre floodway, and O&M activities to replenish sand on the Preserve. Post construction the Project will increase sand supply by 9 – 14 percent, mainly as a result of the diversion of water and sediment to the east and southeast to the primary sand deposition area by the levee and channel of Reach 1.	Essentially the same construction and O&M plan as the proposed Project. May have slightly greater impacts to sand transport where material is trapped out of the wind corridor at the SCE sub-station. Slightly reduced effects on sand transport, sorting, and deposition within the wind corridor with the removal of Reach 2.	Essentially the same as the proposed Project. Slightly reduced effects on the wind corridor as the northern portion of Reach 3 would be further outside of the wind corridor.	A large (100-year) storm event would continue to threaten the area. The 550-acre floodway would not be established. Development in the wind corridor would contribute to further decreases in fluvial and aeolian sand transport and reduction of viable sand habitat in the Preserve.

Table ES-1. Comparison of Alternatives to the Proposed Project

Issue Area	Proposed Project (Alternative 1)	Removal of Reach 2 (Alternative 2)	Modified Reach 3 (Alternative 3)	No Action (Alternative 4)
Biological Resources	During construction and O&M activities the proposed Project could disturb Coachella Valley milk-vetch or its critical habitat; result in the loss or disturbance to the Coachella Valley fringe-toed lizard, desert tortoise, flat-tailed horned lizard, golden eagle, Townsend's big-eared bat, Nelson's bighorn sheep, Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket, burrowing owl or its habitat, special-status bats and habitat, special-status small mammals and habitat, American badger, desert kit fox, special-status raptors, songbirds, and nesting birds; and could result in the loss of non-listed special-status plants, degradation of native vegetation and habitat, as well as the establishment and spread of invasive weeds, these impacts would be mitigable. Post construction the Project will increase sand supply by 9 – 14 percent, to the Preserve/Refuge and benefit sand dependent.	Alternative 2 would reduce permanent impacts to designated critical habitat for Coachella Valley fringed-toed lizard from 85.72 acres to 81.06 acres and temporary impacts from 23.77 acres to 22.80 acres. However, there is only marginal habitat for CVFTL in Reach 2. Impacts to Coachella Valley milk-vetch (CVMV) Critical Habitat would be same as the proposed Project (Alternative 1). The removal of Reach 2 would reduce disturbance to general wildlife. Impacts to ephemeral drainages and jurisdictional features would be slightly lower with Alternative 2 (0.41 acres less of permanent impacts and 0.02 acres less of temporary impacts).	Alternative 3 would reduce permanent impacts to designated critical habitat for CVFTL from 85.72 acres to 85.32 acres for Option A and from 85.72 acres to 81.54 acres for Option B when compared to the proposed Project. Temporary impacts would also be reduced from 23.77 acres to 23.23 acres for Option A and from 23.77 acres to 22.47 acres for Option B. However, there is only marginal habitat for CVFTL in the portions of Alternative 3 that would be moved, and this species has not been observed in that location. Impacts to Coachella Valley milk-vetch (CVMV) Critical Habitat would be same as the proposed Project (Alternative 1). Permanent impacts to ephemeral drainages and jurisdictional features would be lower for both Option A (4.9 acres less) and Option B (3.33 acres less) of Alternative 3. Temporary impacts would also be lower for both Option A (0.64 acres less) and Option B (0.48 acres less). Option B would have slightly higher permanent (1.57 acres more) and temporary (0.16 acres more) impacts to ephemeral drainages and jurisdictional features than Option A.	Under the No Action Alternative, Project construction would not occur and flood risk to the area would remain. Ongoing sediment removal conducted by the county on Avenue 38 would continue to occur as needed. Sensitive resources found in that location including CVFTL would be subject to periodic loss during sediment removal activities. Without the levee on Reach sediment would continue to be lost from the system as storm flows carry material into developed areas south of the proposed project. Without this material dune communities, would continue to erode with limited soil replenishment. In the event of catastrophic flooding some of the dune areas could be washed away and or repairs and/or construction activities would be expected that could impact sensitive resources.

Table ES-1. Comparison of Alternatives to the Proposed Project

Issue Area	Proposed Project (Alternative 1)	Removal of Reach 2 (Alternative 2)	Modified Reach 3 (Alternative 3)	No Action (Alternative 4)
Cultural and Traditional Cultural Resources	No significant cultural resources are located within the Project Area of Potential Effect. Potential impacts on cultural artifacts would only result from unanticipated or inadvertent discoveries during construction. O&M would be unlikely to adversely affect unidentified cultural or traditional cultural resources.	Slightly reduced potential for discovery and impacts to previously unidentified resources due to the reduced construction and O&M.	Essentially the same as the proposed Project.	Potential unknown buried resources may be inadvertently unearthed or damaged due to ground-disturbing repair or clean-up activities following a large (100-year) storm event.
Land Use and Recreation	A physical barrier would be created in the community of Thousand Palms, although access would be maintained. The Project would displace 126 properties, including 7 residences. Bike paths and trails in the area would also require re-routing. Stormwater flows would be channeled into the existing stormwater conveyance facilities at the Classic Club Golf Course and the Del Webb/Sun City residential development.	Slightly reduces the number of properties displaced from 126 to 123; the same 7 residences would be displaced. Impacts on recreation and trails would be essentially the same.	Essentially the same as the proposed Project but with an increase in the amount of private undeveloped property that would be lost.	No physical barriers would be constructed. No properties would be displaced. Recreation and trails in the region would not be impacted except in the event of a large (100-year) storm event.
Noise	Construction activities would result in substantial ambient noise increases.	Slightly reduced ambient noise increase during construction near Reach 2.	Essentially the same ambient noise increase during construction as the proposed Project.	Potential increase in ambient noise levels due to clean-up activities following a large (100-year) storm event.
Paleontological Resources	The Project is not located on a paleontologically sensitive area. Impacts to buried resources are unlikely during construction or O&M.	Slightly reduced potential for discovery and impacts to previously unidentified resources due to the reduced construction and O&M.	Essentially the same as the proposed Project.	Potential unknown buried resources may be inadvertently unearthed or damaged due to natural processes or ground-disturbing repair or clean-up activities following a large (100-year) storm event.
Public Safety	The Project would construct levees and channels for the purpose of flood control and would not increase demand for fire or police protection. Standard measures for reducing fire risk, refueling practices, worker training, and waste management would mitigate potential for spills or inadvertent releases.	Slightly reduced potential for spills or inadvertent releases due to the reduced construction and O&M.	Essentially the same potential for spills or other inadvertent releases as the proposed Project	A large (100-year) storm event may damage infrastructure, including government facilities related to police or fire protection. This could increase demand for rescue services, negatively affect response times, and require the construction of new facilities. Spills or inadvertent releases may also occur during clean-up activities.

Table ES-1. Comparison of Alternatives to the Proposed Project

Issue Area	Proposed Project (Alternative 1)	Removal of Reach 2 (Alternative 2)	Modified Reach 3 (Alternative 3)	No Action (Alternative 4)
Socioeconomics and Environmental Justice	The Project would displace 7 homes, affecting 0.2% of the total housing supply, and 0.2% of the total population within the Thousand Palms CDP. The Project may indirectly induce growth in the region by removing barriers to future development; however, development in the region is currently not prohibited, and has proceeded without the Project.	Essentially the same as the proposed Project. Would reduce the number of affected properties from 126 to 123; the same 7 residences would be displaced.	Essentially the same as the proposed Project but with an increase in the amount of private undeveloped property that would be lost.	Residents would continue to be exposed to risk of a 100-year flood event. Future flooding could negatively impact unprotected residential development and potentially displace a substantial number of people or housing, depending on the severity of damage.
Transportation	Construction would require a substantial number of truck trips, which would impact local roadways. Permanent realignment of Avenue 38 and temporary closures to certain streets would also be necessary. Periodic O&M trips would not substantially impact local roadways.	Slightly reduced truck trip volume, and roadways near Reach 2 would not be impacted. O&M activity would be slightly reduced.	Essentially the same impacts on local roadways as the proposed Project.	Potential increase in truck trips within the greater Thousand Palms region due to clean-up activities in the event of a large (100-year) storm event.
Water Resources	Construction of the Project would protect large areas of the Thousand Palms community from 100-year flood flows. Erosion and sedimentation would be sustainably altered.	Flood protection would be slightly reduced due to the removal of the Reach 2 levee. SCE Mirage substation would be vulnerable to inundation during a 100-year flood event.	Essentially the same flood protection as the proposed Project.	A large (100-year) storm event would continue to threaten the area. Flood protection would not be provided, and future development would need additional mitigation and design changes to accommodate for flooding.
Tribal Cultural Resources	No significant cultural resources are located within the Project Area of Potential Effect. Potential impacts on tribal cultural artifacts would only result from unanticipated or inadvertent discoveries during construction. O&M would be unlikely to adversely affect unidentified tribal cultural resources.	Slightly reduced potential for discovery and impacts to previously unidentified resources due to the reduced construction and O&M.	Essentially the same as the proposed Project.	Potential unknown buried resources may be inadvertently unearthed or damaged due to ground-disturbing repair or clean-up activities following a large (100-year) storm event.
Energy	Construction of the Project is designed to encourage efficient use of resources, including reuse of Project site materials to minimize imports and an on-site concrete batch plant to minimize off-site waste disposal. O&M would recycle eroded materials to upstream/upwind Project areas.	Essentially the same as the proposed Project, which is not considered wasteful, inefficient, or will unnecessarily consume energy resources.	Essentially the same as the proposed Project, which is not considered wasteful, inefficient, or will unnecessarily consume energy resources.	Potential increase in energy consumption within the greater Thousand Palms region due to clean-up and repair activities in the event of a large (100-year) storm event.

Table ES-1. Comparison of Alternatives to the Proposed Project

Issue Area	Proposed Project (Alternative 1)	Removal of Reach 2 (Alternative 2)	Modified Reach 3 (Alternative 3)	No Action (Alternative 4)
Wildfire	Construction and maintenance would require temporary closure and disruptions to roads and/or travel lanes and truck trips could temporarily impede emergency vehicle movements. The Project area is not located in a moderate, high, or very high FHSZ or landslide zone and is therefore not a risk of wildfires or landslides. All hazardous chemicals will be stored appropriately on-site. Periodic O&M trips would not substantially impact local roadways.	Slightly reduced truck trip volume and temporary roadway closures near Reach 2. O&M activity would also be slightly reduced.	Essentially the same impacts on local roadways as the proposed Project.	In the event of a catastrophic flood (100-year event), adverse impacts are not anticipated to be influenced by, or exacerbated by, wildfire.

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
Aesthetics				
AS-1: The Project could cause an adverse effect to a scenic vista.	Class I	Class I	Class I	EC V-1 (Design consistent with Surroundings)
AS-2: The Project could degrade the existing visual character or quality of the site and its surroundings.	Class I	Class I	Class I	EC V-1 (Design Consistent with Surroundings) EC N-1 (Locate Construction Activities to Avoid Sensitive Receptors)
AS-3: Project construction could create a new source of substantial light or glare.	Class II	Class II	Class II	MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)
AS-4: Project operation could create a new source of substantial light or glare.	Class III	Class III	Class III	None required.
Air Quality and Greenhouse Gases				
AQ-1: The Project could conflict with approved ambient air quality plans.	Class III	Class III	Class III	None required.
AQ-2: Project construction emissions could exceed SCAQMD regional significance thresholds.	Class I	Class I	Class I	EC AQ-1 (Concrete Batch Plant) MM AQ-1 (Construction Off-road Equipment Engines)
AQ-3: Project operation emissions could exceed SCAQMD regional significance thresholds.	Class III	Class III	Class III	None required.
AQ-4: Project construction emissions could exceed SCAQMD Localized Significance Thresholds.	Class I	Class I	Class I	MM AQ-1 (Construction Off-road Equipment Engines)
AQ-5: Project operation emissions could exceed SCAQMD Localized Significance Thresholds.	Class III	Class III	Class III	None required.
AQ-6: Project toxic air contaminant emissions could cause SCAQMD health risk thresholds to be exceeded.	Class I	Class I	Class I	EC AQ-1 (Concrete Batch Plant) MM AQ-1 (Construction Off-road Equipment Engines) MM AQ-2 (Operation Off-road Equipment Engines)
AQ-7: Project earthmoving activities could significantly increase the incidence of Valley Fever.	Class III	Class III	Class III	None required.
AQ-8: Project construction or operation could create substantial nuisance odors.	Class III	Class III	Class III	None required.

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
GHG-1: The Project could produce GHG emissions that exceed the SCAQMD CO_2e annualized significance threshold.	Class III	Class III	Class III	None required.
GHG-2: The Project could conflict with State and Local GHG emissions reduction plans.	Class III	Class III	Class III	EC GHG-1 (Construction Waste Recycling)
Topography, Geology, and Soils				
G-1: Project structures could be damaged by surface fault rupture and expose people or structures to hazards.	Class III	Class III	Class III	EC G-1 Design and Inspect for Major Seismic Event
G-2: Project structures could be damaged by seismically induced ground shaking and/or ground failure, exposing people or structures to hazards.	Class III	Class III	Class III	EC G-1 Design and Inspect for Major Seismic Event
G-3: Erosion could be triggered or accelerated due to construction activities.	Class III	Class III	Class III	EC SM-1 Inspect and Remove Accumulated Blowsand Material EC SM-2 Implement Adaptive Management Plan EC W-2 Limit Construction During Precipitation Events
G-4: Project features could alter the existing topography resulting in adverse effects.	Class III	Class III	Class III	None required.
Sand Migration				
SM-1: The Project could affect sand source areas, fluvial transport of sand to source areas, and supply of sand to the wind corridor.	Class II	Class II	Class II	EC SM-1 (Sand Removal and Distribution or Disposal) EC SM-2 (Adaptive Management Plan) MM SM-1 (Minimize Sand Impacts) MM SM-2 (Prepare and Implement a Sand Migration Management Plan)
SM-2: The Project could affect aeolian sand transport, sand sorting processes, and sand deposition.	Class II	Class II	Class II	EC SM-1 (Sand Removal and Distribution or Disposal) EC SM-2 (Adaptive Management Plan) MM SM-1 (Minimize Sand Impacts) MM SM-2 (Prepare and Implement a Sand Migration Management Plan)
SM-3: The Project could result in stormwater runoff onto blowsand habitat in the Coachella Valley Preserve	Class III	Class III	Class III	None required.

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
SM-4: The Project could affect sand transport through the stabilization of sand.	Class II	Class II	Class II	EC SM-1 (Sand Removal and Distribution or Disposal) EC SM-2 (Adaptive Management Plan) MM SM-1 (Minimize Sand Impacts) MM SM-2 (Prepare and Implement a Sand Migration Management Plan)
Biological Resources				
BIO-1: The Project could disturb Coachella Valley milk-vetch or its critical habitat.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste) MM BIO-1 (Conduct Pre-construction Biological Resources Surveys) MM BIO-2 (Conduct Biological Monitoring and Reporting) MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program) MM BIO-4 (Minimize Native Vegetation and Habitat Loss) MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas) MM BIO-6 (Compensate for Habitat Loss) MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan) MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan) MM BIO-9 (Minimize and Mitigate Impacts to Special-status Plants)
BIO-2: The Project could result in the loss of non-listed special-status plants.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-9

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
BIO-3: The Project could result in loss or disturbance to Coachella Valley fringe-toed lizard.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8 MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan) MM BIO-11 (Conduct Coachella Valley Fringe-toed Lizard and Flat-tailed Horned Lizard Surveys, Monitoring, and Avoidance)
BIO-4: The Project could result in loss or disturbance to desert tortoise.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10 MM BIO-12 (Conduct Desert Tortoise Surveys, Monitoring, and Avoidance and Prepare a Desert Tortoise Relocation Plan) MM BIO-13 (Prepare and Implement Raven Monitoring, Management, and Reporting Plan)
BIO-5: The Project could result in loss or disturbance to flat-tailed horned lizard.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10, and BIO-11
BIO-6: The Project could result in disturbance to golden eagle.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
BIO-7: The Project could result in disturbance to Townsend's big-eared bat.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-2 through BIO-8, BIO-10 MM BIO-15 (Prepare and Implement a Nesting Bird Management Plan)
BIO-8: The Project could result in disturbance to Nelson's bighorn sheep or Mountain lion.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10
BIO-9: The Project could result in the loss of Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10
BIO-10: The Project would result in the loss of burrowing owl or its habitat.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10 BIO-14 (Conduct Surveys and Avoidance for Burrowing Owl) BIO-15 (Prepare and Implement a Nesting Bird Management Plan)
BIO-11: The Project could result in disturbance to special-status raptors and songbirds.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10, and BIO-15

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
BIO-12: The Project could result in disturbance of nesting birds.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10, and BIO-15
BIO-13: The Project could result in mortality of, and loss of habitat for, special-status bats.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10, BIO-15 BIO-16 (Conduct Surveys and Avoidance for Bat Roosts)
BIO-14: The Project could result in mortality of, and loss of habitat for, special-status small mammals.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10 BIO-17 (Conduct Surveys and Avoidance for Special-status Small Mammals)
BIO-15: The Project could result in mortality of American badger or desert kit fox.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10 BIO-18 (Conduct Surveys and Avoidance for American Badger and Desert Kit Fox)

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
BIO-16: The Project would result in temporary and permanent loss and degradation of native vegetation and habitat.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC W-1 (Hazardous Spills) EC SM-1 (Sand Removal and Distribution or Disposal) EC SM-2 (Adaptive Management Plan) MM PS-2 through PS-4 MM SM-1 (Minimize Sand Impacts) MM SM-2 (Prepare and Implement a Sand Migration Management Plan) MM BIO-2 through BIO-8 BIO-19 (Minimize and Mitigate Impacts to Jurisdictional Waters)
BIO-17: The Project could result in the establishment and spread of invasive weeds.	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) MM BIO-4, BIO-5, BIO-7, and BIO-8
BIO-18: The Project would cause the loss or degradation of habitat for wildlife or result in disturbance to wildlife in adjacent habitat.	Class III	Class III	Class III	EC B-1 (Weed Abatement Program) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, and BIO-19
BIO-19: The Project would result in impacts to jurisdictional waters and downstream habitat.	Class II	Class II	Class II	MM BIO-6 and BIO-19
BIO-20: The Project would interfere with wildlife movement.	Class III	Class III	Class III	None proposed
BIO-21: The Project could conflict with the CVMSHCP.	Class III	Class III	Class III	None proposed
Cultural and Tribal Cultural				
CUL-1: The Project could cause a substantial adverse change in the significance of a cultural resource.	Class III	Class III	Class III	EC C-1 (Unanticipated Discoveries) EC C-2 (Cultural Resources Monitoring) EC C-3 (Cultural Resources Worker Environmental Awareness Program)
CUL-2: The Project could disturb human remains, including those interred outside of formal cemeteries.	Class III	Class III	Class III	EC C-1 (Unanticipated Discoveries) EC C-2 (Cultural Resources Monitoring) EC C-3 (Cultural Resources Worker Environmental Awareness Program)
CUL-3: The Project could cause a substantial adverse change in the significance of a Traditional Cultural Property.	Class II	Class II	Class II	EC C-1 (Unanticipated Discoveries) MM CUL-1 (Tribal Cultural Resources Monitoring)

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
Land use and Recreation				
L-1: Construction of the Project could create a physical barrier between residences in the community of Thousand Palms.	Class III	Class III	Class III	None required.
L-2: The Project could conflict with applicable land use policies.	Class II	Class II	Class II	EC L-2 (Coordinate with California State Lands Commission) EC AQ-1 (Concrete Batch Plant) EC GHG-1 (Construction Waste Recycling) EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors) EC N-2 (Use Proper Mufflers) EC P-1 (Design Channels with Fencing) MM AQ-1 (Off-Road Equipment Engines) MM N-1 (Address Construction Noise Complaints) MM N-2 (Coordinate Construction with Xavier Preparatory High School) MM PS-1 (Standard Measures to Reduce Fire Risk) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste) MM PS-5 (Worker Environmental Awareness Program)
L-3: Construction of the Project could permanently disrupt or displace existing residential and recreational land uses.	Class I	Class I	Class I	EC L-1 (Incorporate Recreational Uses and Educational Signs to Protect Sensitive Habitats) EC L-2 (Coordinate with California State Lands Commission) MM L-1 (Identify and Provide Noticing of Alternate Recreation Areas) MM N-1 (Address Construction Noise Complaints) MM N-2 (Coordinate Construction with Xavier Preparatory High School) MM TR-3 (Notification to Property Owners and Tenants)
L-4: The Project could traverse Farmland but not result in conflicts with the County's Residential-Agriculture zoning designation.	Class III	Class III	Class III	None required.

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
Noise				
N-1: Construction and O&M activities may be inconsistent with the Riverside County Noise Ordinance or General Plan.	Class III	Class III	Class III	EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors) EC N-2 (Use Proper Mufflers) MM N-1 (Address Construction Noise Complaints) MM N-2 (Coordinate Construction with Xavier Preparatory High School)
N-2: Vibration from temporary construction equipment use or from Project operation could substantially disturb sensitive receptors or cause damage to structures.	Class III	Class III	Class III	None required.
N-3: Project construction and O&M could expose workers to excessive airport noise.	Class III	Class III	Class III	None required.
Paleontological Resources				
PR-1: Construction of the Project could destroy or disturb significant paleontological resources.	Class II	Class II	Class II	MM PR-1 (Paleontological Training) MM PR-2 (Unanticipated Discovery of Paleontological Resources)
Public Safety				
PS-1: The Project could trigger wildland fires.	Class II	Class II	Class II	MM PS-1 (Standard Measures to Reduce Fire Risk)
PS-2: The Project could present potential dangers to the public or attract the public to a potentially hazardous area.	Class III	Class III	Class III	EC P-1 (Design Channels with Fencing)
PS-3: The Project could expose people or the environment to adverse effects from hazardous material use, transport, storage, or disposal.	Class II	Class II	Class II	EC W-1 (Hazardous Spills) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste)
PS-4: The Project could expose students to hazardous emissions or acutely hazardous materials.	Class II	Class II	Class II	EC W-1 (Hazardous Spills) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste)
PS-5: Project construction could encounter unknown environmental contamination and expose construction workers and the public.	Class II	Class II	Class II	MM PS-5 Phase I Environmental Site Assessment MM PS-6 Worker Environmental Awareness Program

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
Socioeconomics				
S-1: Project components could displace a substantial number of people or housing.	Class III	Class III	Class III	None required.
S-2: The Project could increase demand for housing.	Class III	Class III	Class III	None required.
S-3: Project components may indirectly induce population growth by protecting non-built out areas from flood hazards.	Class III	Class III	Class III	None required.
S-4: Project effects could be disproportionately borne by minority or low-income populations.	N/A	N/A	N/A	None required.
S-5: Project implementation could result in community economic effects.	N/A	N/A	N/A	None required
Transportation				
TR-1: The Project could substantially decrease effectiveness or the performance of the freeway system.	Class III	Class III	Class III	EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)
TR-2: Project construction trips and activities could substantially decrease performance of the local roadway system.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-2 (Traffic Control Plan for Lane Closures and Detours) MM TR-3 (Notification to Property Owners and Tenants)
TR-3: Project maintenance trips could substantially decrease performance of the local roadway system.	Class II	Class II	Class II	EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-3 (Notification to Property Owners and Tenants)
TR-4: Construction activities which result in roadway disruption, use, or improvements could conflict with alternative transportation plans.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-2 (Traffic Control Plan for Lane Closures and Detours)
TR-5: Construction or operation could result in excessive VMT.	Class II	Class II	Class II	EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan)

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
TR-6: Construction or operation could increase hazards due to a design feature or incompatible use or otherwise result in unsafe conditions on public roads.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-2 (Traffic Control Plan for Lane Closures and Detours) MM TR-3 (Notification to Property Owners and Tenants) MM TR-4 (Pavement Rehabilitation)
TR-7: Project activities could result in damage to roads.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-4 (Pavement Rehabilitation)
TR-8: Project construction may require temporary roadway disruptions.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-2 (Traffic Control Plan for Lane Closures and Detours)
TR-9: Construction or operation could temporarily restrict access to or from adjacent land uses and/or restrict the movements of emergency vehicles with no reasonable alternative access routes.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-2 (Traffic Control Plan for Lane Closures and Detours) MM TR-5 (Coordinate with Emergency Service Providers)
Water Resources				
W-1: Construction, operation, and maintenance of the Project could degrade water quality and violate water quality standards or waste discharge requirements.	Class II	Class II	Class II	EC W-1 (Hazardous Spills) EC W-2 (Limit Construction During Precipitation Events) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste) MM PS-5 (Phase I Environmental Site Assessment) MM PS-6 (Worker Environmental Awareness Program)

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
W-2: Construction and operation of the Project could substantially deplete groundwater supplies, interfere with groundwater recharge, and/or result in contamination of groundwater resources.	Class II	Class II	Class II	EC W-1 (Hazardous Spills) EC W-2 (Limit Construction During Precipitation Events) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste) MM PS-5 (Phase I Environmental Site Assessment) MM PS-6 (Worker Environmental Awareness Program)
W-3: Construction and operation of the Project could substantially deplete or contaminate a public water supply.	Class II	Class II	Class II	EC W-1 (Hazardous Spills) EC W-2 (Limit Construction During Precipitation Events) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste) MM PS-5 (Phase I Environmental Site Assessment) MM PS-6 (Worker Environmental Awareness Program)
W-4: Construction and operation of the Project could substantially alter existing drainage patterns or surface runoff which could result in flooding, erosion, and sedimentation on or off site.	Class IV	Class IV	Class IV	EC SM-1 (Sand Removal and Distribution or Disposal) EC SM-2 (Adaptive Management Plan)
W-5: The Project could impact existing or planned stormwater drainage systems.	Class III	Class III	Class III	None required.
W-6: Construction and operation of the Project would impede or redirect flows within a 100-year flood hazard area mapped by FEMA.	Class IV	Class IV	Class IV	None required.
W-7: Construction and operation of the Project would remove downstream areas from the FEMA flood hazard zone.	Class IV	Class IV	Class IV	None required.
Tribal Cultural Resources				
TCR-1: The Project could cause a substantial adverse change in the significance of a tribal cultural resource.	Class II	Class II	Class II	EC C-1 (Unanticipated Discoveries) MM TCR-1 (Tribal Cultural Resources Monitoring)
Energy				
E-1: Project could be wasteful, inefficient, or unnecessarily consume energy resources.	Class III	Class III	Class III	None required.

Table ES-2. Summary of Significant CEQA Impacts and Mitigation Measures

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
E-2: Project could conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Class III	Class III	Class III	None required.
Wildfire				
WF-1: Construction or operation could temporarily restrict access to or from adjacent land uses and/or restrict the movements of emergency vehicles with no reasonable alternative access routes.	Class II	Class II	Class II	None required.
WF-2: Due to slope, prevailing winds, and other factors, the project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	Class III	Class III	Class III	EC B-1 (Weed Abatement Program) EC W-1 (Hazardous Spills) MM PS-1 (Standard Measures to Reduce Fire Risk) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-5 (Worker Environmental Awareness Program)
WF-3: Construction of the Project could exacerbate fire risk from new infrastructure.	No Impact	No Impact	No Impact	None required.
WF-4: The Project would not expose people or structures to significant post-fire flood or landslide risks.	No Impact	No Impact	No Impact	None required.

ES.3.1 Major Conclusions

Many of the technical issue area analyses determined that impacts associated with the proposed Project (Alternative 1) and the action alternatives (Alternatives 2 and 3) would be essentially the same for levee/channel construction and for operation and maintenance activities. Notable differences among the impact discussions were attributed to the reduced impact area with the removal of Reach 2 under Alternative 2 and the reduced impacts to jurisdictional waters under Alternative 3, Option A. Major conclusions include the following:

- **Aesthetics.** The Project area is known for is open desert landscapes, scattered rural residences, and sand dunes. The levees constructed under Alternatives 1, 2, and 3 would partially obstruct foreground views of the desert landscape for residences located in close proximity to the Reach 1 levee, as well as for recreationists using the regional trails located near Reach 1 and Reach 3 due to the height of the levees (up to 14 feet tall). The use of large construction equipment and obstruction of desert views would also degrade the existing visual character or quality of the surroundings. The No Action Alternative would avoid obstructing desert views; however, could result in greater degradation of the existing visual character of the Project area in the event of catastrophic flooding, which would impact a much greater area (see Figure 1-3, FEMA Flood Hazard Areas).
- **Air Quality and Greenhouse Gases.** Construction would result in emissions above the South Coast Air Quality Management District's regional and localized significance thresholds. Compared with the proposed Project, Alternative 2 would reduce the number of overall truck trips and work involved to construct the Project, such that the air pollutant emissions during construction would be reduced. Operations and Maintenance (O&M) activities would also be reduced as no sand removal along Reach 2 would be required. Alternative 3 would result in essentially the same impacts to air quality and GHG as the proposed Project, as the realignment of Reach 3 would not noticeably change the overall length of the levee and associated construction and O&M work. The No Action Alternative would likely result in increases in short-term and annual air quality impacts associated with cleanup activities in the event of a large (100-year) storm event, which could exceed those of Alternatives 1, 2, and 3 when considering the extent of the impacts (see Figure 1-3).
- **Sand Migration.** The proposed Project and alternatives have been designed to reduce flooding below the levees and channels while enhancing sand transport to the Coachella Valley Preserve and Wildlife Refuge. The proposed Project and alternatives would establish clear boundaries for the Preserve/Refuge, enhance aeolian processes for sand transport, preserve an approximately 550-acre floodway area, and replenish sand on the Preserve/Refuge during the O&M by collecting material that accumulates along the Project facilities and redistributing it at a location within the active wind corridor where the material will be available to the Preserve/Refuge. Under baseline conditions, some of this material would travel downwind/downstream from protected habitat areas under the No Action Alternative. Implementation of Alternatives 1, 2, and 3 would have temporary impacts on sand source areas, fluvial transport, and sand supply (including aeolian sand transport, sorting, and deposition) to the wind corridor that supplies the Preserve/Refuge; however, these impacts are mitigable. Post construction the Project and alternatives would increase sand supply to the Preserve/Refuge by 9 – 14 percent, mainly as a result of the diversion of water and sediment to the east and southeast to the primary sand deposition area by the levee and channel of Reach 1 (Lancaster, 2015). Alternative 2, which would remove Reach 2, is not expected to alter the wind corridor but could reduce the amount of sediment that is transported through the system. Sediment flowing from Reach 1 may become trapped along the northern border of the SCE sub-station or become lost to the system if sediment accumulates in this area. Under Option A of Alternative 3, sand supply, and fluvial transport would be somewhat reduced as compared to the proposed Project

because of the orientation of the levee in this reach. Option B of Alternative 3 would tilt Reach 3 even more to the west-southwest moving the northwest end of the reach further outside of the wind corridor (see Figure 2-9, Alternative 3a and 3b Alignments) reducing impacts to sand source, sand supply, and fluvial transport.

- **Biological Resources.** The proposed Project and alternatives have been designed to reduce flooding below the levees and channels while enhancing sand transport to the Coachella Valley Preserve and Wildlife Refuge. The proposed Project and alternatives would establish clear boundaries for the Preserve/Refuge, enhance aeolian processes for sand transport for sand dependent species such as the Coachella Valley milk-vetch and the Coachella Valley fringed-toed lizard, preserve an approximately 550-acre floodway area, and replenish sand on the Preserve/Refuge during the O&M by collecting material that accumulates along the Project facilities and redistributing it at a location within the active wind corridor where the material will be available to the Preserve/Refuge. Post construction the Project and alternatives would increase sand supply to the Preserve/Refuge by 9 – 14 percent, mainly because of the diversion of water and sediment to the east and southeast to the primary sand deposition area by the levee and channel of Reach 1. Under baseline conditions this some of this material would travel downwind/downstream from protected habitat areas under the No Action Alternative.

  Compared to the proposed Project, Alternative 2 would reduce permanent impacts to designated critical habitat for Coachella Valley fringed-toed lizard (CVFTL) from 85.72 acres to 81.06 acres and reduce temporary impacts from 23.77 acres to 22.80 acres. Implementation of Alternative 3 would reduce permanent impacts to designated critical habitat for CVFTL from 85.72 acres to 85.32 acres for Option A and from 85.72 acres to 81.54 acres for Option B when compared to the proposed Project. Alternative 3 would also reduce temporary impacts to designated critical habitat from 23.77 acres to 23.23 acres for Option A and from 23.77 acres to 22.47 acres for Option B. However, there is only marginal habitat for CVFTL in Reach 2 and the portions of Alternative 3 that would be moved, and this species has not been observed in that location. Critical habitat has been designated in much of these areas to support sand transport which is benefited by the proposed Project.

  Impacts to Coachella Valley milk-vetch critical habitat would be same for the proposed Project (Alternative 1), Alternative 2, and Alternative 3 (both Option A and B). As a result of implementing the Project, there will be 11.01 acres of permanent impacts and 3.31 acres of temporary impacts to designated critical habitat for Coachella Valley milk-vetch.

  Compared to the proposed Project, permanent impacts to ephemeral drainages and jurisdictional features would be slightly lower with Alternative 2 (0.41 acres less) and for Alternative 3 Option A (4.9 acres less) and Option B (3.33 acres less). Option B of Alternative 3 would have slightly higher permanent impacts (1.57 acres more) to ephemeral drainages and jurisdictional features than Option A. Temporary impacts to ephemeral drainages and jurisdictional features would also be slightly lower with Alternative 2 (0.02 acres less) and for Alternative 3 Option A (0.64 acres less) and Option B (0.48 acres less). Option B of Alternative 3 would have slightly higher temporary impacts (0.16 acres more) to ephemeral drainages and jurisdictional features than Option A.

  Alternatives 1, 2, and 3 could disturb Coachella Valley milk-vetch or its critical habitat; result in the loss or disturbance to the Coachella Valley fringe-toed lizard, desert tortoise, flat-tailed horned lizard, golden eagle, Townsend's big-eared bat, Nelson's bighorn sheep, Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket, burrowing owl or its habitat, special-status bats and habitat, special-status small mammals and habitat, American badger, desert kit fox, special-status raptors, songbirds, and nesting birds; and could result in the loss of non-listed special-status plants,

degradation of native vegetation and habitat, as well as the establishment and spread of invasive weeds. However, these impacts would be mitigable.

- **Land Use and Recreation.** Implementation of Alternatives 1, 2, and 3 would permanently displace existing residential and recreational land uses. Within Reach 1, 7 residential properties would be displaced (same for all action alternatives), and in Reach 3 the northern and eastern portions of the Pegasus Therapeutic Riding facility would be impacted, permanently effecting this business, and potentially requiring it to relocate, as well the northeast corner of the Xavier College Preparatory High School (this would not directly affect the existing athletic fields or school buildings). These impacts in Reach 3 are the same for Alternatives 1, 2, and 3. The proposed Project would directly impact a total 126 total properties; Alternative 3 would impact essentially the same number of properties. The removal of Reach 2 under Alternative 2 would reduce the total properties by three (123). Alternatives 1, 2, and 3 would also permanently impact the Classic Club Golf Course to tie the Reach 4 channel into the golf course's existing stormwater conveyance system, and temporarily impact the trails within the detention basin/greenbelt of the Del Webb/Sun City development. Additionally, Reaches 1 and 3 would bisect a regional trail (see Figure 3.8-4, Recreational Resources), which may limit the through-access of the trail or require rerouting of the trail. The Class 1 bike path along Washington Street would also be temporarily impacted during Project construction activities under Alternatives 1, 2, and 3. Under the No Action Alternative, no properties would be acquired and recreational trails would not be impacted.
- **Noise.** Construction of Alternatives 1, 2, and 3 would result in substantial temporary increases in ambient noise levels above levels existing without the Project. This impact would be slightly reduced under Alternative 2, as Reach 2 would not be constructed, but would be essentially the same under Alternative 3. Mitigation has been proposed to reduce this impact to the extent feasible. Under the No Action Alternative, noise associated with Project construction and O&M would not occur; however, cleanup activities in the event of catastrophic flooding would impact the ambient noise levels of the area and could result in adverse impacts to a much larger portion of the Thousand Palms community.
- **Transportation.** Construction of Alternatives 1, 2 and, 3 would result is a substantial number of truck trips to transport material from Reaches 3 and 4 to Reaches 1, 2, and 3, as well as transport soil cement from the cement batch plant. These truck trips would occur on local roadways, several of which are narrow, rural, residential streets, with both sign controlled and uncontrolled intersections, and as such the performance of the local roadway system would be severely impacted. Construction of the Project would also require temporary closure of Avenue 38 for realignment and temporary lane/road closures to Via Las Palmas, Washington Boulevard, and other roadways. Construction activities under Alternative 2 would be reduced compared to Alternative 1 or 3, in so far as roads accessing Reach 2, including Vista De Oro, would no longer be impacted, and the total volume of truck trips may be reduced. Temporary O&M trips under Alternatives 1, 2, and 3 would not substantially affect the local roadway system with implementation of the recommended mitigation measures. Under the No Action Alternative, no truck trips related to the Project would occur; however, in the event of catastrophic flooding, repair activities and related truck trips would occur throughout a much greater area of Thousand Palms, although the extent is unknown.
- **Water Resources.** While implementation of the proposed Project or any of the action alternatives would alter the existing drainage patterns and surface runoff within the Project area, as well as redirect flows within a 100-year flood hazard area mapped by FEMA, these impacts are considered beneficial as redirecting storm flows would protect homes and businesses from the 100-year flood and would divert stormwater flows into an existing conveyance system with adequate capacity. The

pattern of erosion and sedimentation in the Project area would be substantially altered; however, the wind transport corridor within the Preserve/Refuge would be largely undisturbed and may benefit from an increased sand supply. Sand deposition along the toes of the levees and within the channelized reaches would be removed, distributed, and adaptively managed to not disrupt the existing sand transport capacity of the Project area, which would be a beneficial impact. Waters of the U.S. or waters of the State would be impacted by O&M activities because these features would occur at the toe of the levee. However, sand would be redistributed to upland areas.

ES.3.2 Areas of Controversy

Public input on the Project and the environmental issues of concern were sought during the Project's scoping period, which commenced on November 9, 2016 for NEPA and November 18, 2016 for CEQA and ended December 19, 2016. A public scoping meeting was held on December 6, 2016. Comments received during the scoping period identified the following concerns:

- Impacts to the Classic Club Golf Course, including whether the existing design of the stormwater conveyance facility could accept the flood flows, how sediment would be controlled, and who would be responsible for repairs and cleanup of the golf course following a flood event.
- Lack of mitigation and flooding damage to Ramon Road south of Reaches 1 and 2.
- Impacts to ephemeral waters of the U.S.
- Protection of biological resources in the Project area including the federally threatened Coachella Valley fringe-toed lizard; occupied and designated critical habitat for the federally endangered Coachella Valley milk-vetch; and the Thousand Palms conservation area designated under the Coachella Valley Multiple Species Habitat Conservation Plan, which includes the Coachella Valley Preserve (Preserve) and the Coachella Valley National Wildlife Refuge (Refuge).
- Potential to alter fluvial, aeolian, and hydrological processes resulting in potential loss of blow sand.
- Potential to impact existing transmission lines in proximity to the Project alignment.
- Impacts and take of private lands.
- Effectiveness of road crossings during a flood event, specifically those proposed at Desert Moon Drive and Via Las Palmas.

The key issues that were identified during scoping are further described in Appendix A (Public Scoping), and are addressed throughout the EIR/EIS, including Chapter 2 (Proposed Project and Alternatives) and the impact analysis within Chapter 4 (Environmental Consequences).

ES.3.3 Issues to Be Resolved

The CVWD recognizes that the realignment of Avenue 38 as proposed would shift the intersection of Avenue 38 and Varner Road to the southeast. As such, the current left turn lane on Varner Road would no longer line up with Avenue 38. Restriping and/or a new left turn lane on Varner Road for accessing Avenue 38 may be required by the County of Riverside, either as part of the Project or as part of the development of the residential projects proposed in the area, specifically the Mirasera or Valante Specific Plan developments. The CVWD will coordinate with the County, as necessary, to assess any proposed requirements.

1. Introduction

The Coachella Valley Water District (CVWD) and the United States Army Corps of Engineers (Corps) regulatory division have prepared this joint Environmental Impact Report (EIR) and Environmental Impact Statement (EIS) (collectively referred to as the "EIR/EIS") to identify and evaluate the potential environmental impacts associated with implementation of the proposed Thousand Palms Flood Control Project ("Project" or "Proposed Action"). This EIR/EIS has been prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) (PRC Sections 21000-21178; Title 14 CCR, Section 753, and Chapter 3, Sections 15000-15387) and the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508). The CEQA Lead Agency for this Project is the CVWD and the NEPA Lead Agency is the Corps. The USFWS issued a Biological Opinion for the proposed Project on September 27, 2022 (see Appendix C.6).

1.1 Project Location

The proposed Project includes flood control improvements intended to reduce flooding hazards associated with coalescing alluvial fans (broad or open land surface where sediments that had accumulated at the mouth of a canyon has been distributed across the surface, typically during major flood events) in the area between the Indio Hills (to the north) and Interstate 10 (I-10) (to the south), in the southeastern portion of Riverside County, California. Figure 1-1 (Proposed Project Vicinity) shows the regional location for the proposed Project, while Figure 1-2 (Proposed Project Alignment) shows the proposed Project alignment, which includes four segments referred to as Reaches 1 through 4, as described below.

The Project is located in the unincorporated community of Thousand Palms, approximately ten miles east of the City of Palm Springs and immediately north of the City of Palm Desert, within the Coachella Valley. The Project is located within the Whitewater River Basin (Indio Subbasin). The Whitewater River is the main drainage course in the Coachella Valley, originating on the southerly slopes of the San Bernardino Mountains and flowing in a southeasterly direction through the valley to the Salton Sea (USACE, 2000).

Reach 1 is the northernmost element of the proposed Project, located closest to the Indo Hills and generally north of residential development. The Reach 1 levee extends 2.4-miles in an east-southeasterly direction beginning near the intersection of 28th Avenue and Rio del Sol Road, and generally running parallel and north of an existing Southern California Edison (SCE) utility corridor.

Reach 2 levee is located south of the east end of Reach 1, east of residential development along Vista de Oro and north of SCE's Mirage Substation and extends 0.33 mile in a south-southeasterly direction.

Reach 3 includes a 1.23-mile levee and a 1.01-mile trapezoidal channel, and begins south and east of Reach 2, east of residential development along Chiricahua Drive, and extends in a south-southeasterly direction to the Classic Club Golf Course. The Reach 3 channel would divert flows into an existing storm water conveyance system located on the Classic Club Golf Course before connecting to Reach 4.

Reach 4 is comprised of a 2-mile trapezoidal channel extending from the southeastern end of the Classic Club Golf Course, paralleling and south of the existing Avenue 38 alignment, to Washington Street where it would tie into existing stormwater conveyance facilities located in the Del Webb/Sun City residential development. Sand excavated as part of the proposed Project that is suitable blowsand material would be placed at a blowsand augmentation area on the Coachella Valley National Wildlife Refuge (see Figure 1-2). Other excavated materials (from the Reach 4 channel) would be placed south of

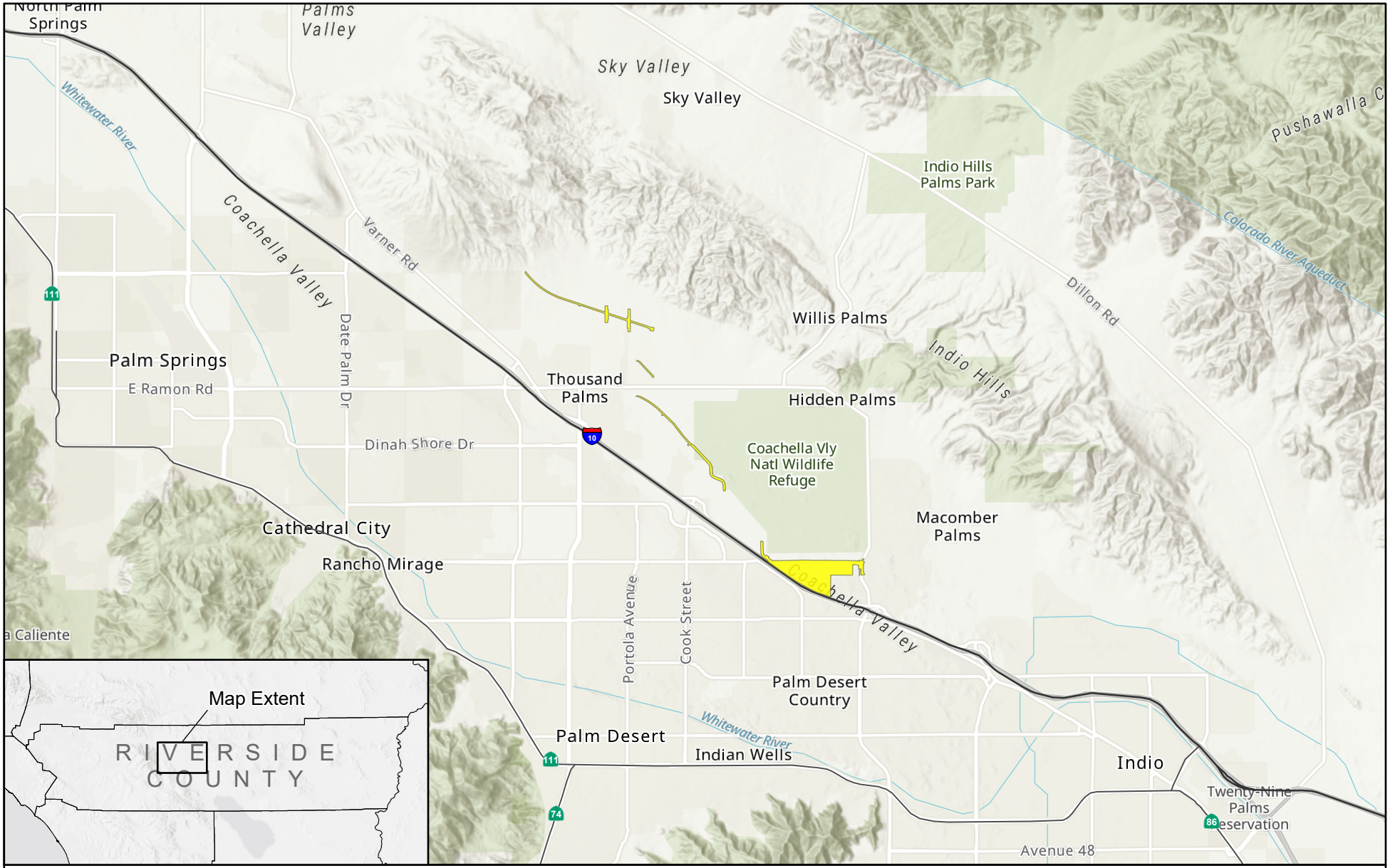


Figure 1-1

Proposed Project Vicinity

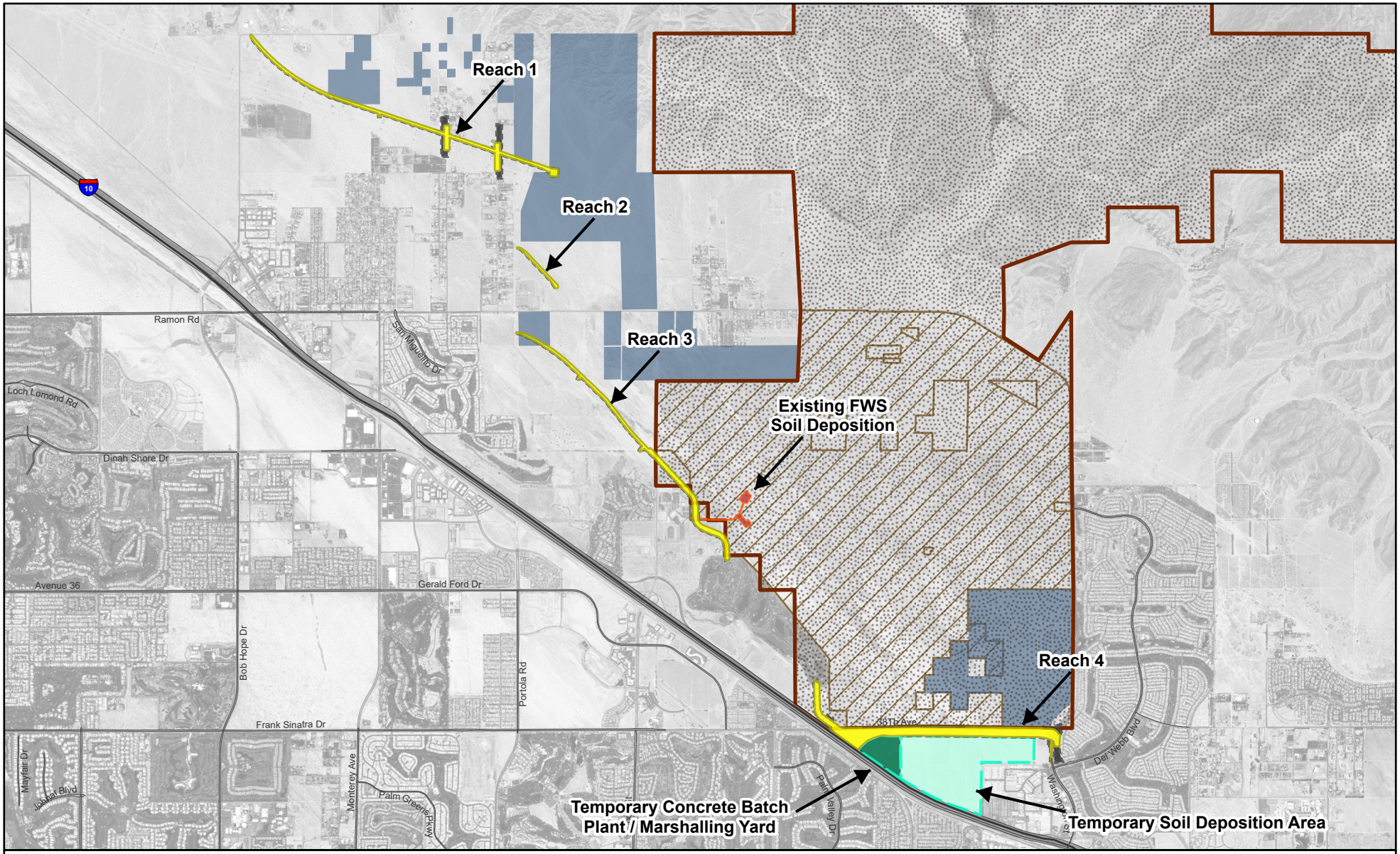


Figure 1-2

Proposed Project Alignment Overview

Avenue 38, east of Varner Road and immediately west of the Del Webb/Sun City development, within existing windrows

Located immediately adjacent to the Project boundary to the north and east is the 15,000-acre Coachella Valley Preserve (Preserve) (see Figure 1-2), which is managed per direction of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP; CVCC 2007), and in compliance with a Natural Community Conservation Plan (NCCP) Permit issued by the California Department of Fish and Wildlife (CDFW) in September of 2008, with a final permit for the CVMSHCP issued by the U.S. Fish and Wildlife Service (USFWS) in October of 2008 (CVCC, 2008). The Coachella Valley National Wildlife Refuge (Refuge) (see Figure 1-2), managed by the USFWS in conjunction with the Sonny Bono Salton Sea National Wildlife Refuge Complex, comprises approximately 3,709 acres within the Preserve (USFWS, 2013). Whereas the Refuge is managed exclusively by the USFWS, the Preserve is jointly managed by The Nature Conservancy, the U.S. Bureau of Land Management (BLM), the CDFW, the USFWS, and the Center for Natural Lands Management (USFWS, 2011). As noted, the Preserve is managed in compliance with a 2008 permit issued by the USFWS. Both the Preserve and the Refuge are within the Thousand Palms Conservation Area designated by the CVMSHCP (Figure 1-2). The Preserve and Refuge protect a large sand dune complex that provides habitat for the Coachella Valley fringe-toed lizard (CVFTL), which is listed as a threatened species by the federal government and as an endangered species by the State of California. The Coachella Valley Conservation Commission (CVCC) determined that Reaches 1 through 3 will define portions of the western boundary of the Thousand Palms Conservation area (Appendix C.5) and Reach 4 will define the southern border of the Preserve/Conservation Area.

1.2 Project History and Previous Studies

1.2.1 Project Area History

The need for flood control protection in the Project area has increased substantially over recent decades due the natural contours of the area's geography and to development in the Coachella Valley, and specifically in Thousand Palms. The community of Thousand Palms, originally established as a railroad depot for the Yuma branch of the Southern Pacific Railroad, grew steadily between the early 1940s and the 1970s, when economic recession stifled growth; however, development revived in the early 21st century, leading to the existence of residential areas and community resources present there today (TPCC, 2014). While flood control improvements have been constructed to protect property in the southern portion of the Coachella Valley, areas to the north of I-10 have relatively little flood protection and are subject to flooding.

Stormwater runoff in the Thousand Palms area comes generally from the north, from the Little San Bernardino Mountains and Indio Hills canyons. Ephemeral drainages carry water and sediment into the Thousand Palms area, forming numerous intersecting alluvial fans below the mouths of canyons. During large storm events, this area is subject to shallow flooding because many channels on the alluvial fans are poorly defined and are not capable of conveying peak flows. Flooding occurs over a fairly broad area with average depths in the one- to three-foot range, and with some flooding as deep as four feet. Due to the dynamic nature of alluvial fan flows, channels migrate across the fan and form rapidly during heavy flows. This can produce heavy sediment-laden flows and flash flooding events.

This entire area has been designated as a Special Flood Hazard Area by the Federal Emergency Management Agency (FEMA), as shown in Figure 1-3 (FEMA Flood Hazard Areas).

This designation identifies areas that would be inundated by stormwater flows associated with a large magnitude storm with a chance of occurring once every one hundred years, also referred to as the 100-year storm.

Continued growth is forecasted for the Coachella Valley with a substantial portion of this growth occurring north of I-10 (Riverside County, 2013). Much of the new land development north of I-10 is expected to be concentrated in and around Thousand Palms, generally between I-10 and the Indio Hills. This area is currently not protected from flood hazards associated with the 100-year storm event, with the primary flood protection provided in the form of building standards applicable to certain types of developments. As a result, a majority of the community is subject to flood hazards despite the existing flood protection ordinances. Additionally, flood hazards in the area are not just applicable to structural integrity, but also introduce community-wide public safety concerns, as major roadways and access roads flood in response to major storm events. Utilities and public infrastructure are also subject to damage from flood flows. Photo 1 provides a recent (2014) example of flooding along Avenue 38.

In addition to hazards associated with alluvial flooding from flash flows, as described above, other stormwater-related hazards in the Project area are introduced by I-10, which acts as a barrier to flood flows originating in the Indio Hills. As a result, interior drainage problems can occur in the southeastern corner of the Thousand Palms area, adjacent to the Preserve. These flood hazards currently threaten existing development in the Thousand Palms area. As development continues and the population of the Thousand Palms area grows, more people will be exposed to flood hazards.

Photo 1: Flooding along Avenue 38, September 2014
Source: CVWD, 2014

1.2.2 Previous Studies

Flooding and related problems in the Whitewater River Basin, including Coachella Valley, have been intermittently studied by the Corps Planning Division (Los Angeles District) since the Flood Control Act of 1937 authorized a survey for flood control in the entire area of the Whitewater River. Several flood control projects have resulted from studies conducted under the authority of the 1937 Act, including work to provide protection along Tachevah Creek in Palm Springs, construction of the Banning Levee on the San Gorgonio River, and development of the Chino Canyon Levee and Channel on a short tributary of the Whitewater River (USACE, 2000).

Authorization for study of the Whitewater River Basin was provided by a resolution adopted on May 10, 1977 by the U.S. House of Representatives' Committee on Public Works and Transportation. A feasibility report was prepared which emphasized formulation of flood control alternatives, both structural and non-structural. The report was completed in September 1979 but was never finalized. However, the local sponsors pursued improvements identified in the report for Palm Desert, Indian Wells, and La Quinta (USACE, 2000).

Corps Planning constructed a debris basin and channel at West Magnesia in Rancho Mirage under authority of Section 205 of the 1948 Flood Control Act. A flood warning system that was considered in the 1979 feasibility report was re-evaluated in 1988 and was implemented by Corps Planning in December

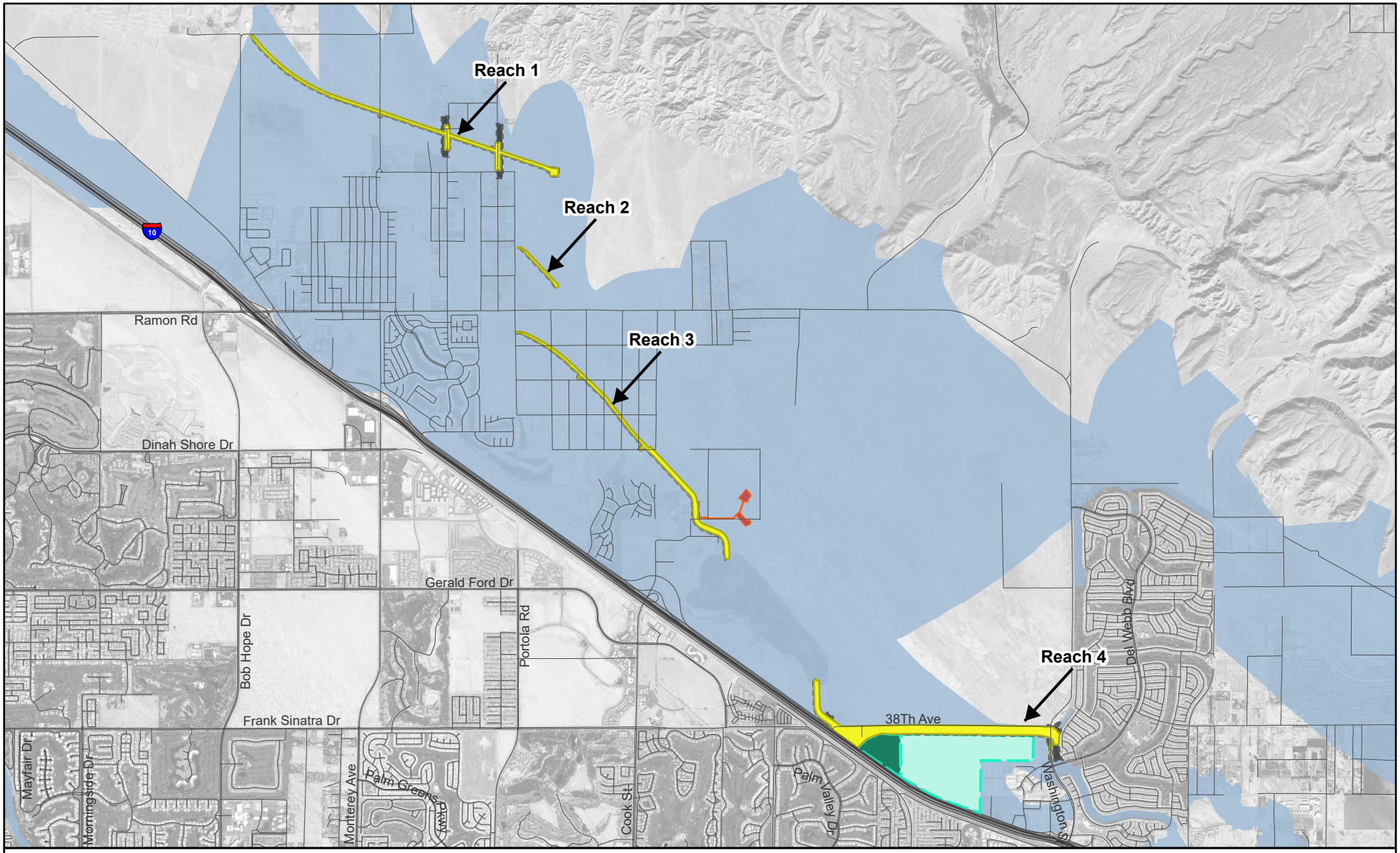
1991 as the Whitewater River Flood Warning Project. In continued efforts to provide flood protection in the Project area, a reconnaissance phase for the proposed Project was completed in 1992. During that phase, Corps Planning investigated flood-related problems along the entire reach of the Whitewater River and determined that a federal interest existed relating to the provision of flood protection in the Thousand Palms area.

Corps Planning is no longer involved in the Project (as described below); the discussion above regarding Corps Planning's processes is intended to provide an explanation as to how and why a Preferred Alternative was previously selected for the Project.

In 2000, CVWD and Corps Planning prepared a Feasibility Report and Final EIS/EIR for the Whitewater River Basin Flood Control Project, with Corps Planning functioning as the Federal Lead Agency under NEPA and CVWD functioning as the CEQA Lead Agency. Corps Planning is no longer involved in the Project, and Corps Regulatory is currently functioning as the NEPA Lead Agency. The 2000 Final EIS/EIR determined that Alternative 6 was the Preferred Alternative based on the proposed action of providing sufficient flood control and environmental protection, avoiding disruption to aeolian (wind-driven) sand transport through the wind corridor (see Figure 3.5-1, Sand Source and Transport Areas), and could be designed to provide recreational opportunities in the form of equestrian and hiking trails along levee rights-of-way. Alternative 6 consisted of four earthen levees (no channels or detention basins) protected with soil cement west of Del Webb (see Figure 1-4, Comparison of 2021 and 2000 Alignments), and included the purchase of 550 acres of floodway. However, due to funding restrictions the action was never implemented or constructed.

In support of the 2000 Final EIS/EIR, the USFWS produced a Draft Fish and Wildlife Coordination Act Report (CAR) in August 1999, which specified concerns about the potential for significant adverse effects to biological resources including the CVFTL. In June 2000, a Biological Assessment was submitted to the USFWS and formal consultation pursuant to section 7 of the Endangered Species Act for the Whitewater River/Thousand Palms Flood Control Project was requested. The USFWS then issued a Biological Opinion (BO) in September 2000 for Alternative 6 which was assessed in the 2000 EIR/EIS. The BO looked at effects of Alternative 6 on the federally threatened CVFTL and its designated critical habitat, threatened desert tortoise, and endangered Coachella Valley milkvetch. The BO concluded that the proposed action (Alternative 6) would "not likely to jeopardize the continued existence of the CVFTL, desert tortoise, or Coachella Valley milkvetch. Although the proposed action will alter designated critical habitat for the CVFTL, we [USFWS] conclude, on the basis of Project-related impact avoidance, minimization and conservation measures, that such alteration will not appreciably diminish the value of critical habitat for the survival and recovery of the species and, thus, the proposed action will not result in the destruction or adverse modification of critical habitat for the CVFTL."

In anticipation of the Project's implementation, Corps Planning maintained coordination efforts with local land developers and regulatory agencies to ensure consistency of the Project with other projects in the area. Specifically, Corps Planning proceeded in coordination with Xavier College Preparatory High School, a portion of which would be traversed by Reach 3, and with the Berger Foundation regarding the Classic Club Golf Course, into which Reach 3 would direct stormwater flows. This coordination is summarized below, with regards to their relevance to the current proposed Project.



Source: FEMA National Flood Hazard Layer 2015

Permanent Impact Area
Temporary Impact Area
Temporary Soil Deposition Area
Temporary Concrete Batch Plant/Marshalling Yard
Existing Soil Deposition
FEMA 100-Year Flood Area

0 1 Miles

Figure 1-3

FEMA Flood Hazard Areas

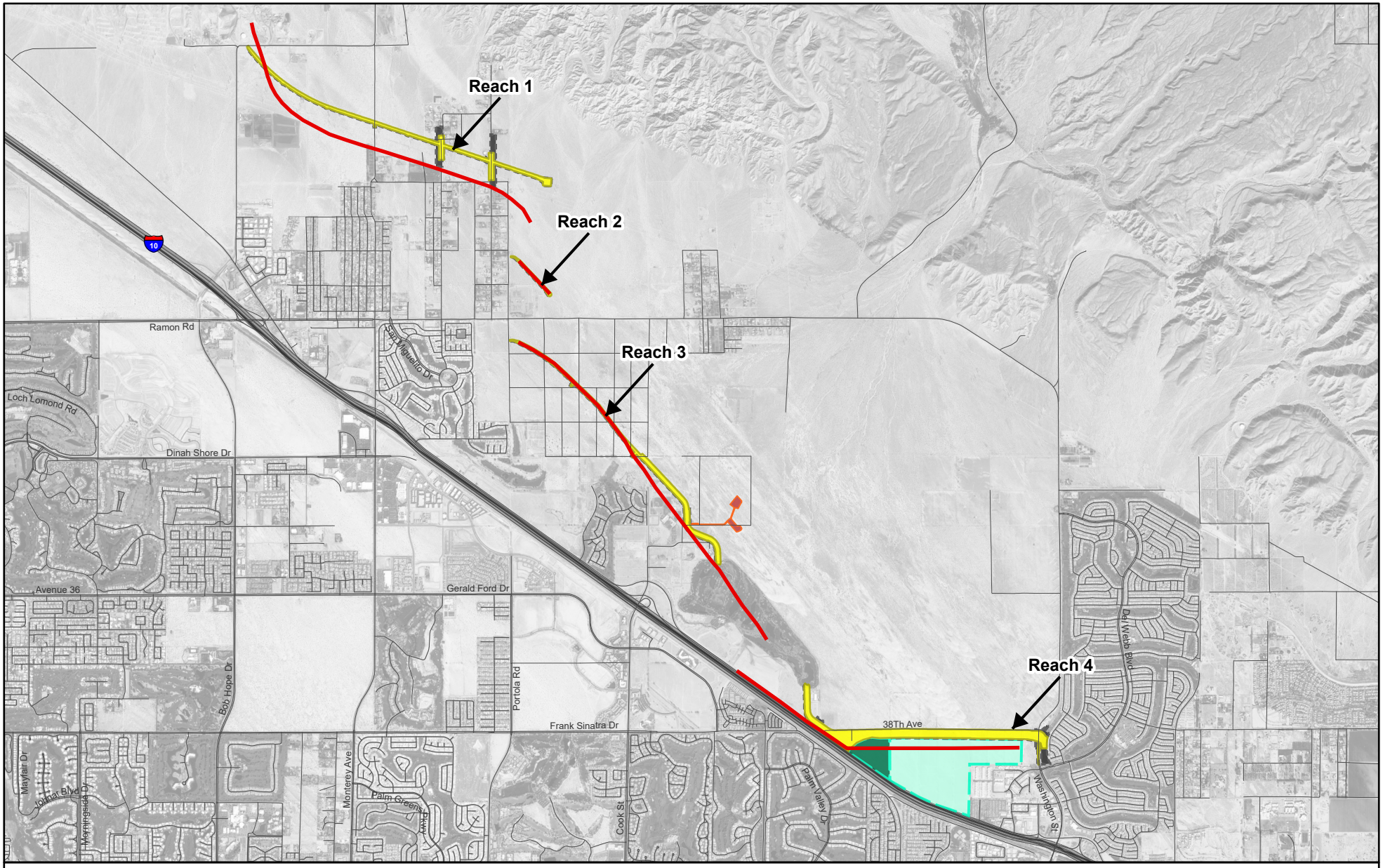


Figure 1-4

Comparison of 2020 and 2000 Alignments

1. **Xavier College Preparatory High School.** Xavier College Preparatory High School was constructed in 2006. The County of Riverside Planning Department Staff Report stated that in the absence of regional flood control the school site would be subject to as much as 7,000 cubic feet per second in stormwater flows, whereas the presence of regional flood control improvements would reduce stormwater flows to as little as 100 cubic feet per second (Riverside County, 2004). The alignment of the Preferred Alternative identified in 2000 ("Alternative 6" in the 2000 EIS/EIR) would traverse directly through the high school property, as the high school had not yet been proposed at the time of that analysis. In order to accommodate the high school layout while still minimizing disruption to sand migration in the active wind corridor, Corp Planning altered the configuration of the previously identified Preferred Alternative to the current configuration of Reach 3, where it turns slightly to the east-southeast and transitions to a channel configuration at the high school property. The revised alignment helps to avoid the high school's athletic fields while still providing flow conveyance away from the school property, and the channel configuration minimizes disruption to existing sand migration patterns (as opposed to a levee, which blocks wind-borne sand movement due to vertical clearance).

2. **Classic Club Golf Course.** The Classic Club Golf Course, which opened in 2006, was proposed following approval of the 2000 Final EIS/EIR for the Project. Once plans for the Classic Club Golf Course property were in development, Corps Planning commissioned Tettemer & Associates, a division of The Keith Companies, Inc., to model hydraulics of the Project area and proposed golf course development to determine whether sufficient stormwater conveyance capacity would be available through the then-proposed golf course. This study completed in February 2004, entitled "Hydrology, Hydraulics, and Flood Control Improvement Concept Study for Management of Off-site Flows for World Trade Center University, Palm Desert, California" (where "World Trade Center University" refers to the Classic Club Golf Course property) assessed on-site and off-site flood flows through the now-developed Classic Club Golf Course (Tettemer & Associates, 2004). The study considered proposed flood control features associated with the Thousand Palms Flood Control Project, including the revised alignment of Reach 3 that would direct flows into the Classic Club Golf Course property (as opposed to the previously-approved version of Reach 3, which continued in a straight alignment through the Classic Club Golf Course), and determined that the Classic Club Golf Course would have sufficient capacity to safely convey on-site and off-site flows with no adverse effects to downstream or upstream properties, with or without the proposed flood control improvements (Tettemer & Associates, 2004). As such, the study determined that the stormwater drainage system included in the golf course's planned development (and current condition) would be sufficient to transmit stormwater flows directed by the Project into the golf course system.

   In 2006, a "Final Hydrology, Hydraulics and Flood Control Improvement Concept Study for Management of Off-Site Flows for Northstar Development, Palm Desert, California," was prepared by Van Dell and Associates, Inc. (March 2006) for the Berger Foundation. The Northstar Development includes the Classic Club Golf Course (proposed development). The objectives of the 2006 Study included establishing water surface elevations and velocities of existing condition storm flows without the development in place and with the development in place to demonstrate that the golf course will safely convey off-site flood flows; compare the results with the condition in which the previous Whitewater River Basin Flood Control Project (Corps Levee/Channel) is in place and demonstrate that the development (golf course) will not have an adverse impact to any upstream or downstream properties when compared to the Corps Levee/Channel condition; demonstrate that the golf course will provide flood protection for the proposed development areas; and demonstrate that the proposed development will comply with CVWD Thousand Palms Riverine Corridor Drainage Policy. The Riverine flows at the upstream end of the golf course (approximately 985 cubic feet per second) conveyed along the north side of I-10, will combine with the flows from Thousand Palms

Canyon as a result of the construction of the Corps Levee/Channel system; therefore, the Riverine flows were included in the design flows used for all hydraulic modeling scenarios.

Modeling included analysis of the proposed golf course with the proposed Corps Levee/Channel tying into the golf course at the upstream end and again at the downstream end. The golf course model consisted of multiple flow paths of varying lengths, which cause the separation and recombination of flows at various locations, as well as lake features which provide dead storage. For areas within the proposed golf course conveyance, cross-sections were based on the 2004 conceptual grading plan for the golf course prepared by The Palmer Course Design Company.

As part of the 2006 Study, the report entitled "Whitewater River Sediment Study" published by Northwest Hydraulic Consultants on July 13, 2004 (NHC Report) was reviewed. The NHC Report provides sediment production and transport analyses, which show that the 100-year flows have a maximum sediment transport capacity of 8,100 tons (16.2 million pounds) or 2.5 acre-feet for a 24-hour storm event. As stated, if 2.5 acre-feet of sediment reaches the upstream inlet to the golf course, sediment would be deposited in the lowest elevations throughout the golf course conveyance (i.e., the lake areas). The total volume of the lakes within the golf course were computed to be approximately 237 acre-feet, which will provide storage for approximately 775,000 tons of sediment or approximately 95 times the maximum volume of sediment transported. Therefore, it was found that sediment deposition would not affect the hydraulic analyses of the golf course conveyance. In the 2006 Study, it was also disclosed that on-going maintenance activities will be required to preserve the long-term operation of golf course conveyance, including but not limited to removal of sediment and debris from the lakes after significant storm events, prevention of trees or other obstructions from being located within flow conveyance areas, and repair of flow conveyance areas to surface elevations that match the approved grading plans. As mentioned above and described in detail in Chapter 2, Reach 3 of the proposed Project would traverse a portion of the Xavier College Preparatory High School property, and continue in a southeasterly direction to direct stormwater flows into the now-existing stormwater drainage system through the Classic Club Golf Course. At the downstream end of the Classic Club Golf Course, Reach 4 of the Project would direct flows along the southern edge of the Coachella Valley Preserve/Refuge, eventually transmitting flows under Washington Street and into the existing stormwater drainage system through the Del Webb / Sun City residential development.

In 2011, Corps Planning initiated a revised Project description to address development built in the Project area. Specifically, since finalization of the 2000 EIS/EIR, residential, institution, and recreational development has substantially expanded throughout the Project area (increasing the need for flood control).

The 2011 analysis was referred to as a Preliminary Draft Supplemental Environmental Assessment (SEA) and Mitigated Negative Declaration (MND). As a supplemental analysis, the Preliminary Draft SEA/MND tiered-off the Final EIS/EIR, and characterized potential impacts of the Project, or "Proposed Action," in terms of how they would differ from impacts of Alternative 6, as characterized in the 2000 Final EIS/EIR. Each environmental issue area section in the Preliminary Draft SEA/MND discussed how impacts of the Proposed Action and alternatives would be the same or different from those discussed in the 2000 Final EIS/EIR and identified any new impacts that would be introduced as well as any previously identified impacts that would be avoided. Figure 1-4 provides an approximate comparison of the 2000 alignment and the current proposed Project alignment.

Due to federal funding restrictions, the design of the Project never progressed far enough to publish or finalize the 2011 SEA/MND, which remained in the "Preliminary Draft" phase. Therefore, the 2011 SEA/MND was considered an internal planning document and was not used to make any decision on the Project. Meanwhile, CVWD decided it was necessary to move forward with the design and construction of the Project to address the persisting flood hazard issues in the Thousand Palms area.

1.2.3 Clean Water Act Permitting

In early 2012, Corps Planning signed over authority of design of the Project to the CVWD, which is functioning as the CEQA Lead Agency for this EIR/EIS. Corps Regulatory now serves as the NEPA Lead Agency in preparation of this EIR/EIS. The EIR/EIS role for Corps Regulatory compared to Corps Planning is substantially different in that the Corps is now reviewing this Project from a regulatory perspective under its Clean Water Act permitting role, instead of a cost-share partner for development of the Project. Construction of the original project would have been exempt under Section 404(r) of the Clean Water Act because it was a federal project authorized by Congress. Once the Project authorization changed, the Project was no longer exempt from permitting requirements under the Clean Water Act and the focus of federal involvement shifted from a project development role to a regulatory role, with CVWD assuming a role as a Section 404 permit applicant.

In 2014, CVWD submitted a permit application (subsequently revised and updated) to Corps Regulatory for this Project to comply with regulations promulgated under Section 404 of the Clean Water Act. This permit is required because the Corps has determined that drainage features within the proposed Project footprint are "waters of the United States" and subject to Corps jurisdiction under Section 404 of the Clean Water Act. CVWD, as the applicant, is proposing to place fill material within waters of the United States as part of their project, which triggers the requirement for a 404 permit.

This EIR/EIS is considered a stand-alone document and is not tiered off the 2000 EIS/EIR. However, this EIR/EIS incorporates by reference previous documents prepared for the Project, as per CEQA Guidelines Section 15150.

1.3 Project Objectives & Purpose and Need

This section discusses why the CVWD and Corps Regulatory, as the CEQA and NEPA Lead Agencies, must act on the Project in the context of their respective decision-making processes, and the reasons why the Applicant (CVWD) is pursing Project approval. The function of the Project Objectives (CEQA) and Purpose and Need (NEPA) are similar in their requirement for the Lead Agencies to explain why a particular project is being considered, and to assist the Lead Agencies in making their respective decisions on a proposed project. The Project Objectives and Purpose/Need also help to determine which alternatives should be carried forward for detailed analysis, as presented in Chapter 2. Lastly, the Purpose/Need is a key factor in performing a 404(b)(1) alternatives analysis as required under the 404(b)(1) guidelines (40 CFR Part 230) for Section 404 permits.

1.3.1 CEQA Project Objectives

CEQA requires that an EIR state the objectives sought by a proposed project (State CEQA Guidelines §15124[b]). The CEQA objectives for the proposed Thousand Palms Flood Control Project are described below.

1. **Flood Protection.** The primary objective of the Project is to provide flood protection for the 100-year storm event to the maximum area possible within the FEMA-designated Flood Hazard Area, while avoiding adverse effects to the Coachella Valley Preserve. The community of Thousand Palms and the overall Project area are located within a Flood Hazard Area, as shown on Figure 1-3. The need for flood control in this area has increased substantially in recent years due to continuing growth and development in the Coachella Valley. The population of Thousand Palms increased more than 50 percent between 2000 and 2020, from approximately 5,120 to 7,967 (U.S. Census Bureau, 2021). While substantial flood control improvements have been constructed to protect properties in the south half of the Coachella Valley, the portion of the valley north of I-10, including Thousand Palms,

has little flood protection and is subject to substantial flooding hazards. As development and population in the Thousand Palms area continues to grow, potential risks from flood hazards are increasing.

2. **Sand Dune Habitat Preservation.** Secondary objectives of the Project are to enhance the viability of the Coachella Valley Preserve and Wildlife Refuge (respectively) by establishing clear boundaries through land exchange; avoiding disruption of aeolian (wind) processes for sand transport; preserving an approximately 550-acre floodway area; and replenishing sand on the Preserve/Refuge during the Operations and Maintenance (O&M) phase by collecting material that has gathered along Project facilities and redistributing it on the Preserve/Refuge within the active wind corridor, whereas such materials would otherwise continue traveling downwind/downstream away from the protected habitat areas. Waters of the U.S. or waters of the State would be impacted by O&M activities if sand is removed from the toe of the levee as these features are expected to flow along the face of the levee. Redistributed sand would be distributed only to upland areas.

3. **CVMSHCP Boundary Modification.** Reaches1, 2, and 3 of the proposed Project will define a portion of the western boundary of the Thousand Palms Conservation Area (including the Coachella Valley Preserve). Reach 4 will follow the current southern boundary of the Preserve/Conservation Area. The 2008 BO issued by the USFWS for the CVMSHCP describes that the Preserve boundary may be defined by the Project alignment, which represents a "minor" adjustment from the Conservation Area boundary under consideration at the time of issuance of the 2008 BO. In ~~July~~ August 2021, the Coachella Valley Conservation Commission determined that the final alignment of the proposed Project is consistent with the CVMSHCP Conservation Objectives for the Thousand Palms Conservation Area and it constitutes a Covered Project under Section 7.3.1. The final alignment of the proposed Project will result in only a minor adjustment of the existing Conservation Area boundary (approximately a 1.16 percent difference), and the Project will define the new western boundary of the Conservation Area (Appendix C.5).

1.3.2 NEPA Purpose and Need

NEPA requires that an EIS explain the "underlying purpose and need" to which the agency is responding in the consideration of a proposed action, or project (40 CFR §1502.13).

Purpose and Need Statement

The underlying purpose for the proposed Project by CVWD is to provide flood hazard protection to the maximum number of properties located within the FEMA-designated flood hazard zone and floodplain in the Thousand Palms area to allow private residents use of their properties while reducing risk to life from flooding (see Figure 1-3), while avoiding adverse effects to wildlife and habitat within the Coachella Valley Preserve and Wildlife Refuge (respectively). FEMA's Flood Hazard Area designation indicates that this area would be inundated by stormwater flows associated with the 100-year storm event, or the magnitude storm with a one percent chance of occurring during any given year.

The community of Thousand Palms is without flood protection and is therefore subject to flooding associated with storms of varying sizes. As recently as September 8, 2014, flash flooding associated with rainfall and runoff from Hurricane Norbert resulted in floodwaters as deep as five feet in some areas, including roadways in Thousand Palms (see Photo 1, above). Multiple emergency rescue incidents were required in response to the flooding. Total cost of the clean-up and repair effort has not been quantified, but is on the order of millions (CBS, 2014). The proposed Project is designed to increase the flood protection for ~~protect~~ this area from flooding hazards associated with large storm events such as the one

that occurred in 2014. Although the risk of flooding has been reduced, homeowners are recommended to maintain flood insurance if living in this area.

Development in the Thousand Palms area is continuing to expand despite the current lack of flood protection. As discussed in Section 1.2, the need for flood control in this area has long been recognized, originally when the Flood Control Act of 1937 authorized a survey for flood control in the entire area of the Whitewater River, and in 1977 when the U.S. House of Representatives' Committee on Public Works and Transportation authorized a study of the Whitewater River Basin. The proposed Project has been studied in various forms since the 1990s, with the current Project design and alignment influenced by development that has continued to occur in the area since the need for flood protection was originally recognized.

In addition to defining the purpose of a project pursuant to NEPA, the Corps must evaluate a project in accordance with the Section 404(b)(1) Guidelines of the Clean Water Act (40 CFR 230). The basic project purpose is used to determine if a project is water dependent. If a project is not water dependent, practicable alternatives that do not involve a discharge of fill into special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. The basic project purpose for the proposed Project is flood protection, which is not water dependent. The overall project purpose serves as the basis for the 404(b)(1) alternatives analysis and is determined by further refining the basic project purpose in a manner that more specifically describes the applicant's goals for the Project and which allows a reasonable range of alternatives to be analyzed. The Project purpose serves as the initial screening criterion for the 404(b)(1) alternatives analysis. The overall purpose for the proposed Project is to provide flood hazard protection to areas located within the FEMA-designated flood hazard zone and floodplain in the Thousand Palms area (see Figure 1-3), while avoiding adverse effects to wildlife and habitat within the Coachella Valley Preserve.

1.4 Overview of the Environmental Review Processes

When a project requires compliance with both CEQA and NEPA, the Lead Agencies may decide to collaborate in the preparation of a joint EIR/EIS document, as is the case with the proposed Project. In accordance with CEQA and NEPA requirements, the EIR/EIS must be completed before a decision to approve or deny the project can be made by the Lead Agencies which, in this case, are the CVWD (CEQA Lead Agency) and the Corps (NEPA Lead Agency). The EIR/EIS must provide the following information: disclosure of the Project's expected impacts on the environment; recommended measures to reduce or avoid adverse impacts; and analysis of a reasonable range of feasible alternatives. The purpose of this process is to inform the public about the impacts of the Project and to provide agency decision-makers with vital information to aid in their decision(s) regarding whether to approve or deny the Project. The basic contents of an EIR/EIS include:

- A description of the proposed Project/Action;
- A statement of objectives (per CEQA) and Purpose and Need for the action (per NEPA);
- A description of existing conditions in the Project area;
- An analysis of the potential environmental impacts of the proposed Project and alternatives;
- Recommendations of mitigation measures that would reduce or avoid adverse impacts (for impacts identified under the proposed Project as well as alternatives to the Project); and

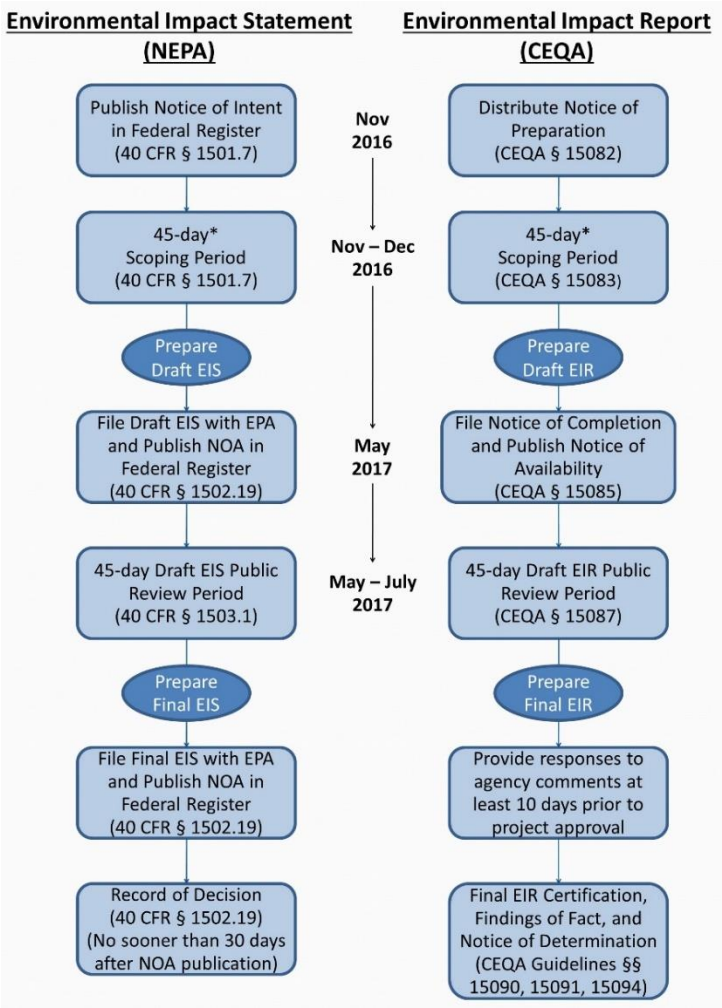
- A discussion of other required environmental topics, including adverse environmental effects that cannot be avoided, irreversible and irretrievable commitment of resources, growth-inducing effects, and the relationship between short-term use and long-term productivity of the environment.

In preparing a joint EIR/EIS, individual requirements of both CEQA and NEPA must be met during the environmental review process, as shown in Figure 1-5 (CEQA-NEPA Process Flow Diagram) below. The State and federal processes begin in similar ways, with the filing of specified announcements that an environmental analysis is being prepared. Under CEQA, the EIR process is initiated by filing a Notice of Preparation (NOP) with the State Clearinghouse (SCH) in the Governor's Office of Planning and Research, thus indicating that a Draft EIR will be prepared. Similarly, under NEPA, the EIS process is initiated by publishing a Notice of Intent (NOI) to prepare an EIS in the *Federal Register*. These notices initiate a 30-day period during which public and agency input is solicited on the scope of issues and concerns that should be addressed in the EIR/EIS. As part of this scoping process, public meetings are conducted to present information on the proposed Project and to receive public input on the Project.

When the Draft EIR/EIS has been completed, it is distributed for public review and comment in accordance with the requirements of both CEQA (CEQA Guidelines §15087) and NEPA (NEPA Regulations 40 CFR 1506.6). Copies of the Draft EIR/EIS are also submitted to the U.S. Environmental Protection Agency (USEPA) (40 CFR 1506.9) and the SCH, as well as responsible, trustee, and cooperating agencies as defined by CEQA and NEPA. A Notice of Availability (NOA) of the Draft EIR/EIS is published in the *Federal Register* by the USEPA (40 CFR 1506.10).

The NOA is also published in local newspapers and with the county clerk(s), per CEQA Guidelines §15087. Publishing the NOA initiates a public review and comment period for the Draft EIR/EIS that is typically 45 days in length. All comments and concerns regarding the Draft EIR/EIS must be received by the Lead Agencies before the end of the 45-day period in order to be considered in the Final EIR/EIS. During the 45-day comment period following publication of the NOA, a public hearing may be conducted to obtain public comment on environmental issues addressed in the Draft EIR/EIS. The date, time, and location of any public hearings, should they occur, will be announced in the *Federal Register* and in local newspapers.

Figure 1-5: CEQA-NEPA Process Flow Diagram



*CEQA Guidelines §15082 states that responsible and trustee agencies have 30 days to respond to the NOP; however, this timeline has been extended to 45 days.

Responses to substantive comments received on the Draft EIR/EIS will be prepared by the Lead Agencies and published in the Final EIR/EIS in accordance with CEQA Guidelines §15088 and NEPA Regulations 40 CFR 1502.9 (See Appendix H). The Final EIR/EIS may present additional information in response to comments made on the Draft EIR/EIS and may include minor corrections to the Draft EIR/EIS that were discovered during the comment period, which may include the following: modification to the proposed Project or Project alternatives; development and evaluation of alternatives not previously considered by the agency; improvement or modification of the Project analysis as needed; factual corrections; and/or explanation as to why certain comments do not warrant further agency response. If the changes are minor and do not rise to a level requiring preparation of a Supplement to an EIR (CEQA Guidelines §15163) or a Supplemental EIS (NEPA 1502.9(c)(1)) a Final EIR/EIS is prepared. As part of the Final EIR/EIS, a Mitigation Monitoring and Reporting Program (MMRP) is prepared (CEQA Guidelines §15097) (See Appendix I). Once the Final EIR/EIS is complete, another NOA is published in the *Federal Register* by the USEPA.

After the Final EIR/EIS has been reviewed and approved by the Lead Agencies, the federal Lead Agency prepares a Record of Decision (ROD) in accordance with NEPA requirements (40 CFR 1505.2). The ROD provides a public record explaining why the federal Lead Agency chose a particular course of action. The ROD typically cannot be approved until at least 30 days after the NOA for the Final EIR/EIS is published in the *Federal Register*. The Corps will post the ROD on the Los Angeles District website.

Similar to the required federal process, CEQA Guidelines §15090 requires that the CEQA Lead Agency review the Final EIR/EIS and certify the document's adequacy under CEQA prior to taking any action to approve the Project or an alternative to the Project. If the Final EIR/EIS determines that the proposed Project would lead to one or more significant environmental effects that cannot be mitigated to a less-than-significant level, the Lead Agency must make specific findings regarding its approval of the Project (CEQA Guidelines §15091). These findings must either state that alterations have been made to the Project to avoid or substantially reduce each significant impact, or that specific economic, legal, social, technological, or other considerations make mitigation of a significant impact infeasible.

If the CEQA Lead Agency decides to approve the proposed Project or an alternative to the proposed Project even though significant unavoidable impacts would occur, the Lead Agency must prepare and adopt a Statement of Overriding Considerations (SOC), which explains why the significant and unavoidable environmental impacts associated with the project are acceptable when compared to the benefits of the proposed Project or an alternative to the Project (CEQA Guidelines §15093). If an SOC is required, it must be prepared and adopted before the Lead Agency, in this case the CVWD Board of Directors, takes action to approve or deny the proposed Project or selected alternative. The CEQA Lead Agency must also file a Notice of Determination (NOD) with the SCH within five working days after approval of a Project for which an EIR was prepared (CEQA Guidelines §15094).

The proposed Project or approved alternative to the Project cannot be initiated before the EIR/EIS is finalized, the CEQA-specific findings (including the SOC) are approved, the NEPA-required ROD is signed and approved, and an approval is granted by the CEQA Lead Agency. In addition, various other agencies may need to provide approvals prior to Project initiation. These agencies will utilize the information contained in the Final EIR/EIS in making their decisions regarding permits and approvals required for the Project.

1.5 Clean Water Act Permitting Process and Decision Framework

This EIR/EIS is being prepared, in part, to support the Corps' decision-making process for the requested Section 404 permit. The Corps, in concert with CVWD as the CEQA lead agency, has followed specific

procedures that began with scoping and data collection and continued with analysis of data and evaluation of alternatives.

A unique aspect of evaluating a Section 404 permit includes the requirement for the Corps to conduct a 404(b)(1) alternatives analysis as part of the permit review. This analysis screens and evaluates a range of alternatives considering the project purpose and need and practicability criteria (based on cost, existing technology, and logistics). Alternatives considered to be practicable are further compared with respect to impacts to waters of the U.S. and significant environmental effects. The analysis ultimately identifies a Least Environmentally Damaging Practicable Alternative (LEDPA). The Corps is only allowed to issue a Section 404 permit for the LEDPA. The 404(b)(1) alternatives analysis has been included with this EIR/EIS as Appendix C.4. Compensation is expected to focus on the preservation of waters within the 550-acre floodway. As part of the project design CVWD would preserve approximately 70.41 acres of existing jurisdictional streambeds through the acquisition and enhancement of the 550-acre floodway to off-set the permanent loss of approximately 10.62 acres of waters of the US, and indirect impacts to approximately 17.98 acres of waters of the US.

CVWD will be required to compensate for the loss of waters of the U.S. that would occur if the 404 permit is issued and the Project is constructed. The floodway will preserve a total of 70.41 acres (1.54 acres of USACE waters in Reach 1; 47.86 acres in Reach 2; and 21.00 acres in Reach 3).

After the release of the final EIR/EIS, the Corps will issue a Record of Decision (ROD) regarding its decision on the proposed action. In the ROD, the Corps may decide to:

- Issue a 404 permit with or without special conditions on the Project described in CVWD's 404 permit application or for the Project with modifications;
- Deny the 404 permit request; or,
- Allow CVWD to withdraw the 404 permit application.

1.6 Project Scoping Summary

Scoping, or the process of involving the public and agencies in determining the scope and content of an EIR or EIS, is encouraged and utilized under both CEQA and NEPA. Scoping is an effective way to solicit and address the environmental concerns of the public, affected agencies, and other interested parties. In addition to the purpose of informing the public about the proposed Project, the scoping process is also meant to achieve the following: (1) identify potentially significant environmental impacts for consideration in the EIR/EIS; (2) identify possible mitigation measures for consideration in the EIR/EIS; (3) identify alternatives to the proposed Project for evaluation in the EIR/EIS; and (4) compile a notification list of public agencies and individuals interested in future Project meetings and notices. Scoping can take many different forms, including public and agency consultation, scoping meetings, and notices such as the NOP and NOI.

The CVWD submitted the NOP to the SCH on November 18, 2016 beginning a CEQA-mandated 30-day public review period (November 18, 2016 to December 19, 2016). The SCH is responsible for circulating the NOP to State agencies. A newspaper ad was also placed in *The Desert Sun* newspaper on November 18, 2016 providing details about the Project and the scoping meetings. The NOI was published in the *Federal Register* on November 9, 2016, beginning a 41-day comment period (November 9, 2016 to December 19, 2016). Notices were distributed to federal, State, and local agencies, as well as tribes that may have interest in the Project area including the U.S. Environmental Protection Agency (USEPA), Riverside County Planning Department, Riverside County Transportation Department, South Coast Air Quality Management District (SCAQMD), Coachella Valley Association of Governments, Coachella Valley Community Councils, U.S. Fish and Wildlife Service (USFWS), and various tribes (Cahuilla Band of Indians, Los Coyotes Band of

Cahuilla and Cupeno Indians, Morongo Band of Mission Indians, Ramona Band of Cahuilla Indians, Soboba Band of Luiseno Indians, Torres Martinez Desert Cahuilla Indians, Twenty-nine Palms Bank of Mission Indians). Notices were also mailed to property owners directly affected by the levee alignment. The SCH provided the NOPs to the: Colorado River Board; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 6; Native American Heritage Commission (NAHC); Office of Emergency Services, California; Public Utilities Commission; State Lands Commission; California Department of Transportation (Caltrans), Division of Aeronautics; California Highway Patrol; Caltrans, District 8; and Regional Water Quality Control Board, Region 7. The notices included information on the Project location, a description of the proposed Project, alternatives under consideration, potential environmental effects of the Project, and announced the public scoping meeting.

A scoping meeting was held on December 6, 2016, at the Thousand Palms Community Center in Thousand Palms, California. Presenters at the meeting included CVWD staff, USACE staff, and environmental consulting staff. The meeting sign-in sheet indicated that 33 people attended the meeting. A total of 7 people provided verbal comment at the meeting. Comments were received at the scoping meeting and throughout the scoping period. A total of 16 written comment letters were received during the scoping period, including comments from USEPA, USFWS, NAHC, SCAQMD, Metropolitan Water District, Riverside County Flood Control & Water Conservation District, Imperial Irrigation District, H.N. and Frances Berger Foundation, Noble & Company LLC, and private citizens. The topics commented on are noted in Table 1-1, along with information on where each comment is addressed within this EIR/EIS. Appendix A includes a summary of all comments received in response to the NOP/NOI, copies of the written comments, as well as the NOP, NOI, and distribution mailing list (for agencies only).

Table 1-1. Scoping Comments Summary

Resource/Issue Area	Topic/Comment Summary	Where Addressed
Water Resources	Clean Water Act permitting	Section 3.14, Chapter 6
Water Resources	Flood Risk	Section 4.14
Biological Resources	Impacts to jurisdictional waters	Sections 3.5, 3.6, 4.5, and 4.6
Biological Resources	Concern, protection, and enhancement of biological resources	Sections 3.5, 3.6, 4.5, 4.6
Cultural Resources	AB 52 consultation, agency coordination with Native American tribes	Section 3.7
Air Quality	Air quality emissions	Sections 3.3, 4.3.
Alternatives	Proposed alternatives	Chapters 1 and 2
Land Use	Effects on future development in the region	Section 3.8 and 4.8
Water Resources	Flood protection	Section 3.12 and 4.12
Introduction	Purpose and need	Section 1.3
Project Description	Project design basis	Chapter 2
Comments and Responses	Comments and Responses on the Draft EIR/EIS	Chapter 7

See Appendix A for all written comments received during the scoping period.

The Lead Agencies have endeavored to address a broad range of issues, resources, and topics in this EIR/EIS, including concerns raised during the scoping period. However, not all comments received are addressed for various reasons. Some comments did not pertain to the Project and, therefore, have not been addressed. Examples include comments on other projects and requests for additional information. Some comments have not been addressed because they were not substantive, meaning that they did not present information that is meaningful to the environmental analysis. Examples of non-substantive comments include comments that are vague or open ended. Such non-substantive comments are not required to be addressed in the EIR/EIS.

2. Proposed Project and Alternatives

The Coachella Valley Water District (CVWD) proposes to construct and operate the Thousand Palms Flood Control Project ("Project" or "Proposed Action"), formerly known as the Whitewater River Basin Flood Control Project. The Project includes a series of flood control structures to provide flood hazard protection to the maximum number of properties located within the FEMA-designated flood hazard zone and floodplain in the Thousand Palms area to allow private residents use of their properties while reducing risk to life from flooding. The Project would also support aeolian (wind-driven) and fluvial (water-driven) transport of sand to the Coachella Valley Preserve ("Preserve") and Coachella Valley National Wildlife Refuge ("Refuge"). Fine sands located in this area provide habitat for the state listed as endangered and federally listed as threatened Coachella Valley Fringe Toed Lizard (CVFTL) and other sensitive sand dwelling species.

2.1 Project Location

The proposed Project is located in the unincorporated community of Thousand Palms, Riverside County, California (as shown in Figure 1-1, Proposed Project Vicinity). Flood control improvements associated with the proposed Project would reduce flooding hazards from coalescing alluvial fans (broad or open land surface where sediments that had accumulated at the mouth of a canyon has been distributed across the surface, typically during major flood events) in the area between the Indio Hills (to the north) and Interstate 10 (I-10) (to the south). Thousand Palms is within the Coachella Valley, located about ten miles east of the City of Palm Springs and immediately north of the City of Palm Desert, and north of I-10.

2.1.1 Regional Context

The Coachella Valley is defined by two parallel mountain ranges which trend in a northwest-southeast direction. The San Jacinto and Santa Rosa Mountains are located to the southwest and the Little San Bernardino Mountains are to the northeast of the valley. The valley averages about 15 miles in width and slopes gradually from the San Gorgonio Pass toward the Salton Sea for a distance of about 40 miles. The Whitewater River is the main drainage course in the Coachella Valley, originating on the southerly slopes of the San Bernardino Mountains and flowing in a southeasterly direction through the valley to the Salton Sea (USACE, 2000).

The Project area is located near the center of the Coachella Valley and consists primarily of intersecting alluvial fans and a portion of the Indio Hills. The alluvial fans which cover most of this area were formed by sediment washing down from the Little San Bernardino Mountains and the Indio Hills. Elevations within the region range from 1,614 feet above mean sea level at Edom Hill near the northwestern end of the Indio Hills, to about 30 feet above mean sea level at the southern end near Indio. The area is traversed by two segments of the San Andreas Fault — the Mission Creek Fault along the north edge of the Indio Hills and the Banning Fault along the south edge of the Indio Hills (USACE, 2000).

A substantial portion of the Coachella Valley is urbanized with the majority of urban development located along the southern edge of the valley near the base of the San Jacinto and Santa Rosa Mountains. Nearly continuous urban development exists along the south side of the valley from the City of Palm Springs in the northwest, near San Gorgonio Pass, to the Cities of Indio, Coachella, and La Quinta in the southeast. The only incorporated community on the north side of the Coachella Valley is the City of Desert Hot Springs, located north of Palm Springs (USACE, 2000).

The basin of the valley is considered a part of the Colorado Desert and the climate is characterized by extreme heat and dryness. Annual rainfall averages only four inches, but varies greatly from year to year.

Plant communities in the Project area are generally typical of the Colorado Desert and include creosote bush scrub, desert saltbush scrub, burro-weed scrub, desert wash, and various sand formations. There are also disturbed areas within the Project area, including tamarisk stands, agricultural fields, and cleared habitat. The area also includes several desert fan palm oases, which are sustained by groundwater welling up along fault fractures (USACE, 2000).

2.1.2 Existing Land Use in Project Area

The Project consists of four segments referred to as Reaches 1 through 4 (1-4) and is generally located on the northern and eastern margins of the community of Thousand Palms between Rio Del Sol Road and Washington Street (see Figure 1-2, and Figures 2-1 through 2-3). The Project would connect to existing stormwater conveyance facilities at the Classic Club Golf Course and the Del Webb/Sun City residential development. Reaches 1 and 2 would convey storm flows towards Reach 3. Reach 3 would convey flow into the floodway at the Classic Club Golf Course and Reach 4 would convey storm flows through the existing channel in the Del Webb / Sun City residential development located on the east side of Washington Street.

This area is characterized as a rural urban interface supporting residential, commercial, and industrial developments, plant nurseries, educational facilities, golf courses, utility corridors, and open space, including lands managed for the preservation of sensitive plants and wildlife. These lands include U.S. Fish and Wildlife Service (USFWS) designated Critical Habitat for the Coachella Milk Vetch and the CVFTL, the Refuge, and the Preserve. Implementation of the Project would result in a total of 9.05 acres of direct and indirect impacts to an area that is currently federal land, managed as a part of the Refuge. This includes 6.96 acres of direct permanent and 0.67 acres of direct temporary impacts to Refuge lands during construction (a subtotal of 7.63 acres). In addition, 1.42 acres of Refuge land would be isolated by the physical presence of Reach 3, therefore resulting in indirect, but permanent, impacts (see Table 3.6-1 and Figure 3.6-1, Land Ownership Proposed Project Alignment in Section 3.6 Biological Resources). These impacts require take authorization from the USFWS through a Biological Opinion. As part of the Project design, CVWD would acquire 24.9 acres of private lands located near Reach 3 that will be transferred to the USFWS to offset the 9.05 acres of impacts that would occur to federal lands on the Refuge. CVWD and the USFWS would transfer these lands prior to construction.

The Preserve is located adjacent to portions of Reaches 1 through 4. Portions of these reaches will define the Preserve boundary, as recognized in the Multiple Species Habitat Conservation Plan (MSHCP), which provides management direction for the Preserve. Specifically, Reaches 1, 2, and 3 will redefine portions of the Preserve boundary (Appendix C.5). Reach 4 was designed to align with the existing southern boundary of the Preserve. Overall management of the MSHCP is provided by the Coachella Valley Conservation Commission (CVCC), a joint powers authority of elected representatives. Implementation of the Project would require coordination with the Coachella Valley Association of Governments (CVAG) and regulatory agencies, including the California Department of Fish and Wildlife (CDFW) and the USFWS, in order to ensure consistency of the Project with the Coachella Valley MSHCP (CVMSHCP) (see Figure 1-2), as described in Appendix C.5.

2.2 Proposed Project (Alternative 1)

Alternative 1 is comprised of four individual reaches, as described below in Section 2.2.1 (Project Elements). Alternative 1 would tie into existing flood control features including the floodway at the Classic Club Golf Course and the existing channel in the Del Webb / Sun City residential development located on the east side of Washington Street. Implementation of Alternative 1 would protect undeveloped and developed areas on the alluvial fan downstream of Project features. Areas located above Reach 1 would

remain subject to flooding from Long Canyon and Morongo Wash, including various industrial facilities (CalPortland cement plant, Desert Recycling Center), residences along the northernmost areas of Desert Moon drive and Via Las Palmas, and open undeveloped lands, including the CDFW Coachella Valley Ecological Reserve (see Figure 1-2, Proposed Project Alignment).

The temporary and permanent impacts associated with Alternative 1 are shown in Figure 1-2. Impacts to waters of the U.S. are described in Section 3.6 (Biological Resources), Alternative 1 would permanently impact approximately 10.62 acres and 17,162 linear feet of waters of the U.S. through the discharge of fill required to construct the levees and channels. This alternative would also temporarily impact approximately 4.50 acres and 3,236 linear feet of waters of the U.S. from the staging and storage of equipment and materials. Approximately 17.98 acres of waters of the U.S. located below the levees would be impacted through a reduction of hydrology to the channels.

2.2.1 Project Elements

The proposed Project includes levees, channels, culverts, and a sediment basin (at the end of Reach 1), as shown in Figure 2-1 (Reach 1 and 2 Alignments), Figure 2-2 (Reach 3 Alignment), and Figure 2-3 (Reach 4 Alignment). Figure 2-4 (Levee and Channel Construction Cross-Sections) provides a cross-section view of the levee and channel designs, access roads, and maintenance/patrol roads. Soils generated by the proposed Project would either be used to construct the levees or disposed of off-site, as shown in Figure 2-5 (Sand Disposal Areas). The Project features are outlined in Table 2-1 and further described below.

All levees would have an underground "toe" (levee toe) extending to a depth of approximately 15 feet. The top, upstream/northern sides and the toe of the levees would be covered with soil cement, while the southern/downstream side would be comprised of earthen materials (soil). Soil cement is a compacted high-density mix of pulverized native rocks and soils bonded with cement and water that is highly resistant to erosion while maintaining an earthen color. The channels would also be fully lined with soil cement to protect the structures during large flow events.

- **Reach 1.** Reach 1 (see Figure 2-1) is comprised of an approximately 12,700-foot long (2.4 miles) levee (Levee 1). Water and sediment from the Indio Hills would flow naturally toward Reach 1 and be diverted to the 550-acre floodway located at the terminus of Reach 1 (described below). The height of Levee 1 would vary from 5 feet to 14 feet depending on topography and ground slope and be designed to accommodate a 100-year flood event. A minimum 12-foot access (patrol) road would be constructed on the top of the levee and an unpaved access road would be located on the downstream (west side) of the levee to support operations and maintenance (O&M) activities. Levee 1 would range from 75 to 100 feet in width and initiate approximately 0.1 mile to the east of the intersection of 28th Avenue and Rio del Sol Road, on the south side of 28th Avenue, and extend in an east-southeasterly direction. The levee would generally run parallel and north of an existing Southern California Edison (SCE) utility corridor. Levee 1 would cross Sierra del Sol, Desert Moon Drive, and Via Las Palmas. Culverts and road crossings of the levee would be constructed at Desert Moon Drive and Via Las Palmas.

  The proposed alignment of Reach 1 would cross 37 non-residential properties and 7 residential properties, as shown in Figure 2-6 (Affected Properties – Reach 1 Alignment). These properties would need to be obtained by the CVWD in order for this reach to be constructed. The limits of land acquisition depend on the percent of the parcel crossed by the final Project alignment and the temporary construction access needs. If the existing use of any parcel impacted by the Project cannot be maintained, the entire parcel may be acquired.

  Sediment Basin. A sediment basin would be installed at the downstream end of Reach 1 in order to trap sediment, slow the velocity of stormwater flow across the Preserve, and avoid adverse effects

associated with erosion or channel migration (Figure 2-1). The sediment basin would be approximately 2.1 acres in size and would consist of an excavated basin with riprap protection on the upstream side. The sediment basin would also induce deposition of fluvially-transported sediment on the wind corridor for natural transport onto the Preserve. Storm water directed by Reach 1 would flow through the sediment basin, overland in a southeast direction towards Reaches 2 and 3, described below.

Road Crossing. Roads would be constructed over the Reach 1 levee at Via Las Palmas and at Desert Moon Drive to maintain access between the communities north and south of Levee 1. The road crossings would generally match the width of the existing roadways and be consistent with Riverside County standards. The design speed is 35 miles per hour (mph) at Via Las Palmas and 25 mph at Desert Moon Drive. The road crossings are designed to have the smallest permanent footprint to minimize impacts to sand migration.

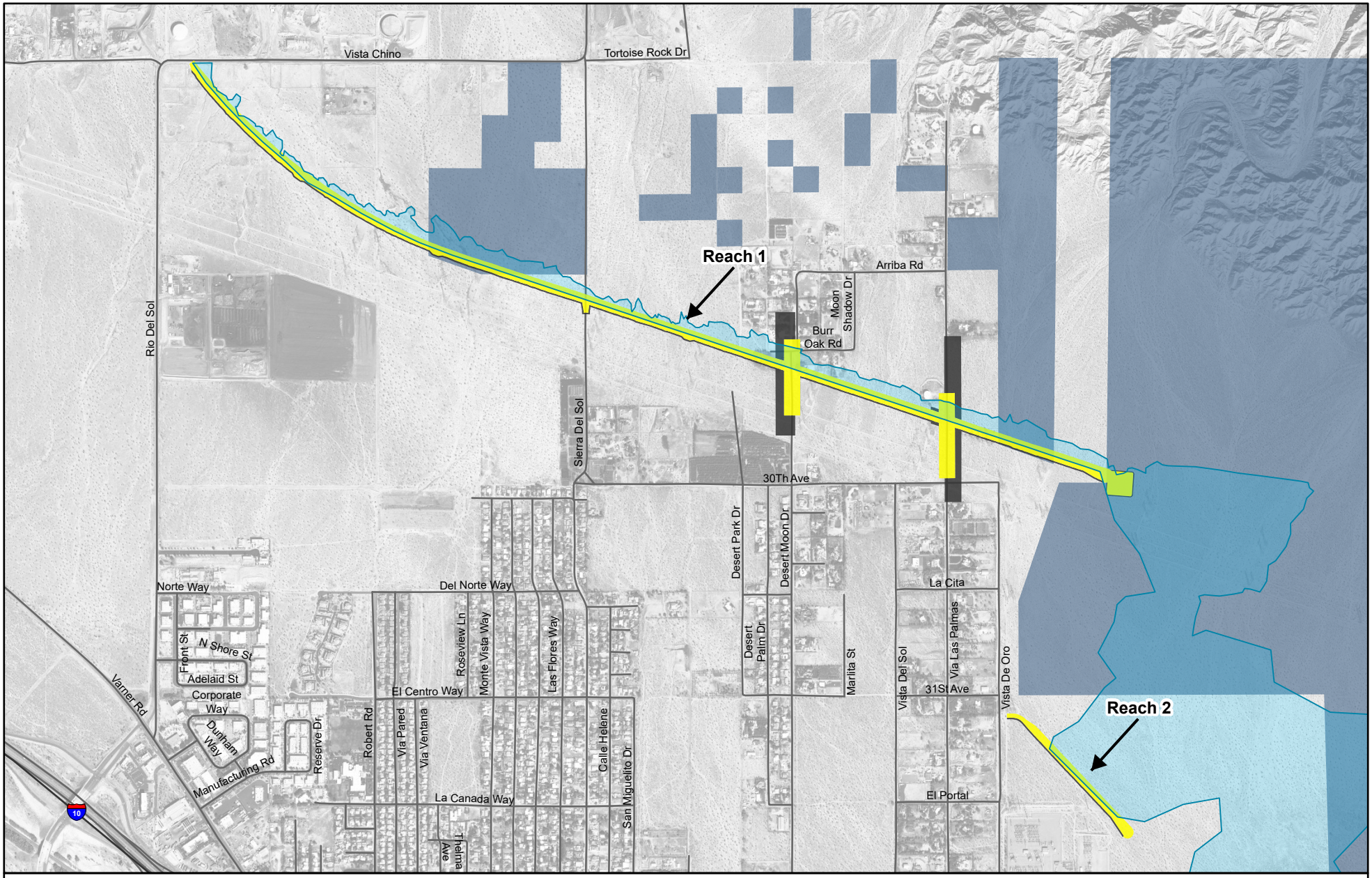


Figure 2-1

Reach 1 and 2 Alignment

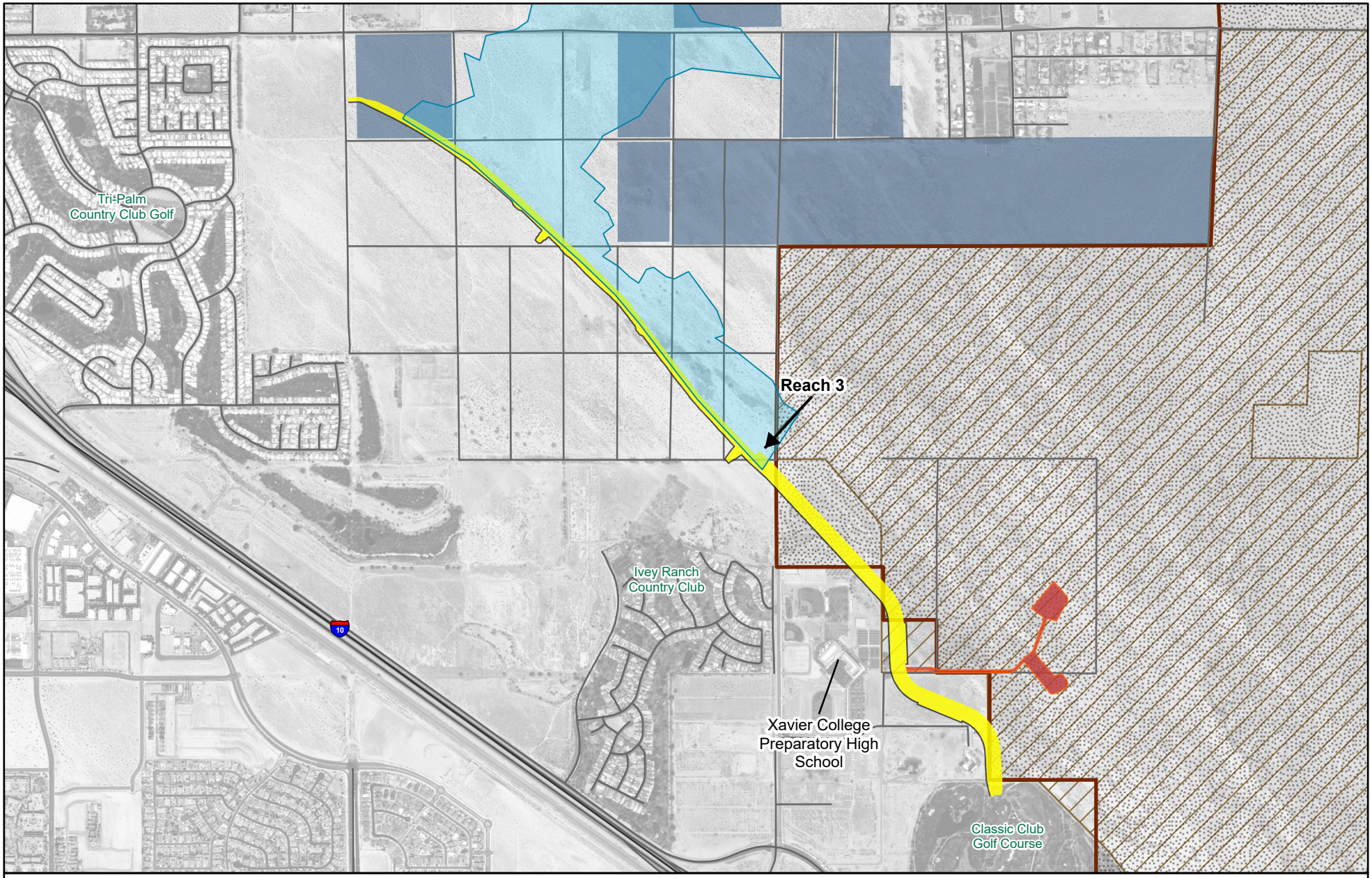


Figure 2-2

Reach 3 Alignment

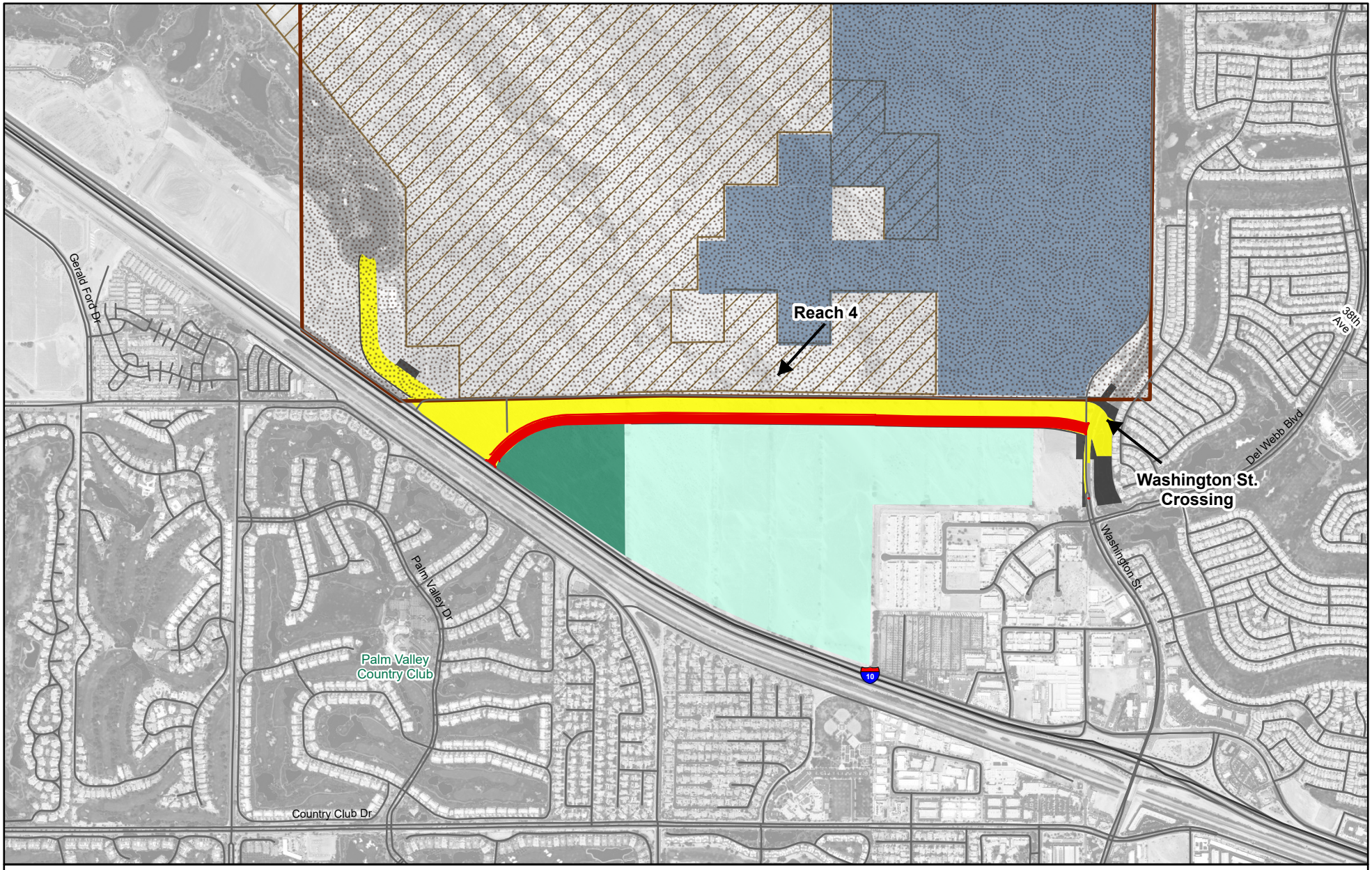


Figure 2-3

Reach 4 Alignment

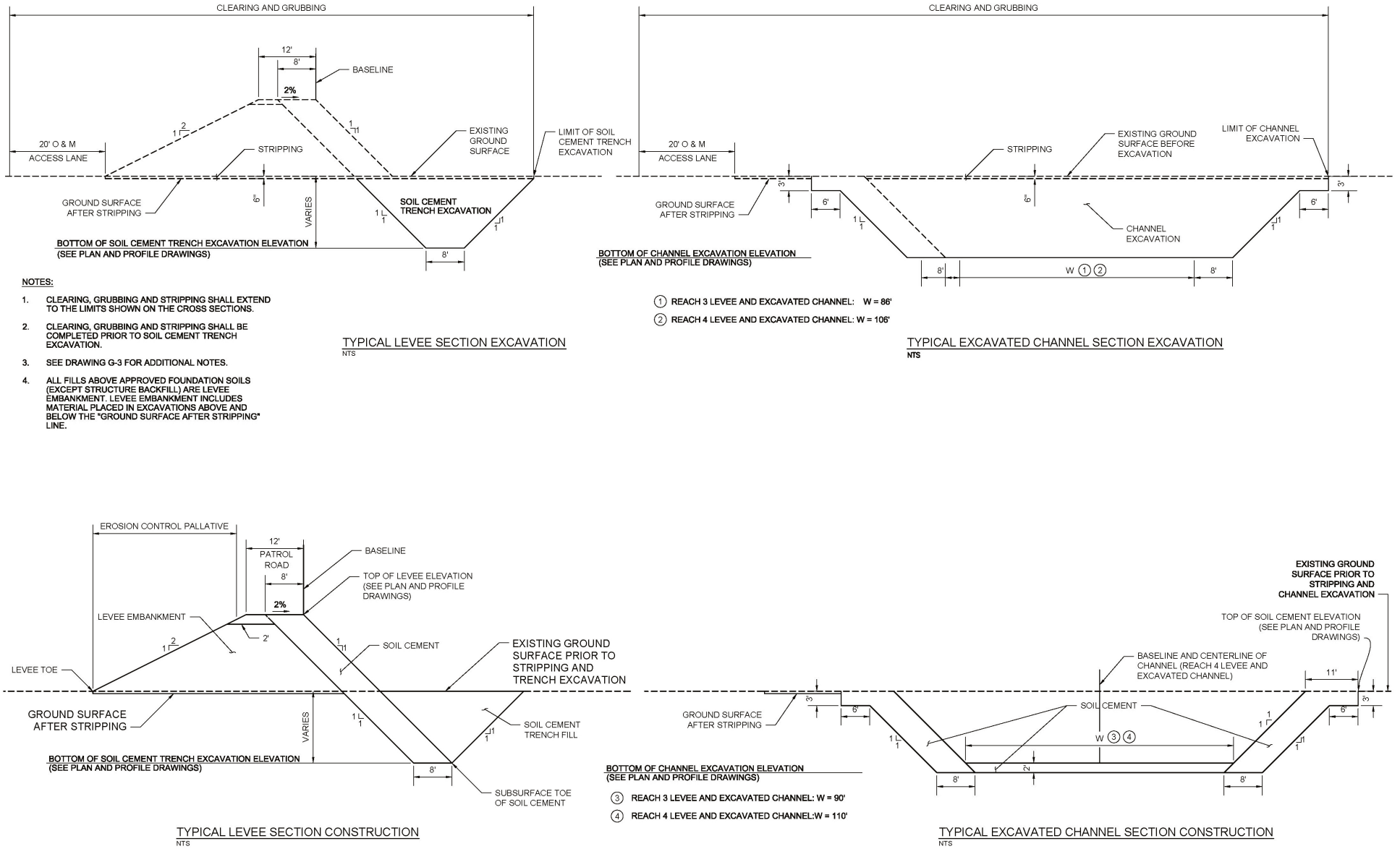


Figure 2-4

Levee and Channel Construction Cross-Sections

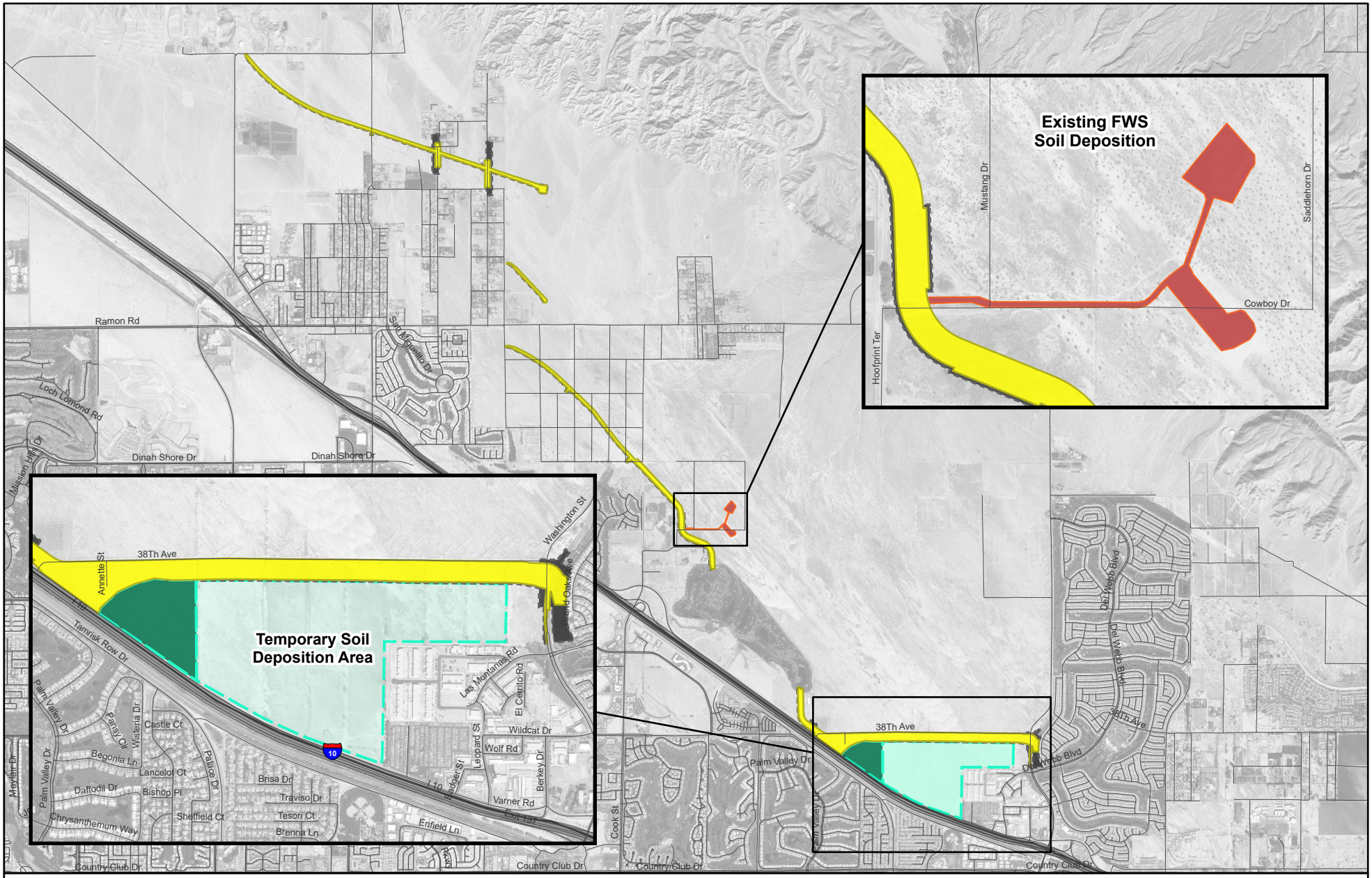


Figure 2-5

Proposed Sand Disposal Areas

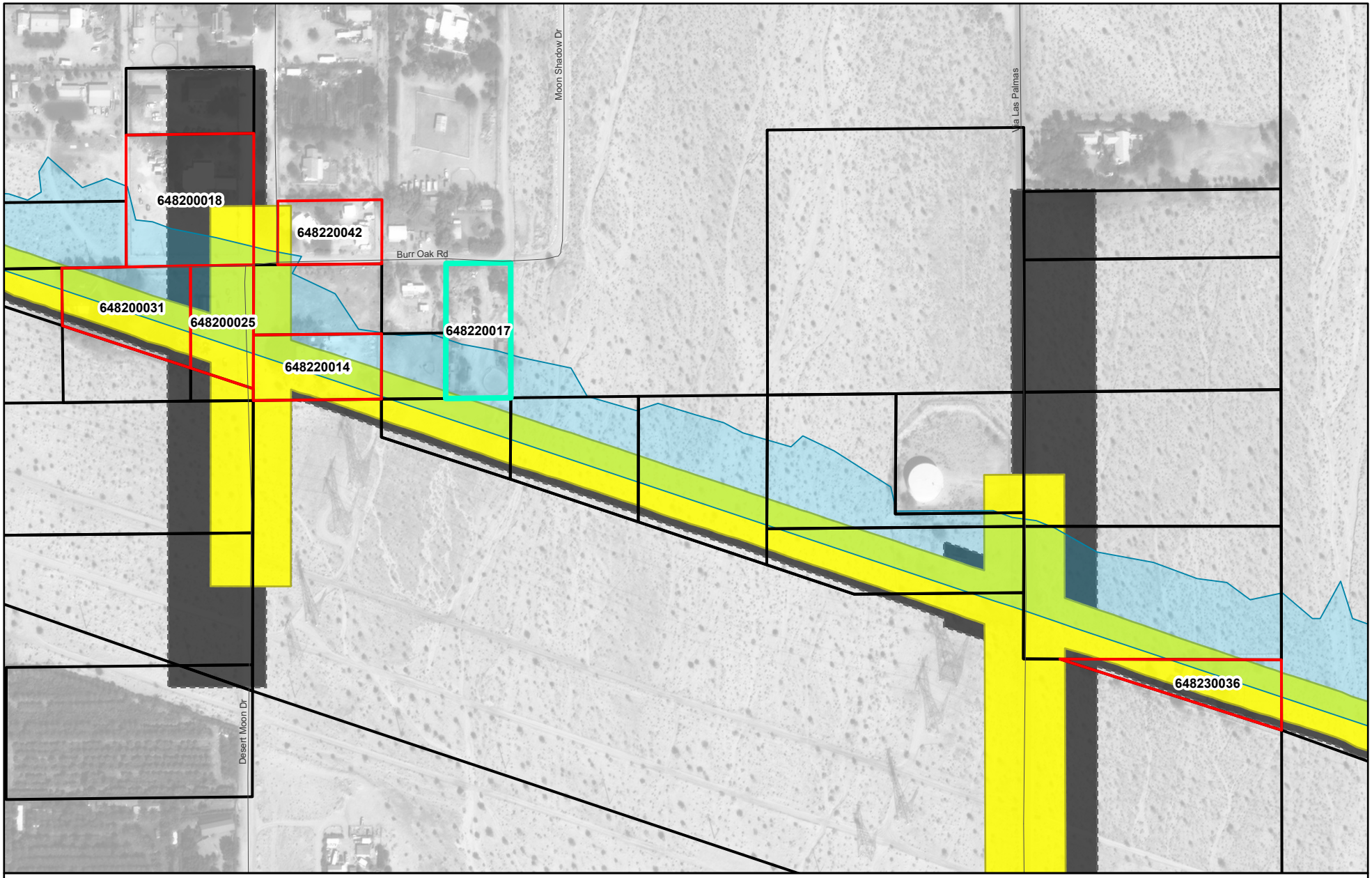


Figure 2-6

Affected Properties Reach 1 Alignment

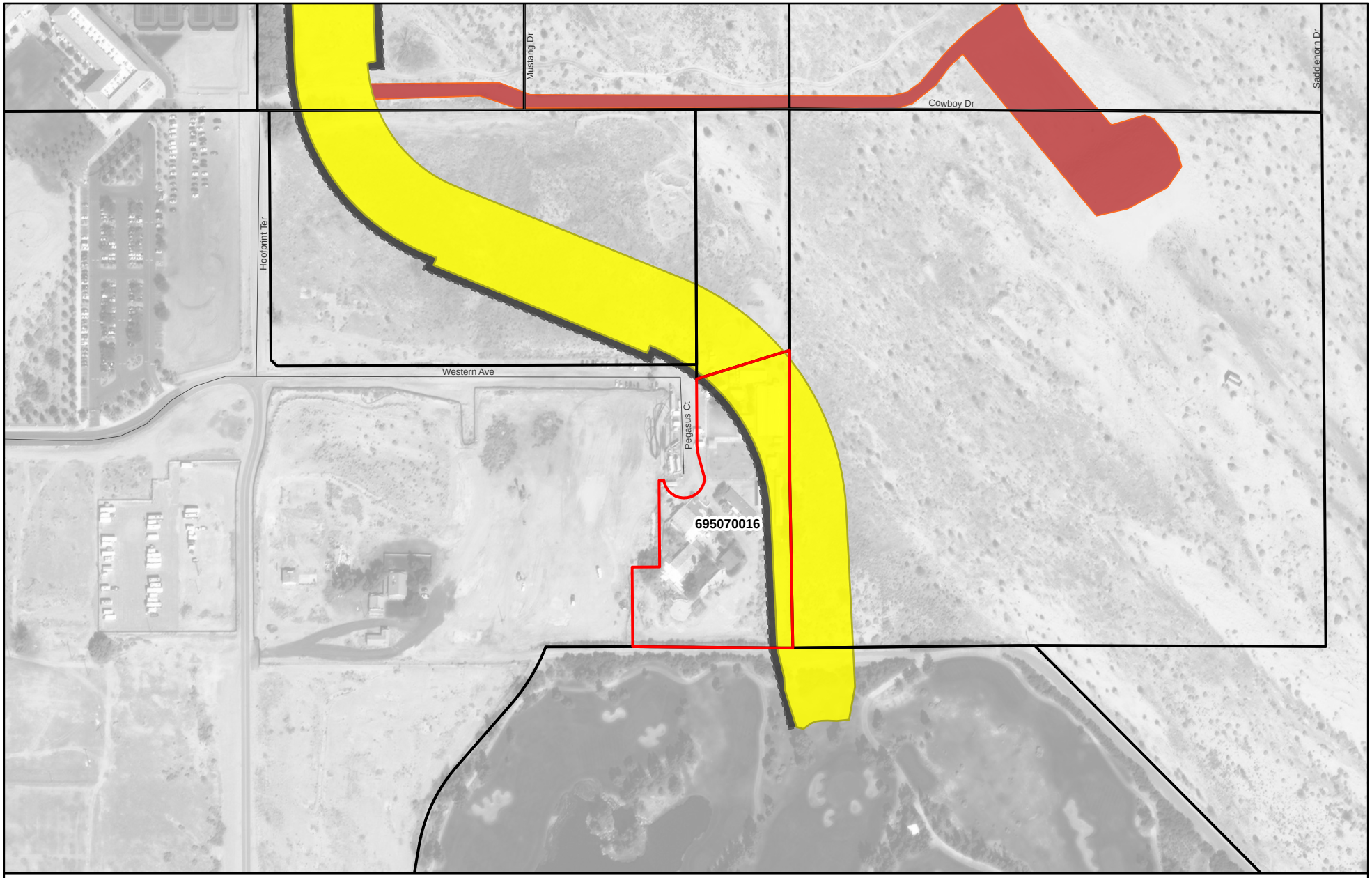


Figure 2-7

Affected Properties
Reach 3 Alignment

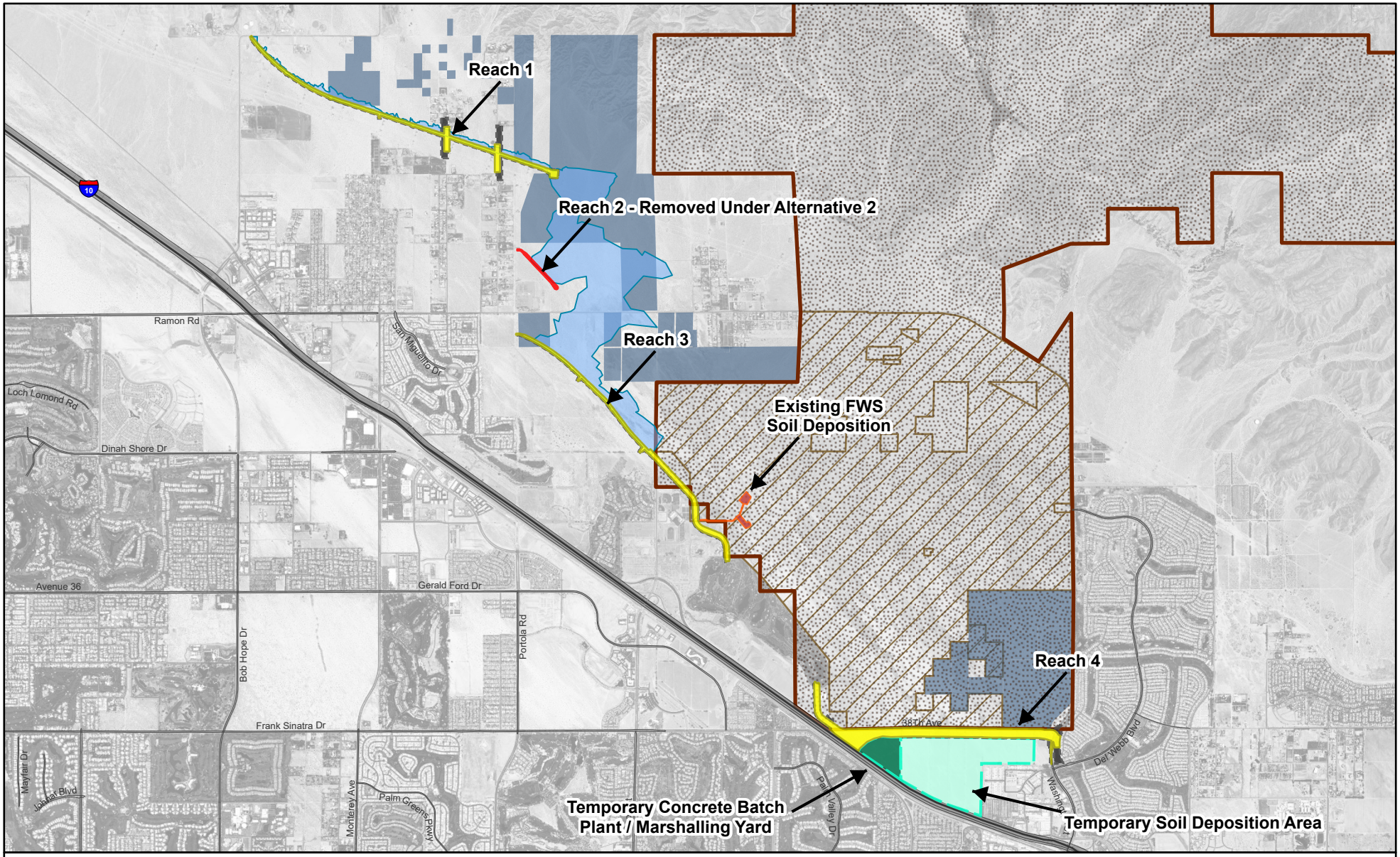


Figure 2-8

Alternative 2 Alignment

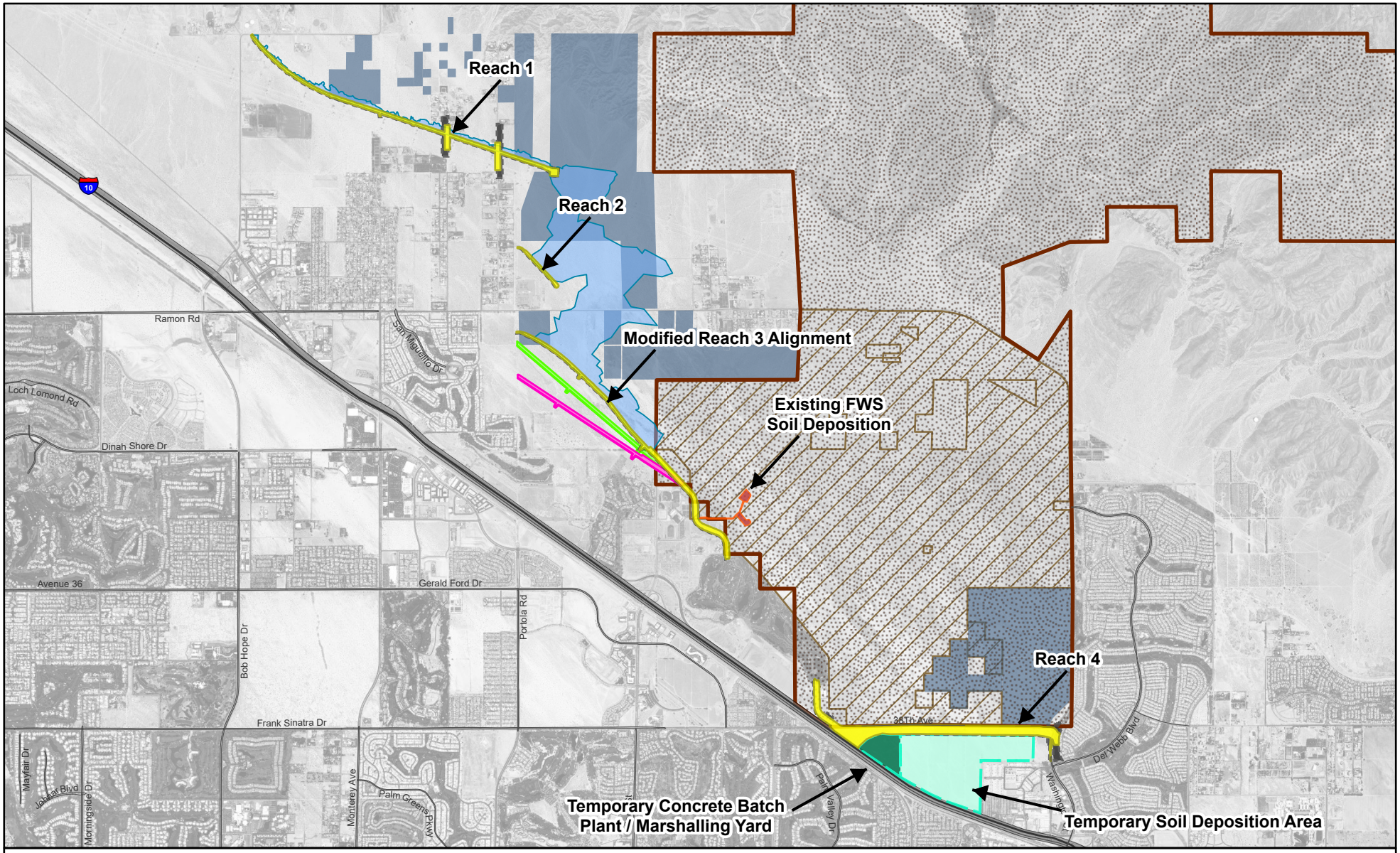


Figure 2-9

Alternative 3a and 3b Alignments

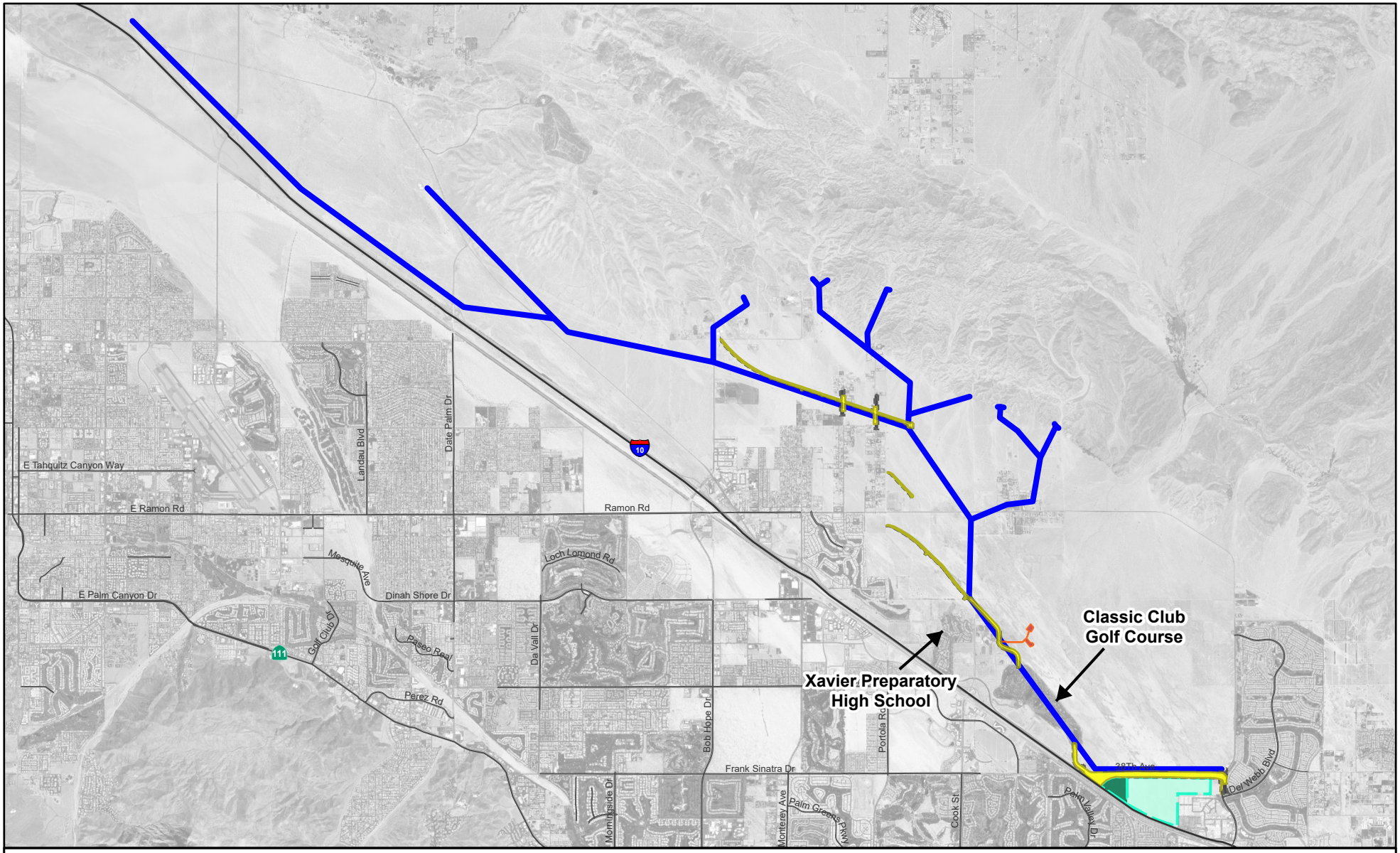
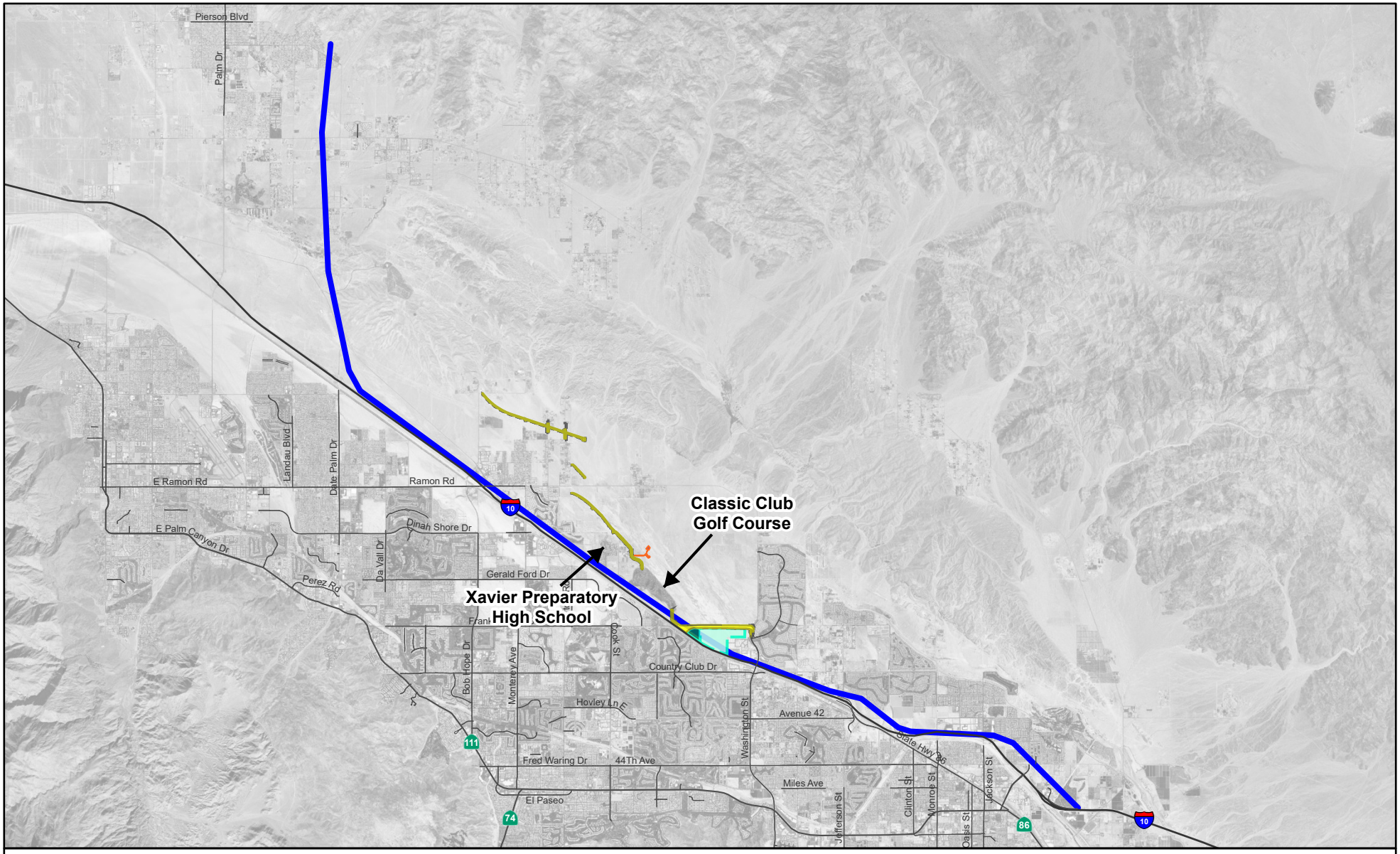


Figure 2-10

Complete Channelization Alternative



Permanent Impact Area
Temporary Impact Area
Temporary Soil Deposition Area
Temporary Concrete Batch Plant/ Marshalling Yard
Existing FWS Soil Deposition
I-10 Channelization Alternative

0 1 2 Miles

Figure 2-11

I-10 Channelization Alternative

Table 2-1. Alternative 1 Permanent Project Features and Dimensions

Project Component	Excavate; (Fill) (cubic yards)	Soil Cement (cubic yards)	Height (feet)	Length (feet)	Width (feet)	Surface Area (acres)
Reach 1						
Levee Toe	165,000; (142,000)	(132,000) [1]	—	12,700	15 – 16	4.5
Levee Embankment	(117,000) [1]		5-14	12,700	35 – 56	12
Sediment Basin	5,000 [1]	—	—	220	220	1.1
Reach 2						
Levee Toe	21,000; (17,000) [2]	(14,000)	—	1,700	21	0.6
Levee Embankment	3,000		5	1,700	25	1.2
Reach 3						
Levee Toe	85,000; (70,000)	(65,000) [3]	—	6,500	15 – 18	2.3
Levee Embankment	42,000 [3]		5-14	6,500	22 – 57	6.0
Channel	401,000 [4]	(120,000)	—	5,300	132 – 145	17
Reach 4						
Channel	1,154,000 [5]	(292,000)	—	10,300	166 – 176	40
Reach 4 Washington St. Crossing	9,000 [5]	—	—	624	180 – 325	13
Washington St. Widening	—	—	—	500	30	0.04
Avenue 38 (south of Reach 4)	—	—	—	7,600	76	13
Floodway	—	—	—	See Figures 2-1 to 2-3		550
Soil Disposal Area (South of Avenue 38)	(726,000)	—	2	1,200 – 2,700	3,000 – 5,000	250
Sand Disposal Area (Preserve)	(100,000)	—	8	660	330	5.0

Notes: All quantities are based on preliminary engineering estimates and may change as part of final engineering.

1 – Reach 1 Levee embankment includes 89,000 cubic yards (CY) imported from the Reach 3 Channel excavation, with the remainder coming from the excavated material for the Reach 1 toe and sediment basin. Soil cement for Reach 1 consists of soil excavated from the Reach 4 Channel mixed with cement from a batch plant.

2 – Reach 2 would generate a net surplus of approximately 1,000 CY of soil, which is within the range of calculation error and has been ignored in subsequent calculations. Soil cement for Reach 2 would consist of soil excavated from the Reach 4 Channel.

3 – Reach 3 Levee embankment includes remaining 15,000 CY from Reach 3 levee toe excavation and import of 27,000 CY from Reach 3 Channel excavation. Soil cement for Reach 3 consists of soil excavated from the Reach 4 Channel.

4 – Excavated materials from the Reach 3 Channel would be exported to Reach 1 Levee (89,000 CY), Reach 3 Levee (27,000 CY), Coachella Valley Preserve/sand disposal area (100,000 CY), and the soil disposal site south of Avenue 38 (66,000 CY).

5 – Excavated materials from the Reach 4 Channel and the Washington Street Crossing would be used for soil cement on Reach 1 (132,000 CY), Reach 2 (14,000 CY), and Reach 3 (65,000 CY), and the Reach 4 Channel (292,000 CY). Remaining would be placed on the soil disposal site south of Avenue 38 (660,000 CY).

Reservoir 4602. Reservoir 4602 is an existing above ground water tank owned and operated by CVWD. The reservoir is located west of Via Las Palmas and north of the proposed Reach 1 alignment. The reservoir is protected by a small berm with established vegetation and would be protected and maintained in-place during construction of the proposed Project. Additional flood protection may be provided in the future to ensure the integrity of the structure after the construction of Reach 1.

- **Reach 2.** Reach 2 (see Figure 2-1) is comprised of an approximately 1,700-foot long (0.32 mile) levee (Levee 2) with a height of approximately 5 feet. The levee would range from 12 to 135 feet in width and is positioned in the mid-alluvial fan just northeast of SCE's Mirage Substation to protect the substation and to facilitate the diversion of water in a southeasterly direction. A minimum 12-foot access (patrol) road would be constructed on the top of the levee and an unpaved access road would be located on the downstream (west side) of the levee to support O&M activities. Levee 2 is aligned in the direction

of the prevailing wind to avoid interference with Aeolian transport in this area. Reach 2 would capture large storm events from Reach 1 and direct flow towards Reach 3.

The proposed alignment of Reach 2 would cross 3 non-residential properties. These properties would need to be obtained by the CVWD in order for this reach to be constructed. As noted above, the limits of land acquisition depend on the percent of the parcel crossed by the final Project alignment and the temporary construction access needs. If the existing use of any parcel impacted by the Project cannot be maintained, the entire parcel may be acquired.

- **Reach 3.** Reach 3 (see Figure 2-2) is comprised of an approximately 6,500-foot long (1.2 miles) levee (Levee 3) and a 5,300-foot long (1.0 mile) incised trapezoidal channel lined with soil cement (Reach 3 Channel). A minimum 12-foot-wide access road would be located on top of the levee and an unpaved access road would occur on the downstream (west side) of the levee. Levee 3 would vary from approximately 5 feet to 14 feet in height depending upon the topography and ground slope in order to accommodate the volume and velocity of water associated with the 100-year flood event. Levee 3 would range from 12 to 200 feet in width and initiate 1,000 feet south of E. Ramon Road and approximately 2,000 feet southwest of the downstream end of Levee 2. Reach 3 would cross natural lands, private lands owned by Xavier College Preparatory High School, portions of the Preserve/Refuge and the Pegasus Riding Academy (see Figure 2-7, Impacted Properties – Reach 3 Alignment). As noted above, the limits of land acquisition depend on the percent of the parcel crossed by the final Project alignment and the temporary construction access needs. If the existing use of any parcel impacted by the Project cannot be maintained, the entire parcel may be acquired. Although not constructed, new residential developments have been proposed south of Reach 3; however, the Project alignment is not expected to interfere with these developments should they occur.

  An existing earthen berm located approximately one-half mile north of Xavier High School would also be crossed by Reach 3. This berm would be crossed where the reach transitions from a levee to a channel configuration. At the terminus of Reach 3 the channel would divert flows into an existing storm water conveyance system located on the Classic Club Golf Course before connecting to Reach 4.

  The transition of Reach 3 to a channel configuration is intended to minimize land use conflicts with athletic fields located at Xavier College Preparatory High School and to minimize the disruption to aeolian sand transport patterns. The channel configuration would curve around the athletic fields, whereas a levee would need to maintain a straighter alignment through the high school property to maintain storm conveyance. As described in Section 1.2 (Project History and Previous Studies), the Project was previously designed and assessed by the Corps Planning Division (Los Angeles District). During that planning process, the Corps communicated with Xavier College Preparatory High School regarding the design of Reach 3 and the high school property. The design of Reach 3 was selected because it minimizes disruptions to the high school property while providing flood protection and preserving sand migration on to the Preserve/Refuge.

  The curved channel configuration would minimize disruptions to sand migration onto the Preserve/ Refuge because, in comparison to a levee design, the channel would not create a vertical obstruction to sand migration (with the exception of a short length of Reach 3 Channel where the embankment would be approximately 3 feet high). Sand that blows into the channel or is deposited during storm events would be removed from the channel and placed on the active wind corridor for natural migration onto the Preserve/Refuge (see Section 2.2.3, Operations and Maintenance).

  Storm flows leaving Reach 3 would flow into the existing stormwater conveyance system located within the Classic Club Golf Course. Section 1.2 (Project History and Previous Studies) describes the previous coordination undertaken regarding flood conveyance through the Classic Club Golf Course. It was determined that with or without the proposed Project's flood control system, the Classic Club Golf

Course system has sufficient capacity to safely convey on-site and off-site flows (Tettemer & Associates, 2004). Since the time of that determination substantial development has occurred throughout the Project area. However, the flows that would be conveyed by the Project through the Classic Club Golf Course system are the same as those considered in the 2004 analysis.

- **Reach 4.** Reach 4 (see Figure 2-3) is comprised of an approximately 10,300-foot long (2.0-mile) incised trapezoidal channel (Reach 4 Channel). The Reach 4 Channel would range from 200 to 350 feet in width and convey stormwater flows from the southeast end of the Classic Club Golf Course and continue south then east, adjacent to the south of the existing alignment of Avenue 38. The channel would span a fallow jojoba farm and be immediately adjacent to the Preserve/Refuge. The Riverside County Board of Supervisors previously approved the realignment of Avenue 38 as a County project which would move Avenue 38 adjacent and south of the proposed Reach 4 Channel. Realignment of the road would now occur as a component of the proposed Project, where CVWD would build two of the four proposed lanes, including shoulders and gutters. The Reach 4 Channel would terminate at Washington Street and tie into existing stormwater conveyance facilities located in the Del Webb / Sun City development (see "Washington Street Crossing" discussion below).
- **Washington Street Crossing.** At Washington Street the Project would include construction of a conveyance system to direct stormwater flows under Washington Street and into an existing stormwater conveyance system with the capacity to transmit Project-related flows (see Figure 2-3). The maximum area that could be affected by this crossing is estimated to be 5 acres, accounting for any road realignment that may be necessary. On the downstream side of the Washington Street crossing, an existing stormwater basin (Sun City Collection Basin) would be deepened (excavate approximately 9,000 cubic yards [CY]) to accommodate flows diverted by the Project. This basin is currently landscaped and would be fully restored to conditions agreed to by the Sun City development following completion of the Project. The southbound side of Washington Street, south of the realigned Avenue 38 and just north of Las Montanas Road/Del Webb Blvd., where the current road is three lanes (one southbound and two northbound), would be widened as part of the Project to make it easier to turn on and off of the relocated Avenue 38.
- **Floodway.** The proposed Project includes acquisition of an approximate 550-acre floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (see Figure 2-1), to comply with the requirements of the CVMSHCP (see Appendix C.5). The floodway will also preserve a total of 70.41 acres (1.54 acres of USACE waters in Reach 1; 47.86 acres in Reach 2; and 21.00 acres in Reach 3). Development would be prohibited in this floodway to protect the wind corridor and limit disruptions to sand migration. During O&M of the proposed Project suitable material (e.g., fine sands) that accumulate along the levees and channels would be excavated and distributed in the floodway area for natural distribution onto the Preserve or placed in the proposed USFWS sediment disposal area. See Section 2.2.3 (Operations and Maintenance) for further information on sand disposal.

2.2.2 Construction

Construction of the proposed Project includes trenching and excavation to build the levees and channels, road construction and paving, relocation of sewer facilities at Avenue 38, and constructing tie-ins to existing stormwater conveyance systems.

In order to construct the Reach 4 Channel and Washington Street Crossing approximately 871,000 CY of material would be removed. Some of this material would be used to create soil cement for the Reach 1, 2, and 3 levees (211,000 CY), and the remainder (660,000) would be placed in sand disposal areas (described below). Additional material to construct the other levees would be provided by using native materials in the Project footprint and borrowed material from the Reach 3 Channel. Surplus material from

Reach 3 Channel excavation would also be placed in sand disposal areas (66,000 CY). Cement for soil cement and concrete would be obtained from a Project batch plant to be located south of Avenue 38, or may be locally sourced by the contractor. Approximately 68 acre-feet of water would be needed to prepare the soil cement. See Table 2-1 for a breakdown of on-site excavation and soil use.

Asphalt, and other materials, would be provided by the contractor likely from the nearest supplier. Cleared and grubbed materials, stumps, trash, and other items not suitable for fill or levee construction would be transported to the appropriate local landfill. Silt fencing or other suitable fencing would be placed around active construction areas to prevent species, including the CVFTL, from entering areas where heavy equipment and machinery would be used. This temporary fencing would be removed at the end of construction.

Sand Disposal Areas. Material excavated from the Project footprint area that is not used for construction of the levees would be placed within two sand disposal areas (see Figure 2-5). Suitable blowsand material (approximately 100,000 CY) would be salvaged and placed at a blowsand augmentation area on the Refuge constructed by the USFWS (see inset of Figure 2-5). The placement of approximately 100,000 CY of blowsand in this area would result in an approximately 8-foot-high sand dune. Material from this location would be transported by wind back onto the Preserve/Refuge to replace sand lost through wind driven erosion. See Section 2.2.3 (Operation and Maintenance) for additional information on distribution of blow sand to the Preserve/Refuge.

Approximately 726,000 CY of material from the Reach 4 Channel construction would be placed south of Avenue 38 within the existing windrows (referred to as the soil disposal area – see Figures 1-2 and 2-3). This would result in an approximately 2-foot increase in the ground level across the approximately 250-acres site (permanent disturbance area). To reduce impacts to sensitive wildlife that may use this area after construction, the material would be sorted with the finest grain sands deposited as the top layer. ~~In addition, the existing dunes south of Avenue 38 would be permanently fenced to prevent access.~~

Disturbance Areas. Temporary disturbance areas associated with construction of the proposed Project would be limited to those areas south of the permanent Project footprint, as shown in Figures 2-1 through 2-3. Disturbance on the upstream sides (bordering the Preserve/Refuge) would be limited to the Project's permanent footprint extending to the limit of soil cement trench excavation (right-of-way limit), which includes a 20-foot work area for future O&M activities (see Section 2.2.3, Operation and Maintenance, below).

Construction of the proposed Project would result in approximately 175.47 acres of permanent disturbance and 286.35 acres of temporary disturbance, where temporary disturbance areas are any that are beyond the permanent impact areas.

Access. During construction, existing roadways in the area would be utilized for access of personnel, vehicles, and equipment. These roads include Varner Road, Rio Del Sol Road, Sierra Del Sol, Desert Moon Drive, Via Las Palmas, E. Ramon Road, Shadow Valley Drive, Avenue 38, Washington Street, as well as local connector roads, as needed (see Figure 4.13-1, Construction Traffic Routes). See Sections 3.13 and 4.13 (Transportation) for additional information on existing traffic conditions and proposed access roads. Per Environmental Commitment (EC) T-1 (see Section 2.2.4, Environmental Commitments, below), haul routes would be designed to minimize distances to the work site and avoid heavily congested areas or large residential communities.

Construction Schedule

Construction of the proposed Project is anticipated to occur in two phases for the duration of approximately 27 months, as shown in Table 2-2. Except as otherwise required for the safety or protection of persons or property, all construction work would be performed Monday through Friday between 7:00 a.m. and 3:30 p.m. No work would occur at night or on Saturday, Sunday, or holidays without CVWD's written consent. Construction would occur year-round.

Construction of the channels and levees would occur in phases beginning at the downstream end of the Project at the Reach 4 Channel and ending with the construction of Reach 1. Phasing is required to ensure that any storm flows that may occur during construction may flow into existing conveyance facilities. In addition, the phasing of construction would provide materials needed to create the upstream levees and soil cement.

Phase One. This initial construction phase would require approximately one year to complete and includes these major features.

- **Washington Street Crossing.** The Washington Street crossing would consist of a multi-barrel culvert under Washington Street. This would be built in order to direct flows from the Reach 4 Channel into existing stormwater conveyance facilities located in the Del Webb / Sun City development.
- **Stormwater Collection Basin.** The existing Sun City Collection Basin located at the east/downstream end of Washington Street would be deepened by up to 3 feet, in order to accommodate concentrated stormwater flows diverted by the proposed Project. This basin would be restored to conditions agreed to by the Sun City development concurrent with the development of other reaches.
- **Connector Facilities.** Connector facilities on the downstream end of Reach 3 would be implemented to direct flows from the Reach 3 Channel into the Classic Club Golf Course conveyance system. This would include the acquisition and redevelopment of property located adjacent and to the north of the golf course. Connector facilities would also be constructed on the upstream end of Reach 4, directing flows out of the Classic Club Golf Course conveyance system and into the Reach 4 Channel.
- **Road Improvements.** Avenue 38 would be realigned as part of the initial construction effort to avoid having to cross the Reach 4 Channel and to provide flood protection to Avenue 38. In addition, road crossings over the Reach 1 Levee at Desert Moon Drive and at Via Las Palmas would begin. The road crossings on Reach 1 would be constructed before the completion of the Reach 1 Levee.
- **Sewer Line Modifications.** Realignment of Avenue 38 would require modifications to the sewer line located within the current road alignment. Such modifications may include crossing beneath the Reach 4 Channel from Varner Road to Avenue 38 or the installation of a new sewer line situated within the realigned Avenue 38. Depending upon the alternative selected, a sewage pump station may be required.

Table 2-2. Proposed Project Construction Schedule

Task – Phase 1	Duration (days)	Year 1												Year 2			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Site Preparation (staking, install BMPs, soil cement batch plant & trial mixes, relocate utilities and fencing)	140																
Washington Street Crossing	263																
Classic Club Golf Course Culvert	207																
Via Las Palmas Culvert	212																
Desert Mood Drive Culvert	207																
Reach 4 Channel	137																
Washington Street Widening	18																

Task – Phase 2	Duration (days)	Year 2								Year 3		
		17	18	19	20	21	22	23	24	25	26	27
Reach 4 Channel Continued	137											
Reach 3 Channel	55											
Reach 3 Levee	34											
Reach 2 Levee	18											
Reach 1 Levee Downstream of Desert Moon	26											
Reach 1 Levee Upstream of Desert Moon	45											
Avenue 38 Relocation	49											

Phase Two. The second phase of construction would require approximately one year to complete and would include the construction of the levees and channels of Reaches 1-3. Construction would commence at Reach 3. This would allow for excavated material from Reach 4 to be used in creating soil cement for Reaches 1-3, as shown in Table 2-1. This material would be staged in the Project's temporary disturbance area prior to the creation of soil cement. All staged materials would be protected against erosion and measures would be applied to reduce impacts to CVFTL, flat tailed horned lizards, burrowing owls, Coachella Valley milk-vetch, and other sensitive resources (See Section 4.6, Biological Resources, for details regarding mitigation measures for biological resources). A soil cement mill would be staged onsite or within the immediate Project vicinity to create soil cement for constructing the levees.

Construction Materials

The proposed Project would require approximately 14,000 CY of concrete, 1,200 tons of reinforced steel, 93,000 tons of cement (for soil cement), 12,000 tons of asphalt cement (pavement material), and 13,000 tons of aggregate base to construct the levees and channels. Approximately 650 acre-feet of water would be needed to support construction, dust control (assuming ½-inch of water applied to active work area daily), soil moisture conditioning, and preparation of the soil cement. Additional water would be needed for structural concrete, which would be supplied by the batch plant, and is not included in the estimated water use noted above.

Materials for constructions are anticipated to be sourced from the following providers; however, Project materials may come from other suppliers:

- Portland Cement – Robertson's Ready Mix (72460 Varner Road in Thousand Palms, just south of Ramon Road);
- Rebar – Endura Steel (72470 Varner Road, Thousand Palms – next to Robertson's Ready Mix);
- Asphalt Cement – Granite Construction Supply (38155 Monroe Street, Indio – 13 miles from Thousand Palms); and
- Aggregate base – West Coast Aggregate (92500 Airport Boulevard, Thermal – 23 miles from Thousand Palms).

It is assumed that non-hazardous construction debris would be sent to the Desert Recycling (27105 Sierra Del Sol, Thousand Palms, near Reach 1).

2.2.3 Operation and Maintenance

Operation and maintenance (O&M) activities include:

- Sand removal, distribution, or disposal;
- Adaptive management;
- Facility repair; and
- Vegetation removal.

Each of these O&M activities is described below. O&M activities would impact waters of the U.S. or waters of the State where sediment is removed from the face of the levees. However, these activities were included in the USACE's scope of analysis and appropriately addressed as part of the federal consultation activities described elsewhere in this EIR/EIS.

Sand Removal, Distribution, or Disposal. To ensure that sand migration through the existing wind corridor is not disrupted and that sand dune habitat in the Preserve/Refuge continues to be replenished, O&M

activities would include the removal of excess sand which collects along the Project levees and within the Project channels.

Two types of sand removal activities would occur:

- Sand that accumulates along the levees would be removed approximately once per year and after major flood events (inspections would occur after major storm events to determine whether sediments have accumulated along the facilities).
- Sand removal from the channels will vary based on the accumulation of sand and other debris. Sand removal may be daily or periodic, such as occurring one week each month, depending upon the actual rate of sand accumulation and the frequency preferred by the CVWD or their sand removal contractor. It is anticipated that approximately 0.5 feet of sand would accumulate per year in Reach 3 and one foot per year in Reach 4. Inspections would be performed to determine the necessary frequency of sand removal activities for Project channels.

The County of Riverside currently removes sand that accumulates along Avenue 38 several times per year depending on weather conditions and storm frequency (which determine how quickly sand accumulates). The frequency of sand removal activities associated with the proposed Project would vary for levees versus channels because sand is expected to accumulate within the channels more quickly than along the levees, where most sand would continue to be blown downwind. All Project facilities would be regularly inspected to assess the rate of sand accumulation, and sand would be regularly removed to maintain flow capacity. To maintain the Project's flow capacity, the levee and channel facilities would be cleared of accumulated sand or other material prior to major storm events and inspected immediately following large storms.

In addition to maintaining flood capacity, the regular removal of accumulated sand is important to reduce the likelihood that CVFTL colonize portions of the channels and levees. This could hinder Project O&M activities. Sand removed from the channel would be spread within the wind corridor for aeolian transport onto the Preserve. Material deemed unsuitable for redistribution would be disposed of in an approved area or facility. Blowsand removal would not occur in the Classic Club Golf Course; the golf course would be responsible for cleanup of sediment deposited from storm events on this private facility.

Adaptive Management. An adaptive management plan would be enacted to maximize the amount of aeolian sand transport into the Preserve (see Section 2.2.4, Environmental Commitments). Preserve management would continue to monitor habitat functions and dune characteristics. Resource agencies would meet with the CVWD, as needed, to assess habitat quality on the Preserve and determine if any changes to the manual transport system are required.

Facility Repair. O&M activities may include occasional excavation to rebuild or reinforce levee toe(s), and placement of new fill material or soil cement to repair damage, particularly after large storm events. Fill material required during O&M may be obtained from an existing sand and gravel mine (commercial source) near the northwest end of the Project.

Vegetation Removal. The earthen/soil portions of the levees located on the downstream/southern sides of the levee would be periodically sprayed/treated with a dust palliative (soil stabilizer) consisting of a high purity grade co-polymer emulsion to reduce wind-driven erosion and prevent the colonization of vegetation or weeds on the levees. Vegetation can degrade the structural integrity of the levee due to root penetration+ and is not allowed to become established on earthen flood control structures. Maintenance activities may include removal of vegetation along Project levees to provide reliable access to and along the flood control structure, and to comply with federal levee requirements. Maintenance may also include selective removal of non-native vegetation within the Project right-of-way.

2.2.4 Environmental Commitments

CVWD and USACE developed environmental commitments to be implemented as part of the Project design and/or construction, or O&M activities. Environmental commitments are considered part of the proposed Project and would be incorporated during all Project activities.

The environmental commitments were developed to proactively protect sensitive resources and reduce environmental impacts associated with Project activities. CVWD and its contractors shall follow environmental commitments at all times during all Project activities. These environmental commitments can also evolve to become better as improvements are discovered. A number of the environmental commitments have been developed to specifically protect natural resources (plants, wildlife), and for cultural resources. Environmental commitments include pre-construction flagging of sensitive resource areas and other protective measures. The environmental commitments identified in Table 2-3 are in addition to any mitigation measures identified to offset or reduce potential effects of the Project.

Table 2-3. Environmental Commitments Included in Project Design

#	Description
Topography, Geology, and Soils	
G-1	**Design and Inspect for Major Seismic Event.** All Project infrastructure shall be designed to withstand a major seismic event (greater than a magnitude 5.4). All Project features shall be inspected for damages immediately following any measurable seismic event. Appropriate repairs shall be identified and applied as necessary to ensure structural integrity.
Air Quality	
AQ-1	**Concrete Batch Plant.** The CVWD shall ensure that the concrete batch plant(s) used as part of this Project is electrically powered, with no diesel engines except for the potential for an emergency generator only to be used in the case of grid power loss. The emergency generator would not be used to regularly power the batch plant operation and would only be operated long enough to clean out the batch plant after a grid power loss.
Water Resources	
W-1	**Hazardous Spills.** Construction equipment shall be maintained to avoid or minimize the release of any materials, including but not limited to hydrocarbons, oil, grease, and lubricants. Fueling and maintenance activities shall be strictly limited to designated staging areas or off-site maintenance yards. Should an accidental leak or release of material from vehicles and/or equipment occur, it shall be immediately cleaned up and remediated.
W-2	**Limit Construction During Precipitation Events.** Construction activities shall not be planned for periods when precipitation events have been forecast to occur. If a precipitation event occurs while construction is ongoing, construction activities shall be ceased for the duration of the precipitation event.
Biological Resources	
B-1	**Weed Abatement Program.** A weed abatement program, combined with the planting of native species after construction, will be implemented to reduce the potential for intrusion of non-native species within the temporary work limits.
B-2	**Biological Monitoring and Relocation of Sensitive Species.** Monitoring of the site during construction shall be performed by a qualified biologist. If any sensitive species are found on the construction site, work shall be temporarily halted until the species can be relocated. If sensitive species in the Project area cannot be safely relocated and would be adversely affected by the Project, the Biological Opinion prepared for the U.S. Fish and Wildlife Service shall determine whether the loss of a few individuals would be considered significant.
B-3	**Avoid Impacts to Sensitive Species.** Impacts to sensitive species shall be avoided where possible, through the careful placement of Project structures, facilities, equipment, vehicles, and disturbance areas.

Table 2-3. Environmental Commitments Included in Project Design

#	Description
Sand Migration	
SM-1	**Sand Removal and Distribution or Disposal.** All Project levees and channels shall be regularly inspected for the accumulation of blowsand material, and material shall be removed as necessary to maintain capacity of Project features and to avoid the use of accumulated sand as habitat, particularly by sensitive species in the Project area. Removed sand material shall be evaluated for suitability to replenish sand dune habitat on the Preserve; if suitable, the material shall be deposited on the wind corridor in an area where winds are the strongest, and as far upwind as possible. Immediate upwind or downwind obstructions shall be avoided in placing sand on the wind corridor, and sand shall be placed in low-level, non-compacted mounds across the entire width of the wind corridor, in a line roughly perpendicular to the wind direction, to maximize aeolian transport onto the Preserve. Material that is determined to be unsuitable to replenish habitat on the Preserve shall be appropriately disposed of.
SM-2	**Adaptive Management Plan.** An adaptive management plan shall be implemented by the Coachella Valley Water District (CVWD) in coordination with Preserve management to maximize the amount and quality of sand transport onto the Preserve. The sand collection and distribution activities described in SM-1 may be included in this adaptive management plan. The CVWD shall meet with Preserve management on a regular basis (at least once per year) to assess habitat quality on the Preserve and determine if any changes to the manual transport system are required, such as whether deposition sites(s) should be relocated, or whether methods of collecting sand from along Project features and/or spreading sand on the Preserve should be adjusted.
Land Use and Recreation	
L-1	**Incorporate Recreational Uses and Educational Signs to Protect Sensitive Habitats.** Flood control improvements, in particular those that incorporate preservation of an open space corridor, should incorporate recreational uses such as equestrian and hiking trails along the right-of-way, to the extent feasible. Equestrian and pedestrian access through the Project area is not currently blocked, but future development may preclude such open space corridors between the Indio Hills and the Preserve. In order to avoid the degradation of sensitive habitats (desert wash, fan palm oases) due to public access, signs shall be posted along Project-related access points to educate the public on the importance of protecting natural resources, delineating public corridors, specifying use limitations, and advising of penalties if the area is abused.
L-2	**Coordinate with California State Lands Commission.** Prior to finalization, plans for the construction of flood control improvements shall be submitted to the California State Lands Commission for agency review and to ensure that the Project is consistent with the State's residual interests in patented School Lands and/or Lieu Lands.
Greenhouse Gas Emissions	
GHG-1	**Construction Waste Recycling.** Construction wastes shall be reused or recycled to the greatest practical extent including the reuse of excavated materials and the recycling of concrete and asphalt wastes.
Noise	
N-1	**Locate Construction and O&M Activities to Avoid Sensitive Receptors.** Haul routes, staging areas, and construction activities shall be located to avoid noise impacts to sensitive receptors (schools, hospitals, residential areas, etc.), whenever possible.
N-2	**Use Proper Mufflers.** Proper mufflers shall be maintained on all internal combustion and vehicle engines used in construction and for O&M to reduce noise to the maximum feasible extent.
Cultural Resources	
C-1	**Unanticipated Discovery.** If during excavation, a site is discovered that may be affected by the Project, and the resources are not feasibly avoidable, Phase 2 archaeological testing shall be completed. The site's significance within the area of potential impact shall be assessed prior to continuation of excavation, pursuant to relevant cultural resource regulations and guidelines. A testing program and site evaluation shall be conducted in accordance with the applicable Federal, State, and local archaeological guidelines and shall address the questions contained in local guidelines and the State Historic Preservation Office (SHPO) checklists. Basic

Table 2-3. Environmental Commitments Included in Project Design

#	Description
	scientific data required for an evaluation of significance shall be obtained through test excavations designed to determine the following: • Vertical and horizontal extent of the deposit; • Structure of the deposit in terms of cultural stratigraphy, features, burials, etc.; • Density and diversity of artifacts and ecofacts in the deposit; • Nature and extent of previous disturbance; • Disturbance-related limitations of the data; • Research questions that may be addressed by analysis of the site; and • Age of site occupation or occupations. All excavated non-burial related artifacts and associated documentation shall be curated at a local facility meeting local, State, and Federal requirements and guidelines. A Programmatic Agreement shall be developed and signed by the Corps. The need for a qualified monitor to be present during construction shall be determined based on the results of the reconnaissance and focused surveys. In accordance with Section 7050.5 of the California Health and Safety Code and PRC Section 5097.98, if human remains are found: • The County Coroner shall be notified within 24 hours of the discovery; • The Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours if the remains are Native American; • The NAHC will immediately notify the Most Likely Descendent (MLD); and • The MLD shall complete their inspection within 48 hours of being granted access to the site.
C-2	**Cultural Resources Monitoring.** Part-time monitoring of the site during construction shall be performed by both a qualified Cultural Resources Specialist who meets the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61 (36 C.F.R., part 61), and a qualified Native American Cultural Resources Monitor during ground disturbing activities. If any cultural resources are identified at the construction site, work shall be temporarily halted until the resource is evaluated. If the resource cannot be feasibly avoided, an archaeological testing program and site evaluation shall be conducted (per EC C-1).
C-3	**Cultural Resources Worker Environmental Awareness Program (WEAP).** Prior to Project pre-construction and construction activities, WEAP training will be prepared by a Cultural Resources Specialist, reviewed and approved by the Corps and CVWD, and will be presented to workers by a qualified Cultural Resources Specialist (per EC C-2). All construction supervisors and crewmembers will be required to undergo archaeological WEAP training prior to commencement of ground-disturbing activities or prior to beginning work on the Project site.
Transportation	
T-1	**Implement Standard Construction Practices and Safety Precautions.** Standard construction practices and safety precautions shall be incorporated into the design of the Project to minimize temporary traffic impacts. Construction and maintenance staging areas shall be clearly marked and appropriately guarded to ensure public safety.
T-2	**Limit Large Vehicle Use, Lane Closures, and Road Damage.** The use of major transportation corridors by large (oversized) vehicles and equipment shall be limited to non-peak traffic hours. Haul routes shall be designed to minimize distances to the work site and avoid heavily congested areas or large residential communities. If lane closures are needed, only one lane of traffic shall be closed at a time, and nearby roads shall not be closed simultaneously. Roadways damaged from the use of heavy equipment shall be repaired and staging areas cleaned up.
Aesthetics	
V-1	**Design Consistent with Surroundings.** Project features shall be designed for consistency with the surrounding environment through selection of colors consistent with the surrounding surfaces and through planting of vegetation on levee slopes and in the surrounding Project area, to the extent feasible while maintaining Project function.
Public Safety	
P-1	**Design Channels with Fencing.** Where appropriate, the Corps and CVWD would fence channels to minimize danger of injury or death from fast moving water during storm events.

2.3 Project Alternatives

The alternatives evaluated in this EIR/EIS were identified by the CVWD in coordination with the Corps Regulatory Division. The CVWD is the CEQA lead agency and the Corps Regulatory Division is the NEPA lead agency for the Proposed Action. Three alternatives to the proposed Project (Alternative 1) have been carried forward for analysis in this EIR/EIS. These include Removal of Reach 2 (Alternative 2), Modified Reach 3 (Alternative 3), and the No Action Alternative (Alternative 4), each of which is described below. All of the ECs and mitigation measures identified for the proposed Project (Alternative 1) would also be implemented with the alternatives.

2.3.1 Removal of Reach 2 (Alternative 2)

Under this alternative Reach 2 would not be constructed. Reaches 1, 3, and 4 would be implemented as described for the proposed Project (Figure 2-8, Alternative 2 Alignment). Alternative 2 would directly permanently impact approximately 10.21 acres and 14,844 linear feet of waters of State and federal waters through the discharge of fill required to construct the levees and channels (a reduction of 0.41 acres and 2,318 linear feet compared to Alternative 1) (see Table 2-9). This alternative would temporarily impact approximately 4.48 acres and 3,109 linear feet of State and federal waters due to construction activities, including staging and storage (a reduction of 0.02 acre and 127 linear feet compared to Alternative 1). Approximately 18.15 acres and 78,258 linear feet of State and federal waters located below the levees would be impacted through a reduction of hydrology (an increase of 0.17 acres and 2,851 linear feet compared to Alternative 1).

2.3.1.1 Construction

Construction activities would be exactly as described in Section 2.2.2 for the proposed Project, except Reach 2 would not be constructed. The existing Mirage Substation would not receive flood protection other than an existing berm which currently protects the site. In the event of a 100-year flood event, with current levels of protection, the substation would become partially inundated (NHC, 2017). Residences to the southwest are not anticipated to be inundated during a 100-year flood event (NHC, 2017). However, removing this reach could increase potential flood risk to downstream areas and would not meet the purpose and need of the project.

2.3.1.2 Operation and Maintenance

O&M activities associated with Alternative 2 would be the same as described in Section 2.2.3 for the proposed Project, except that sand removal activities would not occur along Reach 2.

2.3.2 Modified Reach 3 (Alternative 3)

Under this alternative there are two possible alignments of Reach 3. Each would be adjusted so the upstream portion of the levee angles more to the west/southwest compared to the proposed Project (Figure 2-9, Alternative 3a and 3b Alignments). The purpose of the adjustment to Reach 3 is to reduce impacts to State and federal waters and to minimize potential adverse effects to the wind corridor and sand transport onto the Preserve/Refuge. Either modified alignment would direct flows within existing drainages towards the Preserve/Refuge rather than allowing them to flow towards the berm located between Ramon Road and I-10. These flows are currently disrupted and disperse along the berm adjacent to I-10. Reaches 1, 2, and 4 would be constructed as described for the proposed Project. The two options for this alternative are summarized below.

- **Option A.** This option would tilt Reach 3 approximately 6 to 10 degrees to the west/southwest away from the active wind corridor. As shown on Figure 2-8, this alignment would avoid several large ephemeral drainages (meaning that surface water is only present in direct response to a precipitation event) identified as waters of the U.S. Surface drainage patterns change throughout the year depending upon the number of and intensity of local storm events. As a result, drainage patterns may vary from year to year in a given location.

  In total, Option A would directly permanently impact approximately 5.72 acres and 16,818 linear feet of State and federal waters through the discharge of fill required to construct the levees and channels (a decrease of 4.9 acres and an increase of 344 linear feet compared to Alternative 1). This option would temporarily impact approximately 3.86 acres and 3,237 linear feet of State and federal waters due to construction activities, including staging and storage (a decrease of 0.64 acre and an increase of 1 linear foot compared to Alternative 1). Approximately 9.5 acres and 74,203 linear feet of State and federal waters located below the levees would be impacted through a reduction of hydrology (a reduction of 8.48 acres and 1,204 linear feet compared to Alternative 1).

  Option B. This option would tilt Reach 3 approximately 17 degrees to the west/southwest away from the active wind corridor. As shown on Figure 2-8, this alignment would avoid the ephemeral drainages described above for Option A, as well as additional ephemeral drainages located in the area.

  In total, Option B would directly permanently impact approximately 7.29 acres and 16,192 linear feet of waters of State and federal waters through the discharge of fill required to construct the levees and channels (a reduction of 3.33 acres and 970 linear feet compared to Alternative 1). This option would temporarily impact approximately 4.02 acres and 3,333 linear feet of State and federal waters due to construction activities, including staging and storage (a reduction of 0.48 acres and an increase of 97 linear feet compared to Alternative 1). Approximately 11.04 acres and 72,383 linear feet of State and federal waters located below the levees would be impacted through a reduction of hydrology (a reduction of 6.94 acres and 3,024 linear feet compared to Alternative 1).

  Modifications to Reach 3 were considered in an effort to reduce impacts to waters of the U.S. by avoiding several large ephemeral drainages that occur along the Reach 3 alignment. However, this alternative decreases the flood protection for the area and conflicts with the purpose and need of the project. Because of the shifting alluvial fans in the area it is difficult to predict flood flow paths with certainty. Reach 3, as well as the other project features, were designed to maximize the interception of flood flows while accommodating the dynamic nature of alluvial systems. For this alternative, the northwestern end of the Reach 3 levee would be lowered by 10 degrees to avoid impacts to ephemeral washes. However, by implementing this alternative the modified Reach 3 may not be able to intercept flows coming from Reaches 1 and 2 and flows that may travel westward near the downstream edges of the alluvial fans, across Vista de Oro, south of Ramon Road. Due to the anticipated shifting of coalescing alluvial fan flows and their unpredictable flow path, even a minor relocation of the end of Reach 3 south or east of its proposed location reduces the ability of the Reach 3 levee to effectively intercept flows toward Vista de Oro, which would result in potential flooding to the existing community and future planned developments protected by Reach 3. Any deviation in the Reach 3 proposed location would diminish the project's ability to achieve the Project objectives and presents a significant risk and liability to community. Reaches 1, 2, and 4 would be implemented as described for the proposed Project.

2.3.2.1 Construction

Construction activities would be exactly as described in Section 2.2.2 for the proposed Project, except the alignment of Reach 3 would be altered.

2.3.2.2 Operation and Maintenance

O&M activities associated with Alternative 3 would be the same as described in Section 2.2.3 for the proposed Project.

2.3.3 No Action (Alternative 4)

Under the No Action alternative, construction and operation of the Project would not occur and existing conditions related to flood hazard would continue to persist. Without the Project or additional flood protection, potentially catastrophic flooding would continue to threaten the Thousand Palms area, potentially resulting in the destruction of property and possibly loss of life. In the absence of the Project, new construction on properties in flood hazard areas would continue to be subject to flood-proofing requirements imposed by Riverside County. Due to the ongoing hazard, other flood protection strategies may be proposed in the future to address the area's flooding problem. Properties currently included in Federal Emergency Management Agency (FEMA) Flood Hazard Areas would continue to be included in such areas, and potentially required to purchase flood insurance.

2.3.3.1 Construction

No construction activities specific to a project would occur under this alternative; although clean-up activities would occur as a result of large storm events.

2.3.3.2 Operations and Maintenance

No O&M activities would occur under this alternative. Sand that accumulates on Avenue 38 would continue to be collected by the County and distributed in the wind corridor at existing locations.

2.4 Alternatives Considered but Eliminated from Analysis

This section describes alternatives that were considered but eliminated from further analysis. The rationale for elimination is provided under each of the alternatives. Some of these alternatives represent options that were considered in previous analyses (see Section 1.2) as well as options considered specifically for this EIR/EIS.

2.4.1 Previously Approved Project

As described in Section 1.2 (Previous Studies and Scope of Analysis), the 2000 Final EIS/EIR prepared by the Corps (Los Angeles District Planning Division) identified Alternative 6 as the Preferred Alternative. For the purposes of this EIR/EIS, Alternative 6 is referred to as the Previously Approved Project. The current proposed Project is a revised version of the Previously Approved Project which includes structural changes and a shift in the alignment of some Project features to account for baseline conditions. In addition, the current proposed Project (and other alternatives carried forward for detailed analysis in the EIR/EIS) has eliminated temporary disturbance areas on the upstream side of Project features in order to minimize potential effects on the Preserve/Refuge and waters of the U.S.

The Previously Approved Project consists of levees with no channels (see Figure 1-4). Levees 2 through 4 would be set back approximately 500 feet from the boundary of the Preserve to assure 100-year flows are not increased on the Preserve and that scour (i.e., removal of sediment caused by swift-moving water) is not induced on the Preserve as a result of the levee (USACE, 2000). In comparison, Reaches 3 and 4 of the proposed Project define portions of the Preserve boundary, as provided in the current MSHCP which was approved and permitted in 2008. The Previously Approved Project is summarized below.

- **Levee 1.** This levee**,** referred to in the 2000 document as the "Transmission Corridor Levee", would be located within an existing SCE utility corridor, specifically along the Devers-Palo Verde 500-kV No. 2 (DPV2) Transmission Line Project right-of-way. Levee 1 would initiate near the junction of Rio Del Sol Road and 28th Avenue and terminate east of Via Las Palmas.
- **Levee 2.** This levee, referred to in the 2000 document as a "Wind Corridor Levee", would have the same alignment as Reach 2 of the proposed Project.
- **Levee 3.** This levee, also referred to in the 2000 document as a "Wind Corridor Levee", would begin approximately 2,000 feet south of Levee 2 and runs along the south side of the wind corridor to the western and southwestern boundary of the Preserve. In comparison with Reach 3 of the proposed Project, this levee would continue through the Classic Club Golf Course. Levee 3 would also traverse a larger portion of Xavier High School than would Reach 3 of the proposed Project. When the 2000 Final EIS/EIR was prepared neither the golf course or the high school had been constructed. Levee 3 also did not transition into a channel, as it would under the proposed Project.
- **Levee 4.** This levee, referred to in the 2000 document as the "Cook Street Levee", would run along the north side of I-10 and across the southern boundary of the Preserve. The levee for the proposed Project would be located north of the Cook Street Levee slightly below Avenue 38.

2.4.1.1 Rationale for Elimination

The Previously Approved Project was eliminated from detailed consideration in this EIR/EIS due to land use conflicts associated with changes in baseline conditions between publishing of the 2000 Final EIS/EIR and preparation of this EIR/EIS. Specifically, the Xavier High School and the Classic Club Golf Course had not been constructed as of 2000. The original alignment of the Previously Approved Project would result in direct impacts to Xavier High School and the Classic Club Golf Course. This would require the acquisition of a substantial portion of both properties and the golf course would no longer support recreation. In addition, the alignment of Levee 1 would overlay a designated SCE utility corridor supporting existing gas and transmission lines. Construction of the Previously Approved Project would result in substantial impacts to the local community and disrupt existing land uses.

2.4.2 Complete Channelization Alternative

The 2000 EIR/EIS assessed a Complete Channelization Alternative which was also evaluated in the 1999 Feasibility Study (see Figure 2-10, Complete Channelization Alternative). This alternative included an extensive network of channels supplemented with levees to direct surface runoff from the Long Canyon area (north-northwest of the proposed Project facilities) through the existing Del Webb / Sun City development (east of the proposed Project facilities) into the Coachella Canal siphon near Madison Street (south-southeast of the terminus of proposed Project facilities at Washington Street). Downstream of the Del Webb / Sun City development flows would be guided to the existing Coachella Canal siphon by a 2.5 mile, 7-foot tall levee. At the siphon crossing, flows would enter the Thousand Palms Wash channel which converges with the Whitewater River downstream of I-10. The walls and existing levees surrounding the siphon would be raised from 8 to 10 feet in height to accommodate increased flows. Major components of this alternative include more than 20 miles of channels, drop structures along several reaches of the main channel and at the channel inlets, in-channel sediment management basins, and levees parallel to the channel along the Preserve to minimize sedimentation (USACE, 2000).

This alternative was originally developed when less development existed in the Project area. Under current conditions this alternative would conflict with numerous land uses, including but not limited to

residential, commercial/industrial, recreational developments, as well as existing roadways and utility corridors (See Tables 2-4 and 2-5).

Table 2-4. Complete Channelization Alternative Land Use Impacts

Street[1]	Closest Cross Street	Use	Description	Impact Type[2]	Access Restriction[3]
Mihalyo Road	Varner Road	Residential	Private Residence	Direct	No
Varner Road	Date Palm Drive	Transmission Line	Devers-Mirage Transmission Line	Indirect	Yes
Varner Road	Date Palm Drive	Industrial	Valley-Colorado River	Indirect	Yes
Rio Del Sol	28th Avenue	Commercial	CalPortland Ready mix Concrete	Direct	Yes
Sierra Del Sol	Rio Del Sol	Commercial	Skanska Asphalt and Concrete Recycling Center	Indirect	Yes
Via Las Palmas	30th Avenue	Residential	Private Residence	Direct	No
Via Las Palmas	30th Avenue	Residential	Private Residence	Direct	Yes
Via Las Palmas	30th Avenue	Residential	Private Residence	Direct	Yes
Via Las Palmas	30th Avenue	Residential	Private Residence	Direct	Yes
Via Las Palmas	30th Avenue	Residential	Private Residence	Direct	Yes
E Ramon Road	Tchoupitoulas Lane	Residential	Private Residence	Direct	Yes
Chimayo Road	E Ramon Road	Residential	Private Residence	Direct	Yes
E Ramon Road	Shadow Mountain Lane	Commercial	Commercial Nursery, C & M Growers	Direct	Yes
E Ramon Road	Shadow Mountain Lane	Church	Desert Assembly of God	Direct	No
Shadow Mountain Lane	E Ramon Road	Residential	Private Residence	Direct	Yes
Shadow Mountain Lane	E Ramon Road	Residential	Private Residence	Direct	Yes
Pegasus Court	Chase School Road	Commercial	Pegasus Riding Academy	Direct	Yes
Classic Club Blvd	Varner Road	Commercial	Classic Club Golf Course	Direct	Yes

Notes:
1 - Unmarked dirt roads were not included in this analysis.
2 - Direct impacts are identified as those where the alignment would overlie the identified land use, while indirect impacts are identified as those where the alignment is adjacent to the identified land use.
3 - Access restrictions are identified where access to all or a portion of identified land uses would be removed by the alignment.

Table 2-5. Complete Channelization Road Impacts			
Street	**Closest Cross Street**	**Lanes**	**Surface**
Mihalyo Road	Varner Road	2	Dirt
Palm Drive	I-10	6	Paved
Date Palm Drive	I-10	2	Paved
Varner Road		2	Paved
Varner Road		2	Paved
Rio Del Sol	28th Avenue	2	Paved
Sierra Del Sol		2	Dirt
Desert Moon Drive		2	Dirt
Via Las Palmas		2	Paved
E Ramon Road		2	Paved
Chase School Road	Pegasus Court	2	Paved
Chimayo Road	E Ramon Road	2	Paved
Tchoupitoulas Lane	E Ramon Road	2	Paved

As described in Section 2.2 for the proposed Project, roads that would be traversed by a levee or channel would either be terminated at the crossing or spanned by installing road crossings similar to those identified for the proposed Project.

2.4.2.1 Rationale for Elimination

The Complete Channelization Alternative was eliminated from analysis in this EIR/EIS due to extensive land use conflicts associated with the type and amount of property that would need to be acquired to construct the channels and levees. This alternative would include more than 20 miles of channels, more than twice as much as the proposed Project. When this alternative was analyzed in the 2000 EIR/EIS there was less development in the region. Since the publication of the 2000 EIR/EIS, development has expanded in the Project area and construction of this alternative would require the acquisition and removal of extensive residential and commercial developments, including portions of the existing Del Webb / Sun City development. ımplementation of this alternative would also result in the loss of habitat in the Preserve/Refuge.

In addition, this alternative would conflict with the Purpose and Need of the Project, which is to provide flood protection while facilitating the transport of sand onto the Preserve/Reserve. The design of this alternative would adversely affect the wind corridor by trapping and funneling material away from the Preserve/Reserve.

Due to these land use conflicts, unacceptable significant impacts, and the lack of benefits to the Preserve/Reserve, this alternative was removed from further consideration in this EIR/EIS.

2.4.3 I-10 Channel Alternative

The 2000 EIR/EIS assessed an I-10 Channel Alternative which was also evaluated in the 1999 Feasibility Study (see Figure 2-11, I-10 Channelization Alternative). Under this alternative, the Project would be configured as one long channel (main channel) and three shorter channels (collector channels). The main channel would be approximately 25 miles in length and would be located adjacent and north of I-10. The channel would initiate at the mouth of Long Canyon, approximately 8 miles north-northwest of the upstream end of Reach 1 under the proposed Project and continue along I-10 past the Indio Hills

eventually discharging storm flows onto the Preserve/Refuge. Collector channels, which have not been subject to engineering design, would direct storm flows from the Indio Hills into the main channel.

Similar to the information provided for the Complete Channelization Alternative, the I-10 Channel Alternative would traverse a variety of existing land uses including residential properties, existing roadways, commercial and industrial developments, and recreational and natural lands. Tables 2-6 and 2-7 provides an overview of land uses that would be affected by the alignment of the I-10 Channel Alternative.

Table 2-6. I-10 Channel Alternative Land Use Impacts

Street	Closest Cross Street	Use	Description	Impact Type	Access Restriction
Heartland Way	Long Canyon Road	Residential	Private Residence	Indirect	Yes
Opperman Road	Long Canyon Road	Residential	Private Residence	Indirect	Yes
Ingalls	Rancho Road	Residence	Private Residence	Direct	No
Rancho Road	18th Avenue	Residence	Private Residence	Direct	No
Long Canyon Road	20th Avenue	Residence	2 Private Residences and a Commercial Facility	Direct	Yes
Moon Ranch Road	Edom Hill Road	Commercial	Wind Farm with 5 Turbines	Direct	Yes
Date Palm Drive	Varner Road	Commercial	Devers-Mirage Transmission Line	Direct	Yes
Varner Road	Manufacturing Road	Commercial	Parkhouse Tire Facility	Direct	Yes
Varner Road	Manufacturing Road	Commercial	Arturos Polishing Facility	Direct	Yes
Varner Road	Manufacturing Road	Commercial	Red Roof Inn Palm Springs	Indirect	Yes
Varner Road	Ramon Road	Commercial	Natural Materials Yard	Direct	Yes
Varner Road	Ramon Road	Commercial	Joels Bicycle Shop	Direct	No
Varner Road	Ramon Road	Commercial	Dennys	Indirect	Yes
Varner Road	Ramon Road	Commercial	Taqueria Guerrero	Indirect	Yes
Ramon Road	Date Garden Drive	Commercial	Valero Corner Store	Direct	Yes
Varner Road	Ramon Road	Commercial	Superior Ready-Mix Yard	Direct	Yes
Harry Oliver Rail	Varner Road	Commercial	Sepulveda Building Materials Yard	Direct	Yes
Monterey Ave	Broadmoor Drive	Commercial	Substation	Direct	Yes
Westchester Drive	Broadmoor Drive	Residence	40 homes	Direct	Yes
Westchester Drive	Broadmoor Drive	Residential	118 homes	Indirect	Yes
Desert Moon Drive	Broadmoor Drive	Commercial / Recreation	Tri-Palms Country Club Golf Course	Indirect	Yes
Stag Line Drive	Jack Ivey Drive	Residence	15 homes	Direct	No
Stag Line Drive	Jack Ivey Drive	Residence	80 homes	Indirect	Yes
Varner Road	Jack Ivey Drive	Commercial / Recreation	Ivey Ranch Country Club	Direct	Yes
Classic Club Blvd	Varner Road	Commercial / Recreation	Classic Club Gold Course	Direct	Yes

Table 2-6. I-10 Channel Alternative Land Use Impacts

Street	Closest Cross Street	Use	Description	Impact Type	Access Restriction
Varner Road	Leopard Street	Residence / Recreation	Thousand Trails RV Resort	Direct	Yes
Leopard Street	Wolf Road	Commercial	Luxe Electric Golf Carts	Direct	No
Varner Road	Leopard Street	Commercial	Security Public Storage	Direct	Yes
Varner Road	Washington Street	Commercial	Motel 6	Indirect	Yes
Washington Street	Varner Road	Commercial	Comfort Suites	Direct	No
Varner Road	Washington Street	Commercial	Legends and Icons Dining	Direct	Yes
Varner Road	Washington Street	Commercial	Marios Italian Café	Direct	Yes
Varner Road	I-10	Commercial	AM/PM Gasoline	Direct	Yes
Washington Street	Varner Road	Commercial	8-unit commercial structure	Direct	No
Varner Road	Desert Cities Drive	Commercial	Santanas Mexican Food	Direct	No
Varner Road	Desert Cities Drive	Commercial	Coco's Bakery	Direct	No
Newcastle Drive	Varner Road	Residential	30 Homes	Direct	No
Newcastle Drive	Varner Road	Residential	10 homes	Indirect	Yes
Varner Road	Ave 40	Commercial	Unicars Honda	Indirect	Yes
Varner Road	Ave 40	Commercial	I-10 Toyota Scion	Direct	Yes
Varner Road	Ave 40	Commercial	Fiesta Ford	Direct	Yes
Varner Road	Ave 40	Commercial	Coachella Valley Volkswagen	Indirect	Yes
40th Place	Myoma Street	Commercial	Cell Phone Tower	Direct	No
40th Place	Myoma Street	Residential	Private Residence	Indirect	No
Varner Road	Sabrina Court	Residential	Sunnyside RV Park	Direct	Yes
Calle Santa Sofia	Avenida Camarillo	Residential	5 homes	Direct	No
Avenue 42	Madison Street	Industrial	Coachella Canal	Direct	No
Showcase Parkway	Spectrum Street	Commercial	2 Commercial Buildings	Direct	No
Atlantic Avenue	Aegean Street	Commercial	JB Finish Carpentry	Direct	No
Aegean Street	Atlantic Avenue	Commercial	Air and Hose Source Inc.	Direct	No
Atlantic Avenue	Marmara Street	Commercial	Commercial Structure	Direct	No
Atlantic Avenue	Marmara Street	Commercial	Target	Direct	Yes
Jackson Street	Jackson Street	Commercial	Panda Express	Direct	No
Jackson Street	Atlantic Avenue	Commercial	24-Hour Fitness	Indirect	Yes
Jackson Street	Atlantic Avenue	Commercial	KFC	Indirect	Yes
Jackson Street	Atlantic Avenue	Commercial	Taco Bell	Indirect	Yes
Jackson Street	Atlantic Avenue	Commercial	Winco Foods	Direct	Yes
Toltec Court	Hopi Avenue	Residential	21 homes	Direct	No
Toltec Court	Hopi Avenue	Residential	105 homes	Indirect	Yes
Indian Springs Drive	Lakeview Drive	Commercial	Parking Lot for Fantasy Springs Casino	Direct	Yes

Table 2-6. I-10 Channel Alternative Land Use Impacts

Street	Closest Cross Street	Use	Description	Impact Type	Access Restriction
Basin Street	Sunset Blvd	Residential	7 homes	Direct	Yes
Indio Springs Drive	Vista Del Norte	Commercial / Recreation	Fantasy Springs Casino	Direct	Yes
Vista Del Norte		Commercial	Two Commercial Buildings	Direct	Yes
Vista Del Norte		Industrial	Wasteway Number 3	Direct	No
Indio Springs Drive	Vista Del Norte	Commercial / Recreation	Eagle Falls Gold Course	Direct	Yes

Table 2-7. I-10 Channel Alternative Roadway Crossings

Street	Closest Cross Street	Lanes	Surface
Hacienda Road	Starlight Way	2	Paved
Heartland Way	Long Canyon Road	1	Private
Opperman Road	Long Canyon Road	2	Paved
Glory View	Long Canyon Road	2	Dirt
Dillon Road	Rancho Road	2	Paved
Cat Claw Road	Rancho Road	1	Dirt
18th Avenue	Rancho Road	1	Dirt
20th Avenue	Long Canyon Road	2	Paved
21st Avenue	Long Canyon Road	1	Dirt
Moon Ranch Road	Long Canyon Road	1	Dirt
Edom Hill Road	Varner Road	2	Paved
Varner Road	Date Palm Drive	2	Paved
Rio Del Sol Road	Varner Road	6	Paved
Varner Road	Manufacturing Road	4	Paved
Date Garden Drive	E Ramon Road	2	Paved
E Ramon Road	Shelter Drive	5	Paved
Harry Oliver Trail	Varner Road	2	Paved
Monterey Ave	Broadmoor Drive	4	Paved
Westchester Drive	Broadmoor Drive	2	Paved
Deane Court	Westchester Drive	2	Paved
Laredo Circle	Westchester Drive	2	Paved
Tubac Trail	Westchester Drive	2	Paved
San Lucas Trail	Westchester Drive	2	Paved
Barcelona Drive	Westchester Drive	2	Paved
Boca Chica Trail	Barcelona Drive	2	Paved
Jack Ivey Drive	Stage Line Drive	2	Paved
Bandana Road	Clear Well Road	2	Paved
Sand Rock Road	S Border	2	Paved
Canteen	S Border	2	Paved
Mexico Way	S Border	2	Paved
Varner Road	Cook Street	3	Paved
Cook Street	Varner Road	6	Paved
Varner Road	Shadow Valley Drive	4	Paved
Classic Club Blvd		4	Paved
Avenue 38	Varner Road	2	Paved
Leopard Street	Wolf Road	2	Paved
Berkley Drive	Varner Road	4	Paved
Washington Street	Varner Road	8	Paved
Varner Road		7	Paved

Table 2-7. I-10 Channel Alternative Roadway Crossings

Street	Closest Cross Street	Lanes	Surface
Varner Road		5	Paved
Kent Drive	Cardington Way	2	Paved
Newcastle	Glastonbury Way	4	Paved
Dorset Drive	Rockwell Circle	2	Paved
Avenue 40		2	Paved
Adams Street	Avenue 40	4	Paved
Varner Road	Jefferson Street	4	Paved
Jefferson Street	Varner Road	2	Paved
Varner Road		2	Paved
Calle Santa Sofia	Avenida Camarillo	2	Paved
Avenida Los Padres	Calle Santa Sofia	2	Paved
Avenue 42		2	Paved
Madison Street	Avenue 42	2	Dirt
Monroe Street	Avenue 42	5	Paved
Spectrum Street	Showcase Parkway	2	Paved
Caspian Street	Atlantic Avenue	2	Paved
Aegean Street	Atlantic Avenue	2	Paved
Marmara Street	Atlantic Avenue	2	Paved
Jackson Street	Pacific Indio Blvd	5	Paved
Cowboy Court	Saddle Ranch Road	2	Paved
White Stallion Road	Cowboy Court	2	Paved
Avenue 43	Calhoun Street	2	Paved
Hopi Avenue	Navajo Street	2	Paved
Manzanita Avenue	Apache Street	2	Paved
Apache Street	Manzanita Avenue	2	Paved
Comanche Street	Manzanita Avenue	2	Paved
Aztec Street	Mesquite Drive	2	Paved
Avenue 44	Aztec Street	2	Paved
Golf Center Parkway	Indio Springs Drive	4	Paved
Indio Springs Drive	Golf Center Parkway	2	Paved
Lakeview Drive	Fantasy Lane	2	Paved
Basin Street	Sunset Blvd	2	Paved
Sunset Blvd	Sunrise Avenue	2	Paved
Sunset Strip	Sunrise Avenue	2	Paved
Indio Springs Drive	Fantasy Springs	2	Paved
Vista Del Norte	Indio Springs Drive	2	Paved

2.4.3.1 Rationale for Elimination

The I-10 Channel Alternative was eliminated from analysis in this EIR/EIS due to extensive land use conflicts associated with the type and amount of property that would need to be acquired to construct the channels and levees. For example, some of the frontage properties located in the development footprint are residential properties, including all the homes located on Westchester Drive in Thousand Palms. Several developments would be bisected by this alternative, resulting in split communities along with lost homes. This alternative would also result in severe impacts to commercial properties as the alignment would cross numerous commercial developments.

In addition, this alternative would conflict with the Purpose and Need of the Project, which is to provide flood protection while facilitating the transport of blow sand onto the Preserve/Reserve. The discharge point on the Preserve boundary is located too far south to provide any benefit to sensitive habitat as fluvially-transported sand that would otherwise be deposited on the Preserve/Refuge would be directed to stormwater conveyance systems south/southeast of the CVFTL habitat areas. The design of this

alternative would also adversely affect the wind corridor by trapping and funneling material away from the Preserve/Reserve. This alternative would substantially increase direct and indirect impacts to waters of the U.S. by altering hydrology across the alluvial fan and disrupting natural stream function.

Due to these land use conflicts and the lack of benefits to the Preserve/Reserve, construction of the I-10 Channel Alternative would result in unacceptable significant impacts and was removed from consideration in this EIR/EIS.

2.4.4 Detention Basins Alternative

The Detention Basins Alternative would include a series of eight stormwater/sediment detention basins, located at the mouth of the Indio Hills canyons, designed to capture and attenuate storm flows. The detention basins would allow for a substantially lower outflow discharge and reduce the necessary size of downstream flood control facilities. Each detention basin would be approximately 3- to 24-acres in size with a total storage volume ranging from 28 to 261 acre-feet. Most of the basins would include below-ground storage to avoid qualifying as a State of California dam. All basins would be designed to drain within approximately one day following a storm event (USACE, 2000).

The Detention Basins Alternative would include a network of channels to convey stormwater flows through the Del Webb / Sun City area to the existing Coachella Canal siphon. These channels would be similar in scope and design as described in the Complete Channelization Alternative and the I-10 Channel Alternative. Flows from this area are directed into the Thousand Palms Wash channel eventually joining the Whitewater River downstream of I-10.

2.4.4.1 Rationale for Elimination

The Detention Basins Alternative was eliminated from analysis in this EIR/EIS for the same rationale presented for the Complete Channelization Alternative and the I-10 Channel Alternative. Primarily that land use disruptions and local roadway interferences would be substantial and adverse, and would result in unacceptable impacts to the local community. In addition, this alternative would not achieve the Purpose and Need of the Project, which is to provide flood protection while facilitating the transport of blow sand onto the Preserve/Reserve.

The basins would also result in substantial disruption to the hydrology and sediment transport processes that occur in upstream areas of the alluvial fans. This would substantially alter the services and functions of the washes and result in adverse effects to a variety of native plant and animal species. The basins would substantially alter the movement of blow sand to the Preserve/Refuge by trapping sediment in locations outside the active wind corridor. The detention basins would substantially disrupt natural stream processes to downstream areas, substantially increasing the loss to State and Federal Waters. Although the channels would be smaller under the Detention Basins Alternative, land use conflicts would still be substantial. In addition, the detention basins would require extensive operations and maintenance efforts to ensure that sediment does not collect in the basins and compromise their flood control capacity.

2.4.5 Reach 1 South of Utility Corridor Alternative

Under this alternative the Reach 1 levee would be located south of the existing SCE utility corridor compared to the northern location for the proposed Project. In order to avoid flooding of the utility corridor during and following a storm event, the levee would be situated approximately 1,000 feet south of the utility corridor). The distance between Reach 1 and the utility corridor varies from approximately 700 feet to approximately 2,000 feet south of the corridor depending on the location. All other features of this alternative would be the same as described for the proposed Project. Implementation of this

alternative would minimize impacts to sand migration by moving the levee farther away from the active wind corridor and reduce impacts to jurisdictional waters of the U.S.

This alternative would avoid the loss of approximately five or six properties located north of the utility corridor, which would occur under the proposed Project. However, this alignment would require the acquisition of all or parts of approximately 58 properties, 28 of which are residential, that occur south of the utility corridor to account for the levee's permanent footprint and the new flood zone located along the face of the levee. The 28 residential properties to be acquired for this alternative have an estimated land value of approximately $1,686,022. The 30 non-residential properties have an estimated land value of approximately $8,912,662. In total, the combined estimated land value associated with properties to be acquired in part or in full to accommodate the revised alignment of Reach 1 is approximately $10,598,684. It is important to note that this estimate may not reflect the value of certain improvements implemented on the properties and would be expected to change with current market values in the region. Property values were estimated by comparing the Project footprint with the county assessor's office assessed values for the land. Any structures on the land were considered based on current market values of homes and properties in the region. As described in Section 2.2.1, the proposed Project alignment of Reach 1 would affect five residential properties (approximately $227,816 in combined land value) and 32 non-residential properties (approximately $1,531,726 in combined land value), for a total of 37 properties with combined land value of $1,759,542.

This alternative would affect 21 more properties and displace more people than the proposed Project's Reach 1 alignment. In addition, this would increase the cost of land acquisition by approximately $8,839,142.

2.4.5.1 Rationale for Elimination

The Reach 1 South of Utility Corridor Alternative would require the acquisition and conversion of approximately 58 existing private properties, 28 of which are residential homes. Construction of the levee in this location would result in substantially greater impacts to sensitive receptors from noise, traffic congestion, exposure to fugitive dust, and disproportionally effect minority communities. Due to these substantial conflicts with existing land uses compared to the proposed Project, this alternative was eliminated from further analysis in this EIR/EIS.

2.4.6 Continuous Reach 1 Alternative

Under the Continuous Reach 1 Alternative, Reaches 1 and 2 (referred to as Reach 1a) would consist of one continuous levee. Reach 1a would be designed as described for Reach 1 of the proposed Project, except that the levee's downstream end would turn to the south to protect the existing Mirage Substation. All other components of this alternative would be the same as described for the proposed Project.

2.4.6.1 Rationale for Elimination

In this alternative the Reach 1a levee would traverse the existing SCE utility corridor, a high-pressure gas line, and a fiber optic line. Construction of this alternative would require re-alignment of the natural gas line, fiber optic cables, and modification to the existing transmission lines. In addition, connecting Reaches 1 and 2 would create a substantial barrier that would disrupt the wind corridor and the distribution of wind-blown sand to the Preserve/Refuge. This would cause a larger disruption to aeolian processes and sand reaching the Preserve/Refuge compared to the proposed Project. However, this alternative would reduce impacts to several drainages at the end of Reach 1 of the proposed Project. Due to the substantial impacts to aeolian transport and the disruption of local utilities compared to the proposed Project, this alternative was eliminated from further consideration in this EIR/EIS.

2.4.7 Straight Reach 3 Alternative

Under this alternative Reach 3 would be configured in a straight alignment through what is now the Xavier High School and the Classic Club Golf Course. Similar to the proposed Project, Reach 3 would consist of both a levee and an excavated channel. The upstream portion of Reach 3 would consist of a levee approximately 1.23-miles long varying in height from 14 to 18 feet. The downstream portion of Reach 3 would consist of a 1.01-mile long trapezoidal channel with a bottom width of 90 feet and a depth ranging from 14 to 18 feet. A 5-foot high levee would run along the west side of the excavated channel to protect the area to the west from flooding. The freeboard levee also allows for the collection of the excavated channel material. Reaches 1, 2, and 4 of this alternative would be the same as described for the proposed Project.

This alternative would require the removal or modification to existing developments on the Xavier High School property and the Classic Club Golf. Most of the high school's existing athletic facilities, including the football stadium, would need to be removed. Most of the Classic Club Golf Course would also need to be removed. Although Reach 3 does not extend all the way down to the bottom of what is now the Classic Club Golf Course, this alternative would likely render the golf course unusable. Based on construction requirements it is plausible that the entire golf course and associated facilities would need to be removed to facilitate development of this alternative. In addition, residential developments adjacent to and north of the golf course would need to be removed under this alternative.

O&M activities associated with the Straight Reach 3 Alternative would be the same as described for the proposed Project, except sand removal activities along the Reach 3 portion of this alternative would not be required as frequently when compared to the proposed Project. The straight alignment of Reach 3 would further reduce impacts to the wind corridor.

2.4.7.1 Rationale for Elimination

The Straight Reach 3 Alternative would require the acquisition of lands associated with the Xavier High School athletic facilities, residential properties, and the conversion of the Classic Club Golf Course property from its existing recreational uses to a flood control system. Construction of the levee in this location would result in substantially greater impacts to sensitive receptors from noise, traffic congestion, exposure to fugitive dust, and disproportionally effect minority communities, and recreationists. Due to these substantial land use conflicts, this alternative was eliminated from further consideration in this EIR/EIS.

2.4.8 Reach 3 With Debris Basin

This alternative was suggested during scoping by Stantec on behalf of the H.N. and Frances C. Berger Foundation to reduce land acquisitions of both public use and educational properties, as well as to reduce conveyance of sediment and debris on to the Classic Club Golf Course (see Appendix A, Public Scoping – Figure 1). The proposed alignment for Reach 3, specifically the channel portion, would be pushed farther east of three currently vacant properties (APNs 694-050-007, 695-070-011, 695-070-015), as well as the Xavier College Preparatory High School and the Pegasus Riding Academy. Additionally, a debris basin would be added immediately north of the tie-in with the Classic Club Golf Course. All other features of this alternative would be the same as described for the proposed Project.

2.4.8.1 Rationale for Elimination

This alternative would avoid direct loss of the athletic fields at Xavier College Preparatory High School and potentially the loss of the Pegasus Riding Academy; however, depending on the size and exact location of

the debris basin, the Pegasus Riding Academy could continue to be impacted, if not more so than the proposed Project. Moving Reach 3 farther west would place it on the Preserve/Refuge, which would conflict with the CVMSHCP. Per the Project objectives, Reach 3 is intended to better define portions of the Preserve boundary, not redefine and reduce the Preserve lands. This alternative would also result in greater disruption of aeolian transport (sand migration) and associated biological resources impacts to sensitive wildlife, including the Coachella Valley fringe-toed lizard (federally listed, threatened; State listed endangered), Coachella Valley milk vetch (federally listed, threatened; rare and endangered in California - fairly), among other sand-dependent special-status species. The Classic Club Golf Course was designed to accept the flood flows of the Project, including associated debris; a flood easement agreement with CVWD was previously established prior to construction of the golf course (see Section 1.2, Project History and Previous Studies). As such, the debris basin, is not necessary, other than to minimize cleanup activities within the golf course.

Furthermore, the size of the debris basin with consideration of the quantity of flood flow and debris is likely inadequate to prevent much of any reduction in the amount of material passed downstream during a significant flood event. A study completed in 2013 by Parsons Brinkerhoff (2013) considered sediment removal facilities to determine their locations and effectiveness. Modeling was completed with two trial sediment basin sizes, which were assumed to be enlargements of the Reach 3 Channel, with the following modifications: (1) a weir at the point Reach 3 connects to the Classic Club Golf Course with a crest elevation of 165 feet, (2) flattened slope of the Reach 3 Channel from approximately 0.003 ft/ft to 0.001 ft/ft, and (3) widened channel invert from 86 feet to 172 feet (Trial 1) and 258 feet (Trial 2). The Trial 1 and Trial 2 sediment basins were estimated to remove approximately 16 acre-feet of sediment (46%) and 19.2 acre-feet of sediment (55%), respectively (PB, 2013). The basin would have to get substantially larger to approach 100 percent removal. The substantial increase in cost for widening the Reach 3 Channel, as well the additional biological resources and large-scale land use impacts associated with doubling or tripling the width of the channel, eliminated consideration of implementing this strategy for sediment control.

2.4.9 Reach 3 Paralleling Classic Club Golf Course

This alternative was suggested during scoping by Stantec on behalf of the H.N. and Frances C. Berger Foundation to reduce land acquisitions of both public use and educational properties, as well as to reduce conveyance of flood flows on to the Classic Club Golf Course (see Appendix A, Public Scoping – Figure 2). The proposed alignment for Reach 3, specifically the channel portion, would be pushed farther east of three currently vacant properties (APNs 694-050-007, 695-070-011, 695-070-015), as well as the Xavier College Preparatory High School and the Pegasus Riding Academy. Reach 3 would then parallel the Classic Club Golf Course rather than tying into the existing stormwater conveyance system located within the Classic Club Golf Course. All other features of this alternative would be the same as described for the proposed Project.

2.4.9.1 Rationale for Elimination

This alternative would avoid direct loss of the athletic fields at Xavier College Preparatory High School and potentially the loss of the Pegasus Riding Academy. Moving Reach 3 farther west would place it on the Preserve/Refuge, which would conflict with the CVMSHCP. Per the Project objectives, Reach 3 is intended to better define portions of the Preserve boundary, not redefine and reduce the Preserve lands. This alternative would also result in greater disruption of aeolian transport (sand migration) and associated biological resources impacts to sensitive wildlife, including the Coachella Valley fringe-toed lizard (federally listed, threatened; State listed endangered), Coachella Valley milk vetch (federally listed, threatened; rare and endangered in California - fairly), among other sand-dependent special-status

species. The Classic Club Golf Course was designed to accept the flood flows of the Project, including associated debris; a flood easement agreement with CVWD was previously established prior to construction of the golf course (see Section 1.2, Project History and Previous Studies). Due to the substantial biological resources impacts and minimal improvement in land use impacts, this alternative was eliminated from further consideration in this EIR/EIS.

2.4.10 Reach 3 West of Xavier High School Alternative

This alternative would place Reach 3 to the west of the Xavier High School. All other features of this alternative would be the same as described for the proposed Project.

2.4.10.1 Rationale for Elimination

This alternative reduces the disruption of aeolian transport onto the Preserve/Refuge and would avoid the direct loss of the athletic fields at Xavier High School. This alternative would not reduce the flood risk or provide flood protection to the high school or adjacent properties. In addition, construction of the levee in this location would be adjacent to residential properties and result in substantially greater impacts to sensitive receptors from noise, traffic congestion, and exposure to fugitive dust. Due to these substantial land use conflicts, this alternative was eliminated from further consideration in this EIR/EIS.

2.4.11 Reach 1 Culverts Alternative

This alternative would include the installation of bottomless culverts in the Reach 1 levee to allow the passage of water during small storm events. The purpose of using culverts under the Reach 1 levee would be to allow low and medium flows to pass under Reach 1 to maintain some elements of natural hydrology and sediment transport to the channels while still providing flood protection to the community of Thousand Palms under heavy flow conditions. All other aspects of this alternative would be the same as described for the proposed Project.

2.4.11.1 Rationale for Elimination

The placement of bottomless culverts on the Reach 1 levee would compromise the integrity of the structure and would conflict with the FEMA and Corps guidelines for levee construction. The placement of culverts would require design changes to the levee to accommodate bypass flows and ensure flood protection during large storm events. However, culverts in Reach 1 would be prone to failure due to the large sediment loads that are known from the watershed. Alternatively, they would need to be sized to allow clean out and the passage of sediment. Sizing these culverts to accommodate sediment and water would diminish the flood control capacity of the levee during large storm events. While it may be possible to install a gate to control the flow, crews may not be available to close the gates in time to react to a large storm event. Flash floods associated with seasonal thunderstorms occur so quickly that adequate warning time to close the flood gates may not be possible. Although the placement of culverts in the levee would maintain connectivity to drainages below the levees, it is still likely that many drainages would remain isolated from their historic conditions. In addition, water would be forced through discrete areas forming new drainages that may compromise flood protection. Because culverts would diminish flood protection, this alternative was eliminated from further consideration in this EIR/EIS.

2.4.12 Non-Structural Alternative

This alternative would consist of a flood warning system of alarms and/or announcements that would be broadcasted in the Project area. The system would provide information to local residents of an impending flood and the need to evacuate the area.

2.4.12.1 Rationale for Elimination

Flood warning systems were eliminated from further consideration as a viable flood control project because flash floods associated with seasonal thunderstorms occur so quickly that adequate warning time is not available for residents to evacuate from the floodway in time to avoid the hazard. In addition, some people may not hear or respond to the warnings and would be at risk from flood waters and debris flows.

This alternative would not meet the CEQA Project Objectives or the NEPA Purpose/Need of providing flood hazard protection to existing properties and structures, and existing properties and structures would continue to be subject to flood hazards. Additionally, this alternative would not facilitate sand migration and blowsand habitat replenishment on the Preserve/Refuge. Under current conditions, sediment and blow sand is washed into developed areas and is no longer available in the wind corridor. In comparison, the proposed Project and some of the alternatives which are considered in this EIR/EIS, would trap sediment, including windblown sand, and this material may replenish sand dune habitat on the Preserve/Refuge.

2.5 Comparison of Alternatives

Table 2-8 provides a comparative summary of the environmental impacts of the proposed Project and all alternatives analyzed in detail in this EIR/EIS. In addition, Table 2-9 provides a comparison of impacts to state and federal waters between the proposed Project and alternatives. The discussions provided below are not impact statements, but rather overview summaries of what types of impacts could occur under each alternative, for each environmental issue area.

Table 2-8. Comparison of Alternatives to the Proposed Project

Issue Area	Proposed Project (Alternative 1)	Removal of Reach 2 (Alternative 2)	Modified Reach 3 (Alternative 3)	No Action (Alternative 4)
Aesthetics	The proposed levees would obstruct views of the desert landscape and use of construction equipment would degrade the existing visual character or quality of the surroundings.	Slightly reduced impacts on views of the desert landscape along Reach 2; construction equipment activity would be slightly reduced.	Essentially the same impacts on views of the desert landscape and reduced visual character or quality as the proposed Project.	Potential future degradation of visual character or quality of surroundings in the event of a large (100-year) storm.
Air Quality and Greenhouse Gases	Construction would result in emissions above the South Coast Air Quality Management District's regional and localized significance thresholds.	Slightly reduced overall truck trips and emissions during construction with Reach 2 removed. O&M activity would also be slightly reduced.	Essentially the same construction and O&M emissions as the proposed Project.	Potential increase in short-term and annual air quality impacts due to clean-up activities in the event of a large (100-year) storm.
Topography, Geology, & Soils	The proposed Project would be designed to withstand, and inspected following, major seismic events. Any repairs would be conducted as part of ongoing O&M. Some sediment would be intercepted and redistributed into the Preserve. Local topography would be altered at the spoil area and within the Preserve.	Essentially the same construction and O&M plan as the proposed Project. Slightly reduced effects on sediment movement and erosion.	Essentially the same as the proposed Project.	A large (100-year) storm event would continue to threaten the area. Flood protection would not be provided, and people in the region would remain at risk of flood related unstable soils or subsidence.
Sand Migration	During construction, the proposed Project would affect sand transport, sorting, and deposition within the wind corridor which supplies the Coachella Valley Preserve; however, implementation of mitigation measures would minimize these impacts. The proposed Project has been designed to minimize obstruction of sand transport by generally placing structures outside of the wind corridor, establishing a clear southern boundary for the Preserve protecting the wind corridor, establishing a 550-acre floodway, and O&M activities to replenish sand on the Preserve. Post construction the Project will increase sand supply by 9 – 14%, mainly as a result of the diversion of water and sediment to the east and southeast to the primary sand deposition area by the levee and channel of Reach 1.	Essentially the same construction and O&M plan as the proposed Project. May have slightly greater impacts to sand transport where material is trapped out of the wind corridor at the SCE sub-station. Slightly reduced effects on sand transport, sorting, and deposition within the wind corridor with the removal of Reach 2.	Essentially the same as the proposed Project. Slightly reduced effects on the wind corridor as the northern portion of Reach 3 would be further outside of the wind corridor.	A large (100-year) storm event would continue to threaten the area. The 550-acre floodway would not be established. Development in the wind corridor would contribute to further decreases in fluvial and aeolian sand transport and reduction of viable sand habitat in the Preserve.
Biological Resources	During construction and O&M activities the proposed Project could disturb Coachella Valley milk-vetch or its critical habitat; result in	Alternative 2 would reduce permanent impacts to designated critical habitat for	Alternative 3 would reduce permanent impacts to designated critical habitat for CVFTL from	Under the No Action Alternative, Project construction would not occur and flood risk to the area would

Table 2-8. Comparison of Alternatives to the Proposed Project

Issue Area	Proposed Project (Alternative 1)	Removal of Reach 2 (Alternative 2)	Modified Reach 3 (Alternative 3)	No Action (Alternative 4)
	the loss or disturbance to the Coachella Valley fringe-toed lizard, desert tortoise, flat-tailed horned lizard, golden eagle, Townsend's big-eared bat, Nelson's bighorn sheep, Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket, burrowing owl or its habitat, special-status bats and habitat, special-status small mammals and habitat, American badger, desert kit fox, special-status raptors, songbirds, and nesting birds; and could result in the loss of non-listed special-status plants, degradation of native vegetation and habitat, as well as the establishment and spread of invasive weeds, these impacts would be mitigable. Post construction the Project will increase sand supply by 9 – 14 percent, to the Preserve/Refuge and benefit sand dependent species.	Coachella Valley fringed-toed lizard from 85.72 acres to 81.06 acres and temporary impacts from 23.77 acres to 22.80 acres. However, there is only marginal habitat for CVFTL in Reach 2. Impacts to Coachella Valley milk-vetch (CVMV) critical habitat would be same as the proposed Project (Alternative 1). The removal of Reach 2 would reduce disturbance to general wildlife. Impacts to ephemeral drainages and jurisdictional features would be slightly lower with Alternative 2 (0.41 acres less of permanent impacts and 0.02 acres less of temporary impacts).	85.72 acres to 85.32 acres for Option A and from 85.72 acres to 81.54 acres for Option B when compared to the proposed Project. Temporary impacts would also be reduced from 23.77 acres to 23.23 acres for Option A and from 23.77 acres to 22.47 acres for Option B. However, there is only marginal habitat for CVFTL in the portions of Alternative 3 that would be moved and this species has not been observed in that location. Impacts to Coachella Valley milk-vetch (CVMV) critical habitat would be same as the proposed Project (Alternative 1). Permanent impacts to ephemeral drainages and jurisdictional features would be lower for both Option A (4.9 acres less) and Option B (3.33 acres less) of Alternative 3. Temporary impacts would also be lower for both Option A (0.64 acres less) and Option B (0.48 acres less). Option B would have slightly higher permanent (1.57 acres more) and temporary (0.16 acres more) impacts to ephemeral drainages and jurisdictional features than Option A.	remain. Ongoing sediment removal conducted by the county on Avenue 38 would continue to occur as needed. Sensitive resources found in that location including CVFTL would be subject to periodic loss during sediment removal activities. Without the levee on Reach sediment would continue to be lost from the system as storm flows carry material into developed areas south of the proposed project. Without this material dune communities, would continue to erode with limited soil replenishment. In the event of catastrophic flooding some of the dune areas could be washed away and or repairs and/or construction activities would be expected that could impact sensitive resources.
Cultural and Tribal Cultural Resources	No significant cultural resources are located within the Project Area of Potential Effect. Potential impacts on cultural or tribal cultural would only result from unanticipated or inadvertent discoveries during construction. O&M would be unlikely to adversely affect unidentified cultural or tribal cultural resources.	Slightly reduced potential for discovery and impacts to previously unidentified resources due to the reduced construction and O&M.	Essentially the same as the proposed Project.	Potential unknown buried resources may be inadvertently unearthed or damaged due to ground-disturbing repair or clean-up activities following a large (100-year) storm event.

Table 2-8. Comparison of Alternatives to the Proposed Project

Issue Area	Proposed Project (Alternative 1)	Removal of Reach 2 (Alternative 2)	Modified Reach 3 (Alternative 3)	No Action (Alternative 4)
Land Use and Recreation	A physical barrier would be created in the community of Thousand Palms, although access would be maintained. The Project would displace 126 properties, including 7 residences. Bike paths and trails in the area would also require re-routing. Stormwater flows would be channeled into the existing stormwater conveyance facilities at the Classic Club Golf Course and the Del Webb/Sun City residential development.	Slightly reduces the number of properties displaced from 126 to 123; the same 7 residences would be displaced. Impacts on recreation and trails would be essentially the same.	Essentially the same as the proposed Project. However, this Alternative would result in greater impacts to private lands.	No physical barriers would be constructed. No properties would be displaced. Recreation and trails in the region would not impacted, except in the event of a large (100-year) storm event.
Noise	Construction activities would result in substantial ambient noise increases.	Slightly reduced ambient noise increase during construction near Reach 2.	Essentially the same ambient noise increase during construction as the proposed Project.	Potential increase in ambient noise levels due to clean-up activities following a large (100-year) storm event.
Paleontological Resources	The Project is not located on a paleontologically sensitive area. Impacts to buried resources are unlikely during construction or O&M.	Slightly reduced potential for discovery and impacts to previously unidentified resources due to the reduced construction and O&M.	Essentially the same as the proposed Project.	Potential unknown buried resources may be inadvertently unearthed or damaged due to natural processes or ground-disturbing repair or clean-up activities following a large (100-year) storm event.
Public Safety	The Project would construct levees and channels for the purpose of flood control and would not increase demand for fire or police protection. Standard measures for reducing fire risk, refueling practices, worker training, and waste management would mitigate potential for spills or inadvertent releases.	Slightly reduced potential for spills or inadvertent releases due to the reduced construction and O&M.	Essentially the same potential for spills or other inadvertent releases as the proposed Project	A large (100-year) storm event may damage infrastructure, including government facilities related to police or fire protection. This could increase demand for rescue services, negatively affect response times, and require the construction of new facilities. Spills or inadvertent releases may also occur during clean-up activities.
Socioeconomics and Environmental Justice	The Project would displace 7 homes, affecting 0.2% of the total housing supply, and 0.2% of the total population within the Thousand Palms CDP. The Project may indirectly induce growth in the region by removing barriers to future development; however, development in the region is currently not prohibited, and has proceeded without the Project.	Essentially the same as the proposed Project. Would reduce the number of affected properties from 126 to 123; the same 7 residences would be displaced.	Essentially the same as the proposed Project. However, this Alternative would result in greater impacts to private lands.	Residents would continue to be exposed to risk of a 100-year flood event. Future flooding could negatively impact unprotected residential development and potentially displace a substantial number of people or housing, depending on the severity of damage.

Table 2-8. Comparison of Alternatives to the Proposed Project

Issue Area	Proposed Project (Alternative 1)	Removal of Reach 2 (Alternative 2)	Modified Reach 3 (Alternative 3)	No Action (Alternative 4)
Transportation	Construction would require a substantial number of truck trips, which would impact local roadways. Permanent realignment of Avenue 38 and temporary closures to certain streets would also be necessary. Periodic O&M trips would not substantially impact local roadways.	Slightly reduced truck trip volume, and roadways near Reach 2 would not be impacted. O&M activity would be slightly reduced.	Essentially the same impacts on local roadways as the proposed Project.	Potential increase in truck trips within the greater Thousand Palms region due to clean-up activities in the event of a large (100-year) storm event.
Water Resources	Construction of the Project would protect large areas of the Thousand Palms community from 100-year flood flows. Erosion and sedimentation would be sustainably altered.	Flood protection would be slightly reduced due to the removal of the Reach 2 levee. SCE Mirage substation would be vulnerable to inundation during a 100-year flood event.	Essentially the same flood protection as the proposed Project.	A large (100-year) storm event would continue to threaten the area. Flood protection would not be provided, and future development would need additional mitigation and design changes to accommodate for flooding.
Tribal Cultural Resources	No significant cultural resources are located within the Project Area of Potential Effect. Potential impacts on tribal cultural artifacts would only result from unanticipated or inadvertent discoveries during construction. O&M would be unlikely to adversely affect unidentified tribal cultural resources.	Slightly reduced potential for discovery and impacts to previously unidentified resources due to the reduced construction and O&M.	Essentially the same as the proposed Project.	Potential unknown buried resources may be inadvertently unearthed or damaged due to ground-disturbing repair or clean-up activities following a large (100-year) storm event.
Energy	Construction of the Project is designed to encourage efficient use of resources, including reuse of Project site materials to minimize imports and an on-site concrete batch plant to minimize off-site waste disposal. O&M would recycle eroded materials to upstream/upwind Project areas.	Essentially the same as the proposed Project, which is not considered wasteful, inefficient, or will unnecessarily consume energy resources.	Essentially the same as the proposed Project, which is not considered wasteful, inefficient, or will unnecessarily consume energy resources.	Potential increase in energy consumption within the greater Thousand Palms region due to clean-up and repair activities in the event of a large (100-year) storm event.
Wildfire	Construction and maintenance would require temporary closure and disruptions to roads and/or travel lanes and truck trips could temporarily impede emergency vehicle movements. The Project area is not located in a moderate, high, or very high FHSZ or landslide zone and is therefore not a risk of wildfires or landslides. All hazardous chemicals will be stored appropriately on-site. Periodic O&M trips would not substantially impact local roadways.	Slightly reduced truck trip volume and temporary roadway closures near Reach 2. O&M activity would also be slightly reduced.	Essentially the same impacts on local roadways as the proposed Project.	In the event of a catastrophic flood (100-year event), adverse impacts are not anticipated to be influenced by, or exacerbated by, wildfire.

Table 2-9. Comparison of Impacts to State and USACE Waters of Alternatives to the Proposed Project

Project Component	Alternative 1 (Preferred)				Alternative 2				Alternative 3 (Option A)				Alternative 3 (Option B)			
	Permanent		Temporary		Permanent		Temporary		Permanent		Temporary		Permanent		Temporary	
	Acres	Length (linear feet)	Acres	Length (linear feet)	Acres	Length (linear feet)	Acres	Length (linear feet)	Acres	Length (linear feet)	Acres	Length (linear feet)	Acres	Length (linear feet)	Acres	Length (linear feet)
Reach 1	2.23	10,042	0.37	1,527	2.23	10,042	0.37	1,527	2.23	10,042	0.37	1,527	2.23	10,042	0.37	1,527
Reach 2	0.41	2,319	0.02	127	—	—	—	—	0.41	2,319	0.02	127	0.41	2,319	0.02	127
Reach 3	4.97	2,355	0.76	331	4.97	2,356	0.76	331	1.53	2,011	0.12	332	1.64	1,385	0.28	428
Reach 4	3.01	2,446	3.35	1,251	3.01	2,446	3.35	1,251	3.01	2,446	3.35	1,251	3.01	2,446	3.35	1,251
Downstream	17.98	75,407	—	—	18.15	78,258	—	—	9.5	74,203	—	—	11.04	72,383	—	—
Total	10.62	17,162	4.50	3,236	10.21	14,844	4.48	3,109	5.72	16,818	3.86	3,237	7.29	16,192	4.02	3,333

2.6 NEPA Preferred Alternative and CEQA Environmentally Superior Alternative

2.6.1 NEPA Preferred Alternative

Corps Regulatory Division will use the analysis developed in the 404(b)(1) Alternatives Analysis (Appendix C.4) and the impact assessment in this EIS, to select the Least Environmentally Damaging Practicable Alternative (LEDPA). The LEDPA is the only alternative that may be permitted under the Clean Water Act. In accordance with the Clean Water Act, no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impacts on aquatic ecosystems, as long as the alternative does not have other significant adverse environmental consequences. Under this definition, an alternative is only considered "practicable" if it is available and capable of being implemented after taking into consideration the cost, existing technology, and logistics of the project, in light of overall project purposes. Therefore, factors including cost and technology are considered in terms of whether a particular feature, alignment, or alternative would be practicable. The Corps will determine the LEDPA as part of the Final EIR/EIS.

2.6.2 CEQA Environmentally Superior Alternative

2.6.2.1 Background

In accordance with CEQA requirements, an "environmentally superior alternative" must be identified among the alternatives analyzed in an EIR or EIR/EIS. The environmentally superior alternative is the alternative found to have an overall environmental advantage compared to the other alternatives based on the impact analysis in the EIR. If the environmentally superior alternative is the No Project alternative, State CEQA Guidelines Section 15126.6(e)(2) requires the EIR to identify an environmentally superior alternative from among the other alternatives.

Determining which of the alternatives is environmentally superior involves judgment and depends on many factors. Determination of the environmentally superior alternative also requires a weighing of one type of impact against another type, such as weighing short-term effects against long-term effects or weighing effects on the natural environment against effects on the human environment. Consequently, establishment of the environmentally superior alternative is sometimes difficult and there can be a lack of consensus even when the most objective measures are used to evaluate alternatives.

In order to meet CEQA's requirement to identify an environmentally superior alternative, the EIR/EIS preparers primarily considered those resource/issue areas that have the greatest potential for resulting in long-term, significant impacts, which include biological and visual resources. Impacts associated with construction (i.e., temporary or short-term) or those that are easily mitigated to less-than-significant levels were given consideration but were considered less important than long-term impacts.

2.6.2.2 No Action Alternative

The No Action Alternative is environmentally superior to the other alternatives because it would avoid all of the short-term impacts associated with Project construction, as well as long-term adverse effects, including significant impacts related to visual resources, biological resources, noise, and recreation. However, implementation of this alternative would not provide long-term benefits to the community by providing flood protection nor would increase sand sources for the Preserve/Refuge. It is important to note that while the No Action Alternatives avoids the impacts associated with the proposed Project, it

does not necessarily mean that there would be no impacts as impacts related to flood flows and the damage caused by flooding would continue to occur under the No Action Alternative.

Because the No Project/Action Alternative has been determined to be environmentally superior, CEQA requires that an environmentally superior alternative be identified among the other alternatives.

2.6.2.3 Environmental Superior Alternative Other than No Project

As expected, alternatives that involve building less are generally superior from an environmental perspective because less land is disturbed, less natural habitat is lost or degraded, and there are reduced short-term construction impacts (fewer air pollutant emissions, less fugitive dust, less noise, etc.). Building a smaller project can also have other environmental advantages. In this case, alternatives that result in the construction of shorter or fewer levees would have reduced construction impacts, and long-term visual impacts. However, the trade-off may be that some Project objectives are not fulfilled or are only partially fulfilled.

While differences in the Project footprint are relatively minor among the action alternatives, the Removal of Reach 2 (Alternative 2) would reduce the amount of levee construction by 1,700 feet (0.32 mile) thereby resulting in the fewest environmental impacts and would be considered the environmentally superior alternative. Impacts to sensitive biological resources including CVFTL and Coachella Milk-vetch would be the same as the proposed Project. Alternative 2 would also result in the lowest impact to waters by reducing the direct loss to 10.21 acres (a 0.41-acre reduction). Without Reach 2, however, flows from Reach 1 would not be directed southeast towards Reach 3 as effectively and some sand that would be available to the wind corridor would be lost. In the event of a 100-year flood event, with current levels of protection, the SCE Mirage substation would become partially inundated (NHC, 2017). Residences located between 30th Avenue and the north end of Reach 3 (just south of E. Ramon Road) are not anticipated to be inundated during a 100-year flood event (NHC, 2017). However, removing this reach could increase potential flood risk to downstream areas.

2.7 Agency Use of this Document

The levees and channels constructed as part of the Thousand Palms Flood Control Project would be operated and maintained by the CVWD. The CVWD is the CEQA Lead Agency for the Project. The CVWD Board of Directors will use this EIR/EIS to aid in the decision-making process for the Project. If the Final EIR/EIS shows that the Project would have significant and unavoidable (not mitigable) impacts, but the Board of Directors still approves the Project, then the decision must include a "Statement of Overriding Considerations," which explains the reasons for approval.

If approved, the CVWD would work in coordination with FEMA to implement the Project. The CVWD would finalize the design and construct, operate, and maintain the Project. The CVWD would also be responsible for adhering to the general and special conditions of the 404-permit issued by the Corps for this project.

The Corps will use this EIR/EIS as a decision document for making a Clean Water Act Section 404 permit decision. The documentation of project impacts in the EIR/EIS and the analysis in the 404(b)(1) Alternatives Analysis will be used to identify a LEDPA and a Record of Decision will be prepared by the Corps documenting the agency's permitting decision (see Appendix C.4).

2.8 Permits and Approvals

The CVWD and the Corps are the Lead Agencies for preparation of this EIR/EIS. One of the primary purposes of the EIR/EIS is to enable the CVWD, Corps, responsible agencies, and interested parties to understand the potential environmental effects associated with implementation of the Project.

The State CEQA Guidelines Section 15124(d) directs that the project description includes identification of agencies expected to use the EIR in their decision-making process, provide a list of permits and other approvals that may be required to implement the project, and provide a list of related local, State, and federal consultation requirements. Table 2-10 provides a list of the federal, State, regional, and local regulatory/permitting agencies, as well as local Native American Tribes that may have permitting, authorization, or consultation requirements for certain aspects of the Project.

Table 2-10. Regulatory/Permitting Agencies and Authorizations

Agency	Potential Permit/Authorization
Federal Agencies	
U.S. Army Corps of Engineers (Corps)	• Clean Water Act Section 404 Permit
U.S. Fish and Wildlife Service	• Section 7 consultation (Corps) for Endangered Species Act • Federal coordination required for land swap in the Refuge
Federal Emergency Management Agency (FEMA)	• Conditional Letter of Map Revision (CLOMR)
State Agencies	
California Department of Fish and Wildlife (CDFW)	• California Fish and Game Code Section 1600 Streambed Alteration Agreement • State Endangered Species Act 2081 Permit
State Historic Preservation Officer	• AB 52 Tribal Resources consultation
Native American Tribes	
Various local tribes including: • Cahuilla Band of Indians • Los Coyotes Band of Cahuilla and Cupeno Indians • Morongo Band of Mission Indians • Ramona Band of Cahuilla Indians • Soboba Band of Luiseno Indians • Torres Martinez Desert Cahuilla Indians • Twenty-nine Palms Bank of Mission Indians	• Native American consultation • AB 52 Tribal Resources consultation
Regional Agencies	
South Coast Air Quality Management District	• General Conformity • Operational permit(s) for stationary/portable source, such as the concrete batch plant unless permitted under the California Air Resources Board Portable Equipment Registration Program (PERP).
Colorado River Basin Regional Water Quality Control Board	• Clean Water Act Section 401 Water Quality Certification • National Pollutant Discharge Elimination System (NPDES) Stormwater General Construction Permit and Stormwater Pollution Prevention Plan • Waste Discharge Requirements
Riverside County Transportation Department	• Encroachment & Transportation Permits – realignment of Avenue 38 and widening of Washington Street
Local Agencies	
Coachella Valley Preserve	• Update boundary to correspond with Project alignment; placement of blowsands on Preserve
Coachella Valley Multiple Species Habitat Conservation Plant (CVMSHCP)	• Update boundary to correspond with Project alignment and verify consistency with CVMSHCP/NCCP

3. Affected Environment

3.1 Introduction to the Affected Environment

This chapter of the EIR/EIS for the Thousand Palms Flood Control Project ("Project" or "proposed Project") provides a description of baseline (existing) environmental conditions within the study area and immediate vicinity. NEPA requires an EIS to succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration (40 CFR 1502.15). However, NEPA has no direct guidance regarding when the establishment of a baseline for determining the significance of an impact when preparing an EIS should occur. For this EIS/EIR document and pursuant to CEQA Guidelines Section 15125(a), the environmental baseline, or affected environment for proposed Project and alternatives is based on the environmental conditions that existed at the time the CEQA Notice of Preparation (NOP) and NEPA Notice of Intent (NOI) for the EIR/EIS were published (November 2016), except where indicated differently. The regulatory settings applicable to each environmental issue area are also presented in this chapter, including government rules, regulations, plans, and policies.

The impact analyses provided in Chapter 4 are based on changes between existing conditions described in this chapter and conditions in the future with implementation of the proposed Project and each alternative. It is the difference between existing conditions and future conditions that forms the basis for identification of impacts associated with the implementation of each alternative. In other words, the changes in the future environment that would be caused by an alternative constitute the impacts of that alternative.

3.2 Aesthetics

For the issue area of aesthetics, the general study area boundaries include Interstate 10 (I-10) to the southwest, the Indio Hills to the northeast and east; Flat Top Mountain, Edom Hill, and the mouth of Long Canyon to the northwest; and Coachella Canal Siphon on the southeast. This area is approximately 45 square miles in size and is considered sufficient to capture all potential aesthetic impacts of the Project (USACE, 2000). The community of Thousand Palms is located within the study area for aesthetics, and cities in the vicinity include Palm Springs to the northwest, Cathedral City to the southwest, the City of Indio to the southeast. Aesthetic resources are generally considered to include areas that are visible to the general public and considered visually attractive; relevant baseline environmental conditions and regulatory environment are described in this section.

3.2.1 Environmental Baseline

3.2.1.1 General Visual Characteristics

Over the past decade, development throughout the study area has altered environmental conditions relevant to aesthetics by introducing new residential developments and other sensitive receptors, such as schools (Xavier College Preparatory High School) and recreational resources (Classic Club Golf Course) that both characterize the aesthetic environment and are affected by it. The majority of the study area persists as open space characteristic of desert landscape, with residential, recreational, commercial, and industrial developments primarily concentrated near the north side of the I-10 freeway. According to the Riverside County General Plan, I-10 is a County Eligible Scenic Highway (Riverside County, 2015). Scenic corridors in the Project area, as identified in the Riverside County General Plan include I-10 and Varner Road (Riverside County, 2021).

Within the study area for aesthetics, long-range views to the north and east include the Little San Bernardino Mountains in the background and the Indio Hills in the foreground. To the south, long-range views include the Santa Rosa and San Jacinto Mountains. In general, views to the north are not impeded by man-made objects. Scattered palm oases can be viewed at the base of the Indio Hills. Views to the south, however, include the I-10 corridor signified by trees along its route and vehicular traffic. Low-rise commercial buildings and single- and multi-family developments occur throughout the Thousand Palms, Tri-Palms Estates, and Del Webb's Sun City areas. Two housing developments have been approved (not yet under construction) at the southern terminus of Reach 4 – Mirasera (Mirasera Specific Plan No. 338 – Tentative Tract Map No. 35058), and Valanté (Valanté Specific Plan No. 360A1 - Tentative Tract Map No. 34651). If constructed, they would be required to comply with local building codes for construction within a 100-year flood plain.

The terrain of the study area generally slopes downward from the Indio Hills toward the I-10 freeway and includes occasional low rolling hills, sand dunes, desert vegetation, and erosional features that are characteristic of alluvial fans. Vegetation in the study area includes a variety of desert scrub communities such as creosote scrub, cheesebush scrub, rows of non-native tamarisk, and fields of exotic Sahara mustard. The largest alluvial fan begins at the southern end of the Indio Hills, at the mouth of Thousand Palms Canyon. Rocks and sand eroded from the Little San Bernardino Mountains create a coarse, sandy cobblestone surface that is broken by a network of narrow, sandy washes. Westerly winds move finer particles and sand from the southern portion of this fan into the constantly changing blows and fields (USACE, 2000).

The Coachella Valley Preserve constitutes a large portion of the study area. Due to the open space characteristics and lack of development, this area is considered to have high scenic value. The Preserve straddles the Indio Hills and the San Andreas Fault. From the hills to the desert floor, it encompasses alluvial fans and isolated terraces of desert pavement dissected by wash areas in the north, and extensive blowing sand fields and sand dunes in the south (USACE, 2000). The Coachella Valley Preserve also contains several palm oases, including the Thousand Palms Oasis, which supports a concentration of California fan palms and offers a trail for outdoor recreation.

3.2.1.2 Specific Viewing Locations

Reach 1

Reach 1 of the proposed Project would consist of a 2.4-mile levee with varying heights ranging from approximately 5 feet to 14 feet, depending on topography and ground slope. The levee would generally run parallel to the north of Southern California Edison's (SCE) existing utility corridor.

There are scattered single-family residences located to the north and south of the levee alignment. The top and upstream/northern sides of the levees (facing the Indio Hills) would be comprised of soil cement, while the southern/downstream side would be comprised of earthen/soil materials. Views from the residences located north of the levee be of a cement, man-made feature in an area that currently consists of vacant land with a transmission line right-of-way (ROW). In particular, the Reach 1 levee would be in the foreground view from the cluster of residences surrounding Desert Moon Drive. For residences located closer to the Indio Hills, Reach 1 would be viewed at the middle- or background from higher elevations.

From the residential development on the south side of Reach 1, where development is denser, the levee would be made of earthen/soil materials with the intention of matching the levee with the surrounding natural landscape. However, the linear levee would range from 5 to 14 feet in height, which would affect the existing views of the desert landscape and foothills. Reach 1 would also be within foreground views from a regional trail located in this area (see Figure 3.8-4, Recreational Resources).

Reach 2

Reach 2 of the proposed Project is comprised of a 0.33-mile levee with a height of approximately 5 feet. Residences along Vista De Oro would have this portion of the proposed Project in the foreground of their viewshed. Other residences in this area to the east along Chimayo Road and south along E. Ramon Road would have Reach 2 in the middle- and background of their viewsheds.

Reach 3

Reach 3 of the proposed Project is comprised of a 1.23-mile levee, an access road, and a 1.01-mile incised trapezoidal channel. The Reach 3 levee would have a height ranging from approximately 5 to 14 feet, depending on topography and ground slope. Recreation users of the Classic Club Golf Course and the Pegasus Therapeutic Riding facility, students and faculty of the Xavier College Preparatory High School, and residences along Mesquite Tree Drive, Cottontail Court would have this portion of the proposed Project in the foreground of their viewshed. Residences to southwest along Chinicahua Drive, Guadalajara Drive, Acapulco Trail, Walton Circle, Lisa Circle, and Elizabeth Drive and northeast along Via Eduardo, Via Leon, and E. Ramon Road would have these components of Reach 3 in the middle- and background of their viewsheds. Reach 3 would also be within foreground views from a regional trail located in this area (see Figure 3.8-4).

Reach 4

Reach 4 of the proposed Project is comprised of an approximately two-mile incised trapezoidal channel, which would not create a vertical obstruction. Recreation users of the Classic Club Golf Course and residences along the east side of the Del Sun Webb housing development and along Avenue 38 would have this portion of the proposed Project in the foreground of their viewshed. Additionally, bicyclists along the Class I bike paths located along Varner Road and Washington Street would have Reach 4 in their foreground viewshed (see Figure 3.8-4).

3.2.2 Regulatory Framework

Federal

No federal regulations associated with visual resources apply to the proposed Project.

State

No state regulations associated with visual resources apply to the proposed Project.

Local

Regulations and policies related to aesthetic resources and relevant to the Project are contained within the County of Riverside General Plan, Western Coachella Valley Area Plan (WCVAP). Within this plan, Policy WCVAP 20.1 states that visual resources in the Western Coachella Valley shall be protected by adherence to General Plan policies found in the Multipurpose Open Space Element (Riverside County, 2021). The WCVAP also designates Varner Road and I-10 as scenic corridors (Riverside County, 2021). Consistent with the WCVAP, following is a list of relevant policies from the County of Riverside General Plan, Multipurpose Open Space Element, regarding scenic resources (Riverside County, 2021).

- **Policy OS 21.1** Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.
- **Policy OS 22.1** Design developments within designated scenic highway corridors to balance the objectives of maintaining scenic resources with accommodating compatible land uses.
- **Policy OS 22.3** Encourage joint efforts among federal, state, and County agencies, and citizen groups to ensure compatible development within scenic corridors.
- **Policy OS 22.5** Utilize contour grading and slope rounding to gradually transition graded road slopes into a natural configuration consistent with the topography of the areas within scenic highway corridors.

Consistency

Table 3.2-1 provides a list of county plans and policies that are applicable to aesthetics and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.2-1. Consistency with Applicable Plans and Policies – Aesthetics

Plan/Policy	Consistency	Explanation
Riverside County General Plan, Multipurpose Open Space Element – Policy OS 21.1. Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.	Yes	Scenic visits in the Project area are of the Indio Hills to the north. The levees and channels would be situated far enough from residences to minimize view blockage, and would generally be buffered by existing vegetation, utility infrastructure, existing block walls, or by distance such that views of the Indio Hills would not be substantially affected. See additional analysis in Section 4.2 (Aesthetics).
Riverside County General Plan, Multipurpose Open Space Element – Policy OS 22.1. Design developments within designated scenic highway corridors to balance the objectives of maintaining scenic resources with accommodating compatible land uses.	Yes	The Project would not be visible from I-10, with the exception of a portion of Reach 4, which would be an incised channel. Much of this area is approved for residential development, which would block views of the Project.
Riverside County General Plan, Multipurpose Open Space Element – Policy OS 22.3. Encourage joint efforts among federal, state, and county agencies, and citizen groups to ensure compatible development within scenic corridors.	Yes	The Project has been coordinated with proposed development projects in the area (Mirasera and Valanté) and will go through the public participation process under CEQA and NEPA.
Riverside County General Plan, Multipurpose Open Space Element – Policy OS 22.5. Utilize contour grading and slope rounding to gradually transition graded road slopes into a natural configuration consistent with the topography of the areas within scenic highway corridors.	Yes	The road to the National Wildlife Refuge blow sand augmentation area would be graded within a flat area, which would not necessitate contour grading or slope rounding.

3.3 Air Quality and Greenhouse Gases

This section presents information on ambient air quality conditions in the vicinity of the study area for the proposed Thousand Palms Flood Control Project (Project). Section 3.3.1 describes the existing environmental setting (baseline conditions) relative to air quality and greenhouse gases and identified sensitive receptors in the study area and vicinity. Section 3.3.2 describes the applicable laws and regulations for air quality and greenhouse gases.

3.3.1 Environmental Baseline

3.3.1.1 Air Quality

Regional Climate

The proposed Project is located in the Coachella Valley (Valley) area of Riverside County, within the designated Salton Sea Air Basin (SSAB), under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The Valley is characterized as a desert with hot summers, mild winters, and very little annual rainfall. A monthly climate summary for the city of Indio was selected to characterize the Project area, as provided below in Table 3.3-1.

Table 3.3-1. Indio Monthly Average Temperatures and Precipitation

Month	Temperature (°F)		Precipitation (inches)
	Maximum	Minimum	
January	71	39	0.64
February	75	44	0.51
March	80	50	0.31
April	87	57	0.11
May	94	64	0.05
June	102	72	0.01
July	107	78	0.12
August	106	77	0.25
September	102	70	0.31
October	92	59	0.20
November	80	47	0.26
December	72	39	0.54

Source: WRCC, 2021 (averages from 1894 through 2016).

Average summer (June–September) high and low temperatures in the Project area range from 107°F to 70°F, respectively. Average winter (December–March) high and low temperatures range from 80°F to 39°F. The average annual precipitation is approximately 3.3 inches with over 60 percent occurring between December and March. The months of April through November are hot and very dry with four of those eight months averaging less than one eighth of an inch of precipitation. Little precipitation occurs during summer because high-pressure cells block migrating storm systems over the eastern Pacific, and the precipitation that does occur is typically in the late summer, which is extremely variable from year to year.

Winds across the Project area are an important meteorological parameter as they control both the initial rate of dilution and direction of pollutants. The prevailing wind direction in the Project area is from the northwest to the southeast. Figure 3.3-1 presents a wind rose of surface meteorological data collected at Indio by the SCAQMD for the years 2012-2016 (SCAQMD, 2021a).

As Figure 3.3-1 shows, wind flows predominantly from the northwest down the valley, with a smaller frequency of winds going up valley and a very low frequency of winds occurring perpendicular to the direction of the Coachella Valley in the Project area (SCAQMD, 2021a). The Project area is closer to the San Gorgonio Wind Resource Area than the Palm Springs Airport meteorological station, so wind speeds at the Project site are expected to be higher than those shown in Figure 3.3-1.

Air Pollutants and Monitoring Data

Air pollutants are defined as two general types: (1) "criteria" pollutants, representing pollutants for which national and state health- and welfare-based ambient air quality standards have been established; and/or (2) toxic air contaminants (TACs), which may lead to serious illness or increased mortality even when present at relatively low concentrations. Generally, TACs do not have ambient air quality standards. The three TACs that do have ambient air quality standards (lead, vinyl chloride, and hydrogen sulfide) are pollutants that would not be emitted by the Project above trace quantities and are therefore not relevant to the Project.

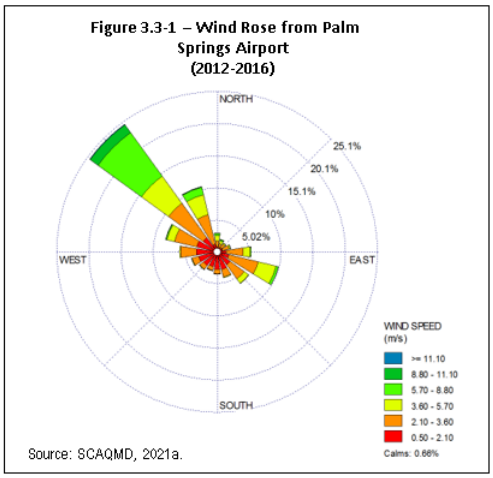


Figure 3.3-1 – Wind Rose from Palm Springs Airport (2012-2016)
Source: SCAQMD, 2021a.

Criteria Pollutants

The United States Environmental Protection Agency (USEPA), California Air Resources Board (CARB), and local air districts classify an area as attainment, unclassified, or nonattainment depending on whether or not the monitored ambient air quality data shows compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. The primary National Ambient Air Quality Standards (NAAQS) and primary California Ambient Air Quality Standards (CAAQS) relevant to the proposed Project are shown in Table 3.3-2.

Table 3.3-2. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	Health Effects
Ozone (O_3)	1-hour	0.09 ppm	—	Respiratory symptoms, worsening of lung disease leading to premature death, , lung tissue damage
	8-hour	0.070 ppm	0.070 ppm	
Respirable Particulate Matter (PM10)	24-hour	50 µg/m^3	150 µg/m^3	Premature death & hospitalization, primarily for worsening of respiratory disease
	Annual	20 µg/m^3	—	
Fine Particulate Matter (PM2.5)	24-hour	—	35 µg/m^3	Premature death, hospitalization for worsening of cardiovascular disease, hospitalization for respiratory disease, asthma-related emergency room visits Increased symptoms, increased inhaler usage
	Annual	12 µg/m^3	12.0 µg/m^3	
Carbon monoxide (CO)	1-hour	20 ppm	35 pm	Chest pain in patients with heart disease, headaches, light-headedness, reduced mental alertness
	8-hour	9.0 ppm	9 ppm	
Nitrogen dioxide (NO_2)	1-hour	0.18 ppm	0.100 ppm[1]	Lung irritation, enhanced allergic responses
	Annual	0.030 ppm	0.053 ppm	
Sulfur dioxide (SO_2)	1-hour	0.25 ppm	0.075 ppm[1]	Worsening of asthma: increased symptoms, increased medication usage, and emergency room visits
	3-hour	—	0.5 ppm	
	24-hour	0.04 ppm	—	

Source: CARB, 2020a; CARB, 2020; CARB, 2021a.
Notes:
ppm=parts per million; µg/m^3= micrograms per cubic meter; "—" = no standard
1 - The federal 1-hour NO_2 and SO_2 standards are based on the 3-year average of the 98th and 99th percentile of daily hourly maximum values, respectively.

As previously mentioned, the Project area is located within the SSAB; Table 3.3-3 summarizes the federal and State attainment statuses of criteria pollutants for the SSAB, based on the NAAQS and CAAQS.

Table 3.3-3. Attainment Status for the Salton Sea Air Basin

Pollutant	Attainment Status	
	State	National
Ozone (O_3)	Nonattainment	Severe-15 Nonattainment
PM10	Nonattainment	Serious Nonattainment
PM2.5	Attainment	Attainment [a]
CO	Attainment	Attainment [a]
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment [b]

Source: CARB, 2020b; CARB, 2021b; USEPA, 2021.
Notes:
[a] Attainment = unclassified (Some criteria pollutants do not have unclassified attainment status, in which case they are called "attainment." Unclassified pollutants are typically considered to be in attainment.)
[b] The federal 1-hour SO_2 standard attainment/nonattainment designation for this area has not been completed.

The nearest ambient air quality monitoring stations to the proposed Project are the Indio-Jackson Street monitoring station and Palm Springs-Fire Station monitoring station, which measure ozone, PM10, and PM2.5. These pollutants are listed below as they are of particular concern due to ozone and PM10 being designated as non-attainment in the Salton Sea Basin. The last three years of maximum ambient monitored concentrations from these two monitoring stations, are provided in Table 3.3-4.

Table 3.3-4. Air Quality Monitoring Summary 2018–2020

Pollutant	Averaging Time	Monitoring Station	Maximum Concentration (ppm or µg/m³) [1]		
			2018	2019	2020
O_3	1-hour	Palm Springs	0.111	0.100	0.119
		Indio	0.106	0.103	0.097
	8-hour	Palm Springs	0.099	0.084	0.094
		Indio	0.091	0.087	0.085
PM10	24-hour	Palm Springs	117	75	129.8
		Indio	146	141	145.2
	Annual mean	Palm Springs	21.0	19.5	23.2
		Indio	33.2	27.8	31.6
PM2.5	24-hour (98th percentile)	Palm Springs	14.3	12.4	16.9
		Indio	17.0	13.5	20.2
	Annual mean	Palm Springs	6.02	6.05	6.4
		Indio	8.32	7.37	8.4

Source: CARB, 2021c.
ppm=parts per million; µg/m³= micrograms per cubic meter; "—" = no data
1 - Gaseous pollutant (ozone) concentrations are shown in ppm and particulate (PM10 and PM2.5) concentrations are shown in µg/m³

Comparing the measured concentrations (Table 3.3-4) with the ambient air quality standards (Table 3.3-2), shows that exceedance of federal and State ozone standards and state PM10 standards are occurring near the Project area, irrespective of the proposed Project. Table 3.3-4 also shows that PM2.5 concentrations in the Project area are well below the standards.

Toxic Air Contaminants

TACs are compounds that are known or suspected to cause adverse long-term (cancer and chronic) and/or short-term (acute) health effects. The Health and Safety Code defines a TAC as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential

hazard to human health. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another's. There are almost 200 compounds designated in California regulations as TACs (17 CCR §§ 93000-93001). The list of TACs also includes the substances defined in federal statute as hazardous air pollutants (HAPs) pursuant to Section 112 (b) of the federal Clean Air Act (42 U.S.C. Section 7412(b)). Some of the TACs are groups of compounds which contain many individual substances (e.g., copper compounds, polycyclic aromatic compounds).

TACs are emitted from mobile sources, including products such as diesel particulate matter (DPM); industrial processes and stationary sources, such as dry cleaners, gasoline stations, and paint and solvent operations; and stationary fossil fuel-burning combustion. Ambient TACs concentrations tend to be highest in urbanized and industrial areas near major TACs emissions sources, or near major mobile TACs emissions sources, such as heavily traveled highways or major airports/seaports.

Unlike for criteria pollutants, no monitoring studies of ambient TACs concentrations have been performed in the SSAB. The SCAQMD estimates in the Multiple Air Toxics Exposure Study IV (MATES IV) that over 68 percent of the background airborne air toxics risk in the adjacent South Coast Air Basin (SCAB) is due to diesel exhaust (SCAQMD, 2015). The existing background air toxics risk in the SSAB is lower than in the SCAB due to much lower levels of urban development. Generally, TACs do not have ambient air quality standards. The three TACs that do have State ambient air quality standards (i.e., lead, vinyl chloride, and hydrogen sulfide) are pollutants that are in attainment of the State standards in the Coachella Valley and are not relevant to the emissions sources for this Project.

Valley Fever

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte (an organism, especially a fungus or bacterium, which grows on and derives its nourishment from dead or decaying organic matter) in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-disturbing activities and become airborne. Agricultural workers, construction workers, and other people who are outdoors and are exposed to wind, dust, and disturbed topsoil are at an elevated risk of contracting Valley Fever (CDC, 2021).

Most people exposed to the CI spores will not develop the disease and of 100 persons who are infected approximately 60 will have no symptoms, 40 will have some symptoms, and 2 to 4 will have the more serious disseminated forms of the disease (Guevara, 2014). After recovery, nearly all, including the asymptomatic, develop a life-long immunity to the disease (Guevara, 2014). African Americans, Asians, women in the third trimester of pregnancy, and persons whose immunity is compromised are most likely to develop the most severe form of the disease (CDC, 2021). In addition to humans, a total of 70 different species are known to be susceptible to Valley Fever infections, including dogs, cats, and horses, with dogs being the most susceptible (LACPH, 2007).

The Project is located in an area designated as suspected endemic for Valley Fever by the Center for Disease Control (CDC, 2021). Annual case reports for 2000 through 2019 from the California Department of Public Health indicate that Riverside County has reported incident rates for Valley Fever ranging from 1.5 to 10.4 cases per year per 100,000 population (CDPH, 2015; CDPH, 2020). The incidence rates for Riverside County during this period have generally been equal to or below the State average incidence rates and have been well below the worst-case annual rates for other counties within the State during

this period, which occur within the San Joaquin Valley and during some years have accounted for over 300 cases per 100,000 population.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill and the chronically ill, especially those with cardio-respiratory diseases. Residential areas are considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

The nearest sensitive receptors for the proposed Project include residential areas and a high school. The nearest residential and school receptors to each of the four levee/channel reaches and other notable construction work areas are shown in Table 3.3-5.

Table 3.3-5. Nearest Sensitive Receptors

Receptor Type	Receptor Location / Name	Distance to Receptor[1,2]
Reach 1		
Closest School	Della S Lindley Elementary School	1.18 miles (1,900 meters)
Closest Permanent Residence[3]	Burr Oak Road	190 feet (58 meters)
Closest Permanent Residence[4]	Desert Moon Drive and Via Las Palmas	60 feet (18 meters)
Reach 2		
Closest School	Della S Lindley Elementary School	1.52 miles (2,450 meters)
Closest Permanent Residence	Vista De Oro	520 feet (158 meters)
Reach 3		
Closest School	Xavier College Preparatory High School	820 feet (250 meters)
Closest Permanent Residence	Mesquite Tree Drive	340 feet (104 meters)
Reach 4 and Avenue 38		
Closest School	Ronald Reagan Elementary School	0.85 miles (1,370 meters)
Closest Permanent Residence	Grand Oaks Avenue	320 feet (98 meters)
Washington Street Crossing/Del Webb Drainage Work Tasks		
Closest School	Ronald Reagan Elementary School	0.94 miles (1,510 meters)
Closest Permanent Residence	Grand Oaks Avenue	35 feet (10 meters)
Mira Mesa Spoil Site		
Closest School	Ronald Reagan Elementary School	0.31 miles (500 meters)
Closest Permanent Residence	Felice Court	510 feet (155 meters)
Closest Temporary Residence	Palm Springs RV Resort	140 feet (42 meters)

Notes:
1 - Distances determined from nearest edge of the Project site boundaries and receptor site boundaries, with values given in feet being rounded to the nearest 5 feet.
2 - As noted in the Project Description (Section 2.2.2, Construction), to the maximum extent practicable construction-related disturbance, including staging areas and temporary storage areas would be limited to the Project's permanent footprint. Previously disturbed (paved) sites that are located outside of temporary disturbance areas may be used for staging or parking.
3 - Distance from levee construction work.
4 - Distance from Desert Moon and Via Las Palmas construction work.

The distances shown above are for fixed construction areas including the boundary of the construction disturbance area in that construction area. There would be heavily traveled truck travel routes that would be adjacent to several residential areas. These roads would include Washington Street, Varner Road, Cook Street, Monterey Avenue, Ramon Road, Sierra Del Sol, Desert Moon Drive, Via Las Palmas, and Vista De Oro. Trucks would also travel on roads that are on the west and east sides of the Xavier College Preparatory High School (Cook Street and Shadow Valley Drive), the only school located within a quarter mile of the fixed construction areas or construction truck routes, during construction; and trucks will also travel on Shadow Valley Drive east side of the high school to access the sand augmentation area during operation.

3.3.1.2 Greenhouse Gases

Climate Change

While climate change has been a concern since at least 1998, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), efforts devoted to greenhouse gas (GHG) emissions reduction, and climate change research and policy have increased dramatically in recent years.

Global climate change (GCC) is expressed as changes in the average weather of the Earth, as measured by change in wind patterns, storms, precipitation, and temperature. Much scientific research has indicated that the human-related emissions of GHGs above natural levels are likely a significant contributor to GCC.

Because the direct environmental effect of GHG emissions is the increase in global temperatures, which in turn has numerous indirect effects on the environment and humans, the area of influence for GHG impacts associated with the proposed Project would be global. However, those cumulative global impacts would be manifested as impacts on resources and ecosystems in California. Additionally, as this analysis concerns cumulative global impacts, there is no separate cumulative impacts analysis for GCC in Section 5 (Cumulative Effects) of this EIR/EIS.

Regional Setting

The Project is located in the Thousand Palms area of the Coachella Valley in Riverside County, California within the SSAB. In California, CARB is designated as the responsible agency for traditional air quality regulations. In addition, Assembly Bill (AB) 32 vested CARB with regulatory authority for GHGs.

Description of Greenhouse Gases

GHGs are gases that trap heat in the atmosphere and are emitted by natural processes and human activities. Examples of GHGs that are produced both by natural processes and by industry include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The accumulation of GHGs in the atmosphere regulates the Earth's temperature. GHGs have varying amounts of global warming potential (GWP). The GWP is the ability of a gas or aerosol to trap heat in the atmosphere. By convention, CO_2 is assigned a GWP of 1. In comparison, CH_4 has a GWP of 28, which means that it has a global warming effect 28 times greater than CO_2 on an equal-mass basis (IPCC, 2014). To account for their GWP, GHG emissions are often reported as CO_2e (CO_2 equivalent). The CO_2e for a source is calculated by multiplying each GHG emission by its GWP, and then adding the results together to produce a single, combined emission rate representing all GHGs.

3.3.2 Regulatory Framework

The proposed Project includes stationary construction-related emissions, and mobile operations-related emissions, but does not include any permanent stationary emission sources; therefore, there are very few direct air quality regulations that specifically regulate the Project's air quality emission sources. The regulations that do apply, such as fugitive dust regulations and rules for portable equipment, tend to be general and allow multiple means of achieving compliance. Descriptions of the specific and general regulations that apply to the Project are provided below.

3.3.2.1 Air Quality

Federal

The federal Clean Air Act (CAA) of 1970 and its subsequent amendments form the basis for the nation's air pollution control effort. The USEPA is responsible for implementing most aspects of the CAA. Basic elements of the CAA include the establishment of NAAQS for major air pollutants, hazardous air pollutant standards, attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The CAA delegates the enforcement of the federal standards to the states. In California, CARB is responsible for enforcing air pollution regulations. In the Riverside County portion of the SSAB, the SCAQMD has this responsibility.

State Implementation Plan

For areas that do not attain the NAAQS, the CAA requires the preparation of a State Implementation Plan (SIP), detailing how the state will attain and maintain the NAAQS within mandated timeframes. In response to this requirement, the SCAQMD and Southern California Association of Governments (SCAG) have developed air quality management plans (AQMPs).

The SCAQMD and SCAG, in cooperation with CARB and the USEPA, develop AQMPs for the purpose of demonstrating compliance with the NAAQS for non-attainment pollutants. The most recently approved AQMPs are the 2007, 2012, and 2016 AQMPs (SCAQMD, 2021c). New rules and regulations are adopted by SCAQMD as needed to implement the emissions reduction measures identified in the AQMPs. Each AQMP address different pollutants, different attainment timelines, and the different air basins within SCAQMD jurisdiction; and each AQMP does not include updates for all pollutant attainment plans. For the Project site area within the SSAB the applicable AQMPs are the 2007 AQMP for PM10 and the 2016 AQMP for ozone.

General Conformity Rule

For the proposed Project, the issuance of a Clean Water Act Section 404 permit by the Corps is required and is the federal Action triggering the General Conformity Rule. Therefore, the Project's construction and O&M emissions are also evaluated within this context (see Appendix B.2).

Emission Standards for Non-Road Diesel Engines

The USEPA has established a series of cleaner emission standards for new off-road diesel engines culminating in the Tier 4 Final Rule of June 2004. The Tier 1, Tier 2, Tier 3, and Tier 4 standards require compliance with progressively more stringent emission standards. Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category. Tier 2 standards were phased in from 2001 to 2006, and the Tier 3 standards were phased in from 2006 to 2008.

The Tier 4 standards complement the latest 2007 and later on-road, heavy-duty engine standards by requiring 90 percent reductions in DPM and NO_x when compared against current emission levels. The Tier 4 standards were phased in, starting with smaller engines in 2008 with the largest engines being required to meet the standards by 2015.

Non-Road Diesel Fuel Rule

In May 2004, the USEPA set sulfur limits for non-road diesel fuel. Under this rule, sulfur levels in non-road diesel fuel would be limited to 500 ppm starting in 2007 and 15 ppm starting in 2010 (USEPA, 2004), at which time it would be equivalent to sulfur content restrictions of the California Diesel Fuel Regulations (described below).

Emission Standards for On-Road Trucks

To reduce emissions from on-road, heavy-duty diesel trucks, the USEPA established a series of cleaner emission standards for new engines, starting in 1988. These emission standards regulations have been revised over time. The latest effective regulation, the 2007 Heavy-Duty Highway Rule, provides for reductions in PM, NO_x, and non-methane hydrocarbon emissions that were phased in during the model years 2007 through 2010 (USEPA, 2000).

State

California Clean Air Act

In California, CARB is designated as the responsible agency for all air quality regulations. CARB, which became part of the California Environmental Protection Agency (Cal-EPA) in 1991, is responsible for implementing the requirements of the federal CAA, regulating emissions from motor vehicles and consumer products, and implementing the California Clean Air Act of 1988 (CCAA). The CCAA outlines a program to attain the CAAQS for O_3, NO_2, SO_2, and CO by the earliest practical date. Since the CAAQS are often more stringent than the NAAQS, attainment of the CAAQS will require more emission reductions than what is required to demonstrate attainment of the NAAQS. Similar to the federal requirements, the State requirements and compliance dates are based on the severity of the ambient air quality standard violation within a region.

Heavy Duty Diesel Truck Idling Regulation

This CARB rule became effective February 1, 2005 and prohibits heavy-duty diesel trucks from idling for longer than five minutes at a time, unless they are queuing, and provided the queue is located more than 100 feet from any homes or schools (CARB, 2006).

California Diesel Fuel Regulations

In 2004, CARB set limits on the sulfur content of diesel fuel sold in California for use in on-road and off-road motor vehicles (CARB, 2014). Under this rule, sulfur content of diesel fuel was limited to 15 ppm starting in June 2006.

Statewide Portable Equipment Registration Program (PERP)

The PERP establishes a uniform program to regulate portable engines and portable engine-driven equipment units (CARB, 2018). Once registered in the PERP, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts, as long as the equipment is located at a single location for no more than 12 months. There may be construction

equipment that would be required to be PERP registered, such as the concrete batch plant, but there are no known operating emission sources that would be subject to this regulation.

Local

South Coast Air Quality Management District

The SCAQMD is primarily responsible for planning, implementing, and enforcing federal and State ambient standards within the Riverside County portion of the SSAB. As part of its planning responsibilities, SCAQMD prepares AQMPs and Attainment Plans, as necessary, based on the attainment status of the air basins within its jurisdiction. The SCAQMD is also responsible for permitting and controlling stationary source criteria and air toxic pollutants as delegated by the USEPA.

Through the attainment planning process, the SCAQMD develops the SCAQMD Rules and Regulations to regulate sources of air pollution in the Riverside County portion of the SSAB (SCAQMD, 2021b). This Project may include stationary or portable stationary emissions sources that would be subject to SCAQMD air quality permitting regulations; however, those permits would be the responsibility of the construction contractor. No green-waste composting would be done at the Project site. The SCAQMD rules applicable to the proposed Project are listed below.

SCAQMD Regulation II – Permits. This regulation establishes requirements for permits to construction and operate and identifies the type of equipment that require such permits. The concrete batch plant would either require a local air quality permit or be permitted under the CARB PERP program.

SCAQMD Rule 401 – Visible Emissions. This rule prohibits discharge of air contaminants or other materials that are as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, or that obscures an observer's view.

SCAQMD Rule 402 – Nuisance. This rule prohibits discharge of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any such persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property.

SCAQMD Rule 403 – Fugitive Dust. The purpose of this rule is to control the amount of PM entrained in the atmosphere from man-made sources of fugitive dust. The rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area to be visible beyond the emission source's property line. During Project construction, best available control measures identified in the rule would be required to minimize fugitive dust emissions from proposed earth-moving and grading activities. These measures would include site watering, as necessary, to maintain sufficient soil moisture content.

SCAQMD Rule 403.1 – Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources. This rule includes specifications for storage pile stabilization in the Coachella Valley Blowsand Zone, wind monitoring requirements, fugitive dust plan requirements, and recordkeeping requirements. The fugitive dust plan requirements apply to large operations, which is defined as active operations on property that contains 5,000 or more square feet of disturbed surface area. The dust control plan requirement is exempted for operations that are required to submit dust control plans to any city or county government that has adopted a District-approved dust control ordinance.

SCAQMD Regulation XI – Source Specific Standards. This regulation is composed of several dozen individual rules, most of which are not applicable to this Project. Specific rules that may be applicable include:

- Rule 1133.1 – Chipping and Grinding Facilities. This rule would apply to the vegetation chipping proposed to handle the cleared vegetation. This Project would fall under exemption (f)(2) that would limit the rule requirements to compliance with part (d)(1), which does not allow the receipt of food waste. Food waste is not proposed to be accepted as part of the chipping operations.
- Rule 1166 – Volatile Organic Compound Emissions from Decontamination of Soil. This regulation would only be applicable in the unlikely event that contaminated soils are discovered during Project excavation work.

Riverside County

The Riverside County General Plan Air Quality Element (Riverside County, 2018) includes policies to reduce PM from construction and a result of one of the polices was the enactment of County Ordinance 742 and 742.1, which together establish minimum requirements to control fugitive dust emissions from construction and demolition (Riverside County, 2004). This ordinance is SCAQMD approved, so the dust control plan required for this Project would be reviewed and approved by the County and not SCAQMD.

Consistency

Table 3.3-6 provides a list of project applicable County General Plan Air Quality Element policies and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.3-6. Consistency with County of Riverside General Plan Policies – Air Quality Element

Policy	Consistency	Explanation
Policy AQ 4.6: Stationary source compliance with SCAQMD rules and control measures.	Yes	Any temporary stationary sources used during Project construction such as concrete batching equipment would comply with applicable air district rules and regulations.
Policy AQ 4.9: Comply with SCAQMD Rules 403 and 403.1.	Yes	The Project would comply with SCAQMD Rule 403.1, including the preparation of and implementing a fugitive dust control plan.
Policy AQ 5.1: Reduce solid waste generation through source reduction and recycling.	Yes	The Project would reuse excavated materials, direct recycle, and will recycle other construction wastes to the extent feasible.

There are many other Air Quality Element policies that could indirectly affect the Project, such as policies directed towards non-project specific countywide air quality improvement measures. The proposed Project's construction and operation would be consistent with the General Plan's Air Quality Element.

The Western Coachella Valley Area Plan does not include any additional air quality policies (Riverside County, 2021). Please see Section 4.3 for a discussion of the Project's consistency with the applicable air quality plan and the Riverside County General Plan.

3.3.2.2 Greenhouse Gases

All levels of government have some responsibility for the protection of air quality, and each level (federal, State, and regional/local) has specific responsibilities relating to air quality regulation. Regulation of GHGs is a relatively new component of air quality. Several legislative actions have been adopted to regulate GHGs on a federal, State, and local level.

Federal

Massachusetts v. EPA

In April 2007, the U.S. Supreme Court held that GHG emissions are pollutants within the meaning of the CAA. In reaching its decision, the court also acknowledged that climate change results, in part, from anthropogenic causes. (*Massachusetts et al. Environmental Protection Agency* 549 U.S. 497, 2007). The Supreme Court's ruling paved the way for the regulation of GHG emissions by USEPA under the CAA.

Clean Air Act

The federal CAA of 1970 and its subsequent amendments form the basis for the nation's air pollution control effort. The USEPA is responsible for implementing most aspects of the CAA. Under the provisions of the CAA to protect public health and welfare, the USEPA has the authority to regulate GHGs, should a finding be made that GHGs have the potential for adverse impacts.

In response to the Supreme Court decision on December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** That the current and projected concentrations of the GHGs in the atmosphere threaten the public health and welfare of current and future generations, and
- **Cause or Contribute Finding:** That the combined emissions of GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

USEPA has enacted a number of regulations and other environmental rules regarding GHG emissions, including:

- Mandatory GHG Reporting,
- GHG Tailoring Rule for PSD Permits,
- GHG Vehicle Emissions Standards,
- Corporate Average Fuel Economy Standards, and
- Renewables Fuel Standard.

None of these federal regulations are specifically relevant to the construction or operation of the proposed Project.

State

California is one of several states that have set GHG emission targets. Several Executive Orders and AB 32, the California Global Warming Solutions Act of 2006, have identified future GHG emissions reductions targets increasing over time to a goal of complete statewide carbon neutrality by 2045.

AB 32 – California Global Warming Solutions Act of 2006

AB 32 was signed into law by Governor Schwarzenegger on September 27, 2006 and is the first law to comprehensively limit GHG emissions at the state level. The intent of AB 32 is to reduce California GHG emissions to 1990 levels by 2020. AB 32 instructs CARB to adopt regulations that will reduce emissions from significant sources of GHG and establish a mandatory GHG reporting and verification program by January 1, 2008. AB 32 requires CARB to adopt GHG emission limits and emission reduction measures by January 1, 2011, both of which became effective on January 1, 2012. AB 32 does not identify a significance level of GHG for CEQA purposes, nor has CARB adopted such a significance threshold.

In accordance with AB 32, CARB approved the Climate Change Scoping Plan (Scoping Plan), last updated in 2017 (CARB, 2017), which outlines California's strategy for achieving the 2020 GHG emissions limit outlined under the law. The Scoping Plan includes recommendations for reducing GHG emissions from most sectors of the California economy, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 cost of implementation fee regulation to fund the program. None of these regulations or programs would directly impact the Project; however, certain regulations like the Low Carbon Fuel Standard may affect the GHG emissions from the fuel used by the Project. As of December 2021, there are plans underway to develop a 2022 Update to the Climate Change Scoping Plan (CARB, 2021d).

Executive Orders

Several Executive Orders signed by Governors Schwarzenegger, Brown, and Newsom have called for reductions in GHG emissions. Executive Order S-3-05, signed by Governor Schwarzenegger in 2005, calls for a reduction in GHG emissions to 1990 levels by 2020 and for an 80 percent reduction in GHG emissions by 2050. Executive Order B-55-19, signed by Governor Brown in 2018, calls on the state to achieve carbon neutrality by 2045. None of these executive orders would directly affect the construction or operation of the Project; however, regulations enacted to achieve the goals of these executive orders may indirectly affect the Project in terms of the amount of renewable fuel it uses or the number of electric vehicles and off-road equipment that are used during future O&M work.

California Senate Bill 97

Senate Bill 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directs the Governor's Office of Planning and Research (OPR) to develop draft CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions" by July 1, 2009 and directs the California Natural Resources Agency to certify and adopt the CEQA guidelines by January 1, 2010.

The OPR published a technical advisory on CEQA and Climate Change on June 19, 2008. The guidance did not include a suggested threshold, but stated that the OPR has asked CARB to, "recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of greenhouse gas emissions throughout the state." The OPR does recommend that CEQA analyses include the following components:

- Identify Greenhouse Gas Emissions
- Determine Significance
- Mitigate Impacts

On December 30, 2009, the California Natural Resources Agency adopted amendments to the CEQA Guidelines including GHG/Climate Change analysis guidelines. According to the California Natural Resources Agency (CNRA, 2009), "due to the global nature of GHG emissions and their potential effects, GHG emissions will typically be addressed in a cumulative impacts analysis." Two GHG CEQA checklist items were included as part of the CEQA Guidelines amendment; they are discussed further in Section 4.3.

As discussed in Section 15064.4 of the CEQA Guidelines, the determination of the significance of GHG emissions calls for a careful judgment by the lead agency, consistent with the provisions in Section 15064. Section 15064.4 further provides that a lead agency should make a good-faith effort, to the extent possible and based on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions

resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

1. Use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or
2. Rely on a qualitative analysis or performance-based standards.

Section 15064.4 also advises a lead agency to consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Local

South Coast Air Quality Management District

To date, the SCAQMD has developed two regulations regarding GHG emissions (SCAQMD, 2021b). Those regulations are:

SCAQMD Rule 2701 – SoCal Climate Solutions Exchange. This rule establishes a voluntary program to encourage, quantify, and certify voluntary high-quality certified GHG emission reductions in the district.

SCAQMD Rule 2702 – Greenhouse Gas Reduction Program. This program will fund projects through contracts in response to requests for proposals or purchase GHG emission reductions.

These two SCAQMD rules are not applicable to the proposed Project.

Riverside County

Riverside County has an approved climate action plan that was last updated in 2019 (Riverside County, 2019). The discussion of the applicable requirements of this plan is provided in Section 4.3.

Consistency

Please see Section 4.3 for a discussion of the consistency with GHG emissions reductions regulations, policies, and plans.

3.4 Topography, Geology, and Soils

This section describes baseline environmental conditions in the Project study area relative to topography, geology, and soils. The issue area of mineral resources is also addressed in this section.

3.4.1 Environmental Baseline

3.4.1.1 Topography

The Project is located in the Coachella Valley of southeastern Riverside County in southern California. The Coachella Valley averages about six miles in width and slopes gradually for approximately 40 miles between the San Gorgonio Pass and the Salton Sea. The valley's defining mountain ranges, the San Jacinto and Santa Rosa Mountains to the southwest and the Little San Bernardino Mountains to the northeast, are composed primarily of granitic and metamorphic rock. Over the past three million years, erosion of the mountains has filled the valley floor with alluvial, colluvial, and aeolian (wind-distributed) materials which is estimated to be more than 1,000 feet deep near San Gorgonio Pass, increasing to 14,000 feet in depth near the southern part of the valley. Elevations within the study area range from 1,614 feet above mean sea level (amsl) at Edom Hill near the northwestern end of the Indio Hills to about 30 feet above sea level at the southern end of the study area near Indio (USACE, 2000).

3.4.1.2 Geology

Numerous earthquake faults traverse the study area and surrounding region. The major fault zone is associated with the San Andreas Fault, which extends the entire length of the Whitewater River basin and beyond. Just east of the study area, near Biskra Palms, the San Andreas branches into two major segments. The North Branch San Andreas Fault, also known as Mission Creek Fault, runs from Biskra Palms to Thousand Palms Oasis, then along the northerly edge of the Indio Hills. The South Branch San Andreas Fault, sometimes referred to as part of the Banning fault zone, runs through the study area along the southerly edge of the Indio Hills. Recorded seismic events in the study area are presented below, in Table 3.4-1. The faults located in the study area are presented below in Figure 3.4-1 (Fault Zones).

Table 3.4-1. Strong Motion Seismic Events Recorded in the Coachella Valley Area

Date	Epicenter Location	Magnitude (Richter)
04/13/2021	Indio	3.5
09/25/2020	Desert Hot Springs	3.6
04/06/2020	North Shore	3.5
11/10/2019	Indio	3.5
05/30/2018	Thousand Palms	3.8
04/22/2018	Thousand Palms	3.9
05/29/2015	Indio	3.7
12/04/2014	Morongo Valley	3.6
07/12/2012	Yucca Valley	3.9
01/07/2012	Indio	3.5
08/06/2010	Desert Hot Springs	4.1
07/07/2010	Borrego Springs	5.4
06/12/2010	Borrego Springs	4.9
01/11/2010	Banning	4.3
04/30/2008	Borrego Springs	4.2

Table 3.4-1. Strong Motion Seismic Events Recorded in the Coachella Valley Area

Date	Epicenter Location	Magnitude (Richter)
06/01/2007	Indio	4.2
12/23/2006	Coachella	4.0
06/12/2005	Anza	5.2
01/15/2005	Desert Hot Springs	4.3
01/02/2002	Borrego Springs	4.2
10/30/2001	Anza	5.1
10/16/1999	Hector Mine	7.1
06/28/1992	Big Bear	6.4
06/28/1992	Landers	7.3
04/22/1992	Joshua Tree	6.1
11/24/1987	Superstition Hills	6.6
11/23/1987	Elmore Ranch	6.2
07/08/1986	North Palm Springs	5.9
04/08/1968	Borrego Mountains	6.5
03/19/1954	San Jacinto	6.4
12/04/1948	Desert Hot Springs	6.0
10/21/1942	Fish Creek Mountains	6.6
03/25/1937	Terwilliger Valley	6.0
04/21/1918	San Jacinto	6.8
12/25/1899	San Jacinto	6.5

Source: CESMD, 2021; Terra Nova, 2003.

3.4.1.3 Soils

Soil types in the study area are identified in the "Soil Survey of Riverside County, California, Coachella Valley Area" prepared by the USDA Soil Conservation Service and presented below in Figure 3.4-2 (Soils Map). The dominant soils present on the alluvial fans of the Indio Hills are mostly gravelly sand (Carsitas: CdC), cobbly sand (Carsitas: ChC), and fine sand (Carsitas: CkB). The soils are high in soluble salts and low in organic matter. It is likely that the alluvial fans below the Indio Hills were at least partially formed from historical deposition of sediments prior to the uplift of the hills (SLA, 1997). In the dune areas south of Ramon Road, the soils surface is composed of fine sands (Myoma: MaD) (USACE, 2000). The soil types in the study area are shown in Figure 3.4-2. Figure 3.4-3 (Liquefaction) illustrates the moderate potential for liquefaction in the region.

Weathering of granitic and metamorphic rock in the mountains surrounding the study area has produced large quantities of sand-sized and finer sediment composed primarily of quartz, biotite, and feldspar. Frequent, strong winds blow from the northwest towards the southeast through the San Gorgonio Pass and the Project area, distributing these fine-grained materials throughout large areas of the northern Coachella Valley, and forming dune complexes and sand sheets including in the Coachella Valley Preserve. Sand movement occurs primarily along a wind corridor, which runs in a northwest-to-southeast direction between the Indio Hills and the Whitewater River (USACE, 2000).

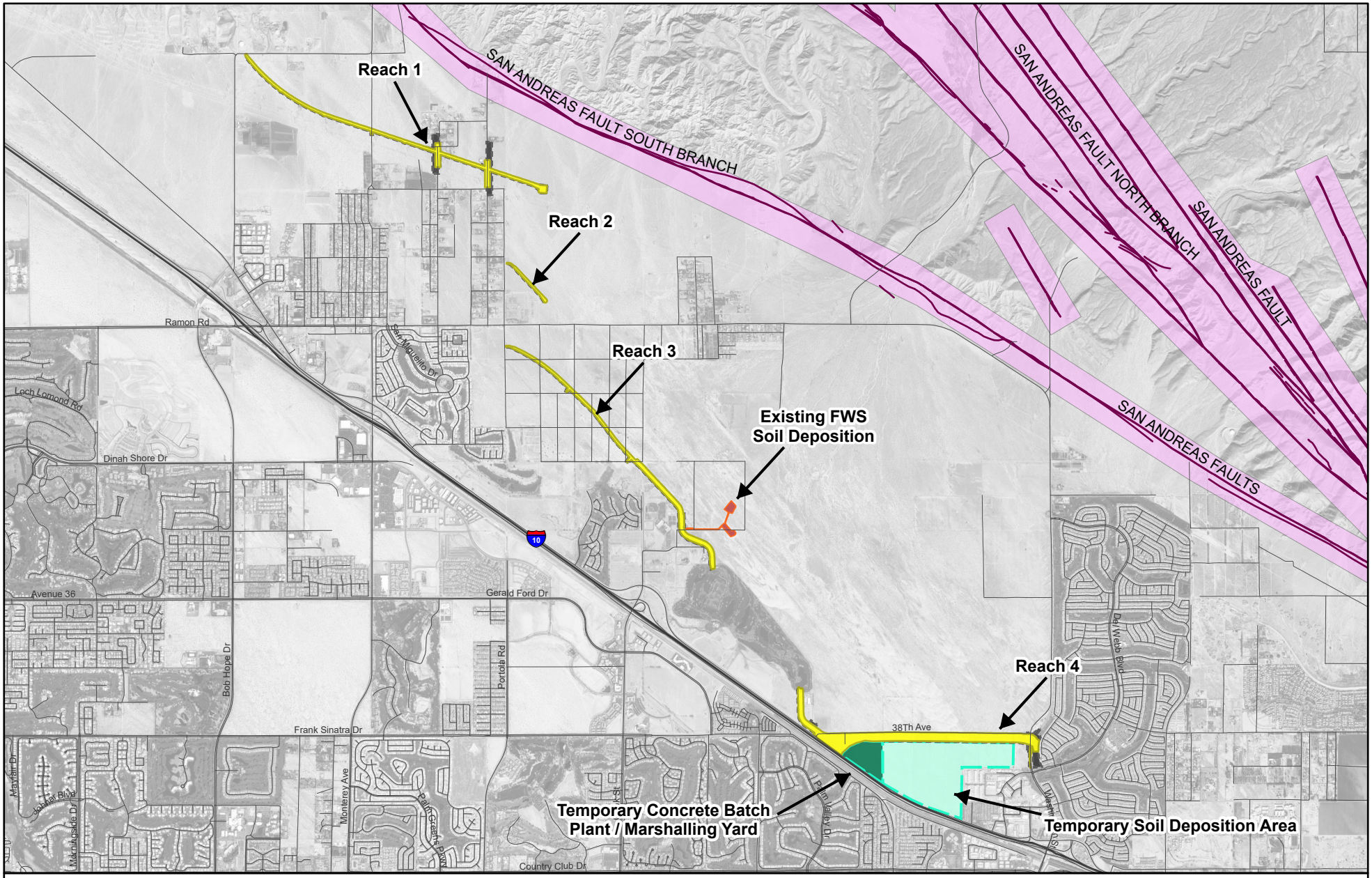


Figure 3.4-1

Fault Zones

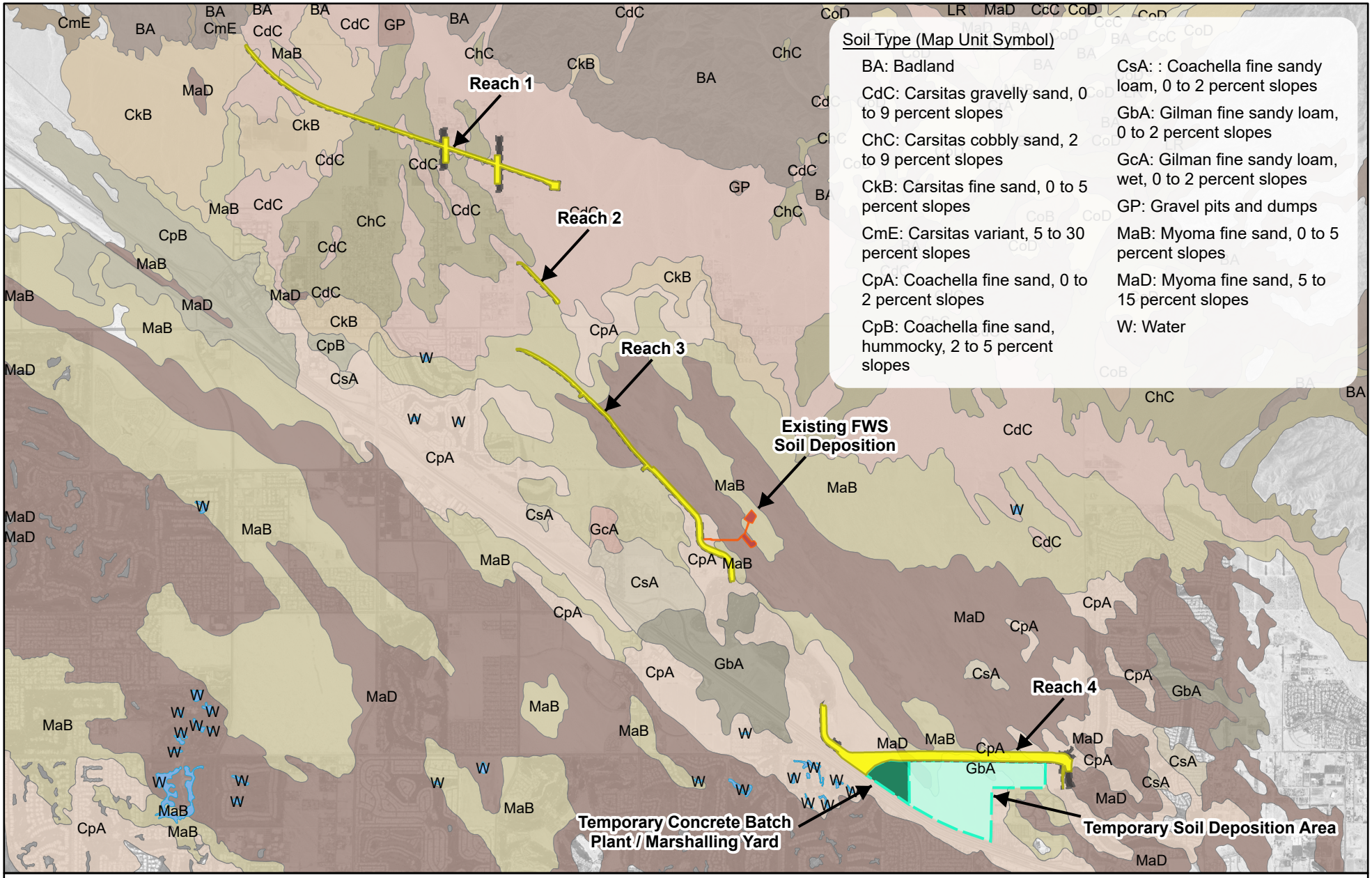
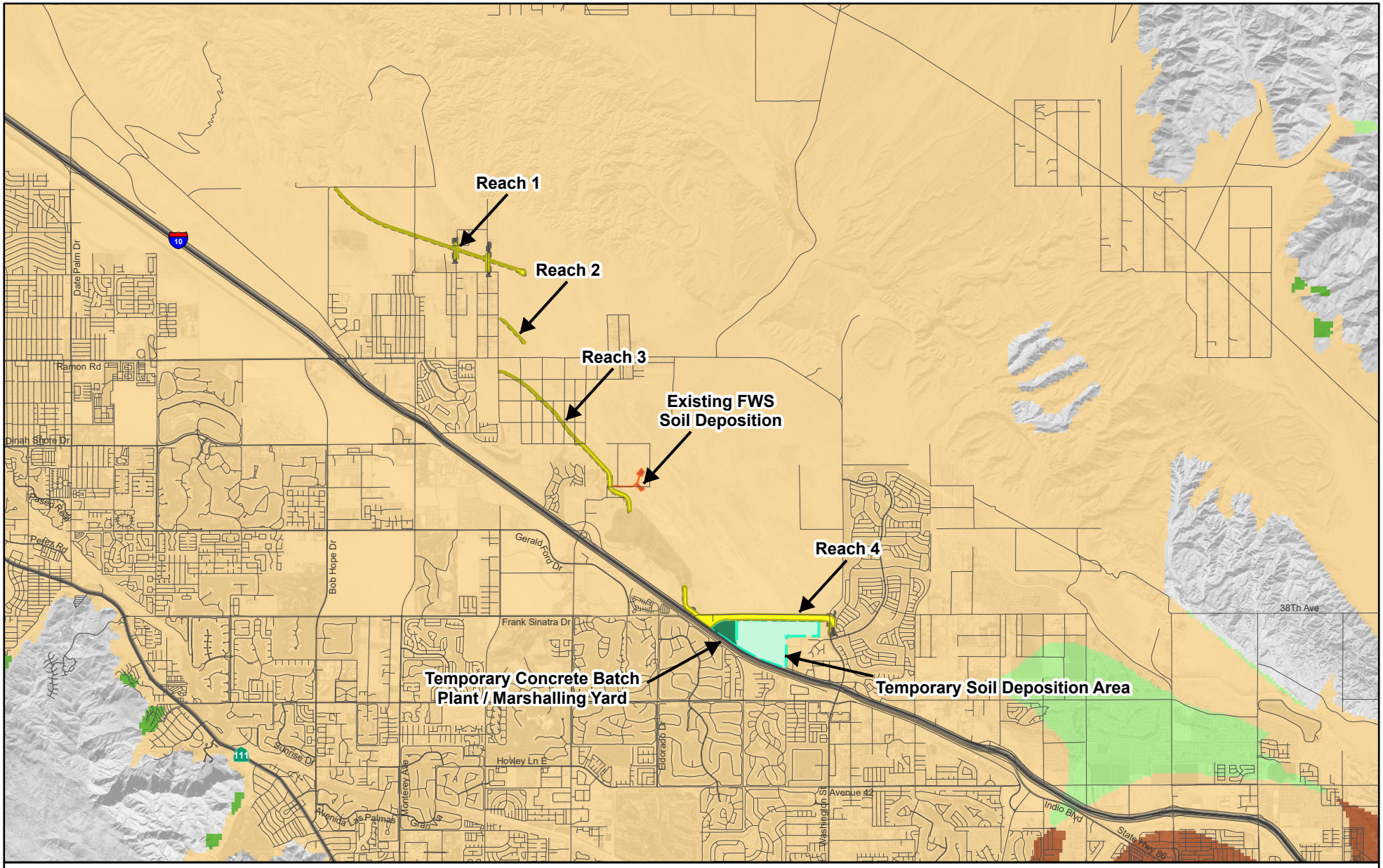


Figure 3.4-2

Soils



Source: County of Riverside

0 2 Miles

Permanent Impact Area
Temporary Impact Area
Temporary Soil Deposition Area
Temporary Concrete Batch Plant/Marshalling Yard
Existing FWS Soil Deposition

Liquifaction Susceptibility
High
Moderate
Low
Very low

Figure 3.4-3

Liquifaction Susceptibility

3.4.1.4 Minerals

Baseline information on mineral resources was collected from the U.S. Geological Survey (USGS) and the Mineral Resources Data System (MRDS), among other sources, as cited below. The study area for minerals includes lands that may be affected directly and/or indirectly by construction and operation of the Project.

Mineral resources found throughout Riverside County include gold, silver, asbestos, sand, gravel, tungsten, bismuth, copper, lead, iron, tin, granite, clay feldspar, molybdenum, manganese, titanium, gypsum, limestone, salt, fluorine, and gemstones. In addition, industrial materials found throughout the county include clay, limestone, salt, lead, tin, iron, manganese, and sand. The managed use of valuable mineral deposits is important for regional economic stability. It is also important to ensure that adequate deposits remain for future generations. As a function of geologic factors, mining operations are restricted to specific suitable areas.

The MRDS provides data to describe metallic and nonmetallic mineral resources, including deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. The MRDS online database was reviewed for mineral resource sites located within five miles of the proposed Project, and records of surface mines, closed mines, occurrences/prospects, and unknown/undefined resources in this area. These are provided in Table 3.4-2. A five-mile buffer around all Project features was determined to be an appropriate study area for mineral resources because it captures all mineral resources sites that could potentially be affected by the proposed Project, as described in Section 4.4. Mineral resources utilized by the proposed Project would be limited to sand and gravel.

Table 3.4-2. Mineral Resources Extraction Sites within Five Miles of the Project

Name	Development Status	Operation Type	Commodities	Proximity to Project (miles)	Proximity - Description	Development Status
Unnamed	Past Producer	Surface	Sand and Gravel, Construction	0.2	N/A	Past Producer
Rio Del Sol Pit	Past Producer	Surface	Sand and Gravel, Construction	0.56	N/A	Past Producer
Thousand Palms Community Pit	Producer	Surface	Sand and Gravel, Construction	0.61	N/A	Producer
A-1 Thousand Palms Pit	Past Producer	Surface	Sand and Gravel, Construction	0.86	N/A	Past Producer
Yeager Indio Hills Deposit	Past Producer	Surface	Sand and Gravel, Construction	0.9	N/A	Past Producer
Hicks-Allred Indio Hills Deposit	Past Producer	Surface	Sand and Gravel, Construction	0.91	N/A	Past Producer
Gravel Pit	Past Producer	Surface	Sand and Gravel, Construction	1.2	N/A	Past Producer
Thousand Palms Deposit	Past Producer	Surface	Sand and Gravel, Construction	1.33	N/A	Past Producer

Table 3.4-2. Mineral Resources Extraction Sites within Five Miles of the Project

Name	Development Status	Operation Type	Commodities	Proximity to Project (miles)	Proximity - Description	Development Status
Southwest Pit	Past Producer	Surface	Sand and Gravel, Construction	1.79	N/A	Past Producer
Garnett Pitt and Mill	Past Producer	Surface	Sand and Gravel, Construction	3.61	N/A	Past Producer
Massey Hills Indio hills Deposit	Past Producer	Surface	Sand and Gravel, Construction	3.62	N/A	Past Producer
Indio Rock Pit	Past Producer	Surface	Sand and Gravel, Construction	3.64	N/A	Past Producer
Flat Top Mountain Deposit	Past Producer	Surface	Sand and Gravel, Construction	3.65	N/A	Past Producer

Source: MRDS, 2021.

The MRDS data provided in Table 3.4-2 indicates that there are numerous closed mineral resources and operations in the vicinity of the proposed Project site, identified as "Past Producer", and that all of these occurrences are characterized as "Sand and Gravel, Construction". Past producing sites are not actively extracting mineral resources, but this does not exclude the sites from being used for resource extraction again in the future, depending upon site-specific conditions. According to the MRDS, there is one active producer of sand and gravel resources located 0.61 mile to the south of Reach 1. The potential for the proposed Project to affect this site, as well as others identified in Table 3.4-2, is addressed in Section 4.4.

In addition to USGS MRDS data on mineral resource locations, the California Department of Conservation identifies areas of known and likely mineral deposits and classifies these areas into Mineral Resource Zones (MRZ). There are four major divisions ranging from "Areas of Identified Mineral Resource Significance" to "Areas of No Known Mineral Resource Significance". The divisions between these major "knowledge" categories marks the divisions between areas classified MRZ-2, MRZ-3, MRZ-4, and MRZ-1; wherein lands classified MRZ-2 are areas that contain identified mineral resources, lands classified MRZ-3 are areas of undetermined mineral resource significance, lands classified MRZ-4 are areas of unknown mineral resource potential, and lands classified MRZ-1 are areas where geologic information indicates no significant mineral deposits are present.

At present, Riverside County is classified into a total of roughly 83,267 acres of MRZ-1, 71,270 acres of MRZ-2 (including 22,114 acres MRZ-2a and 7,428 acres MRZ-2b), 1,336,723 acres of MRZ-3 and 1,751,892 acres of MRZ-4. Within the MRZ-2 class, approximately 11,853 acres have been designated "regionally significant" by the State Mining and Geology Board (SMGB). In addition, roughly 6,371 acres within the Palm Springs region have been approved by the SMGB for designation as being of regional significance and are currently awaiting rulemaking to codify the decision. There are no sites within Riverside County designated as "locally important mineral recovery sites" (Riverside County, 2015).

3.4.2 Regulatory Framework

Issues related to geological resources are regulated by a combination of State and local agencies. Regulations for geology, soils, and topography primarily address potential hazards associated with

earthquakes, as summarized below. The Project does not include construction of any buildings, so building-related policies are not listed below.

Federal

Mining and Mineral Policy Act of 1970

The Mining and Mineral Policy Act of 1970 is intended to foster and encourage private enterprise in the development of a stable domestic minerals industry and the orderly and economic development of domestic mineral resources. This statute established modern Federal policy regarding mineral resources in the United States, and it encompasses both hard rock mining and oil and gas production and established modern Federal policy regarding mineral resources in the United States. The Act applies to all minerals, including sand and gravel, geothermal, coal, and oil and gas that are subject to Department of Interior jurisdiction.

State

Seismic Hazards Act

The Seismic Hazards Act of 1990 requires the California Department of Conservation (DOC) to identify and map the state's most prominent seismic hazards in order to help avoid damage resulting from earthquakes. The Seismic Hazards Mapping Act (SHMA) addresses nonsurface fault rupture earthquake hazards, including strong groundshaking, liquefaction and seismically induced landslides. The California Geological Survey (CGS) is the principal state agency charged with implementing the SHMA. The law directs the CGS to provide local governments with seismic hazard zone maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures. The CGS delineated seismic hazard zones are referred to as "zones of required investigation" and per the SHMA require site-specific geotechnical hazard investigations when construction projects fall within these areas. SHMA's goal is to minimize loss of life and property by identifying and mitigating seismic hazards.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code [PRC] § 2621 et seq.) was enacted by the State of California in 1971 to mitigate the hazard of surface faulting to structures planned for human occupancy and to other critical structures, such as levees. Regulatory zones established by the State (known as Earthquake Fault Zones [EFZs]) are used by government agencies during planning and review processes for new construction. The CGS produces maps delineating EFZs, including those within the Project Study Area. These maps are incorporated into the evaluation of potential surface fault rupture in the impact analysis discussion in Section 4.4.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (PRC, § 2690 et seq.) was enacted by the State of California in 1990 to protect public safety from the effects of strong ground shaking, liquefaction, landslides, other ground failure, and other hazards caused by earthquakes. Discussion of potential hazards, as required under this Act, is presented in Section 4.4.

California Surface Mining and Reclamation Act (SMARA)

The California SMARA of 1975 mandates MRZ classifications by the State Geologist in order to help identify and protect mineral resources in areas within the State subject to urban expansion or other irreversible

land uses that would preclude mineral extraction. SMARA also allows the State Mining and Geology Board to designate lands containing mineral deposits of regional or statewide significance after receiving classification information from the State Geologist. The law provides for significant mineral resources to be recognized and considered before land use decisions are made that compromise the availability of these resources.

Local

Riverside County General Plan, Safety Element

The County of Riverside General Plan Safety Element has the following geology and soils related policies relevant to the proposed Project (Riverside County, 2021):

- **Policy S 2.1** Minimize fault rupture hazards through enforcement of Alquist-Priolo Earthquake Fault Zoning Act provisions and the following policies:

  a. Require geologic studies or analyses for critical structures, and lifeline, high-occupancy, schools, and high-risk structures, within 0.5 miles of all Quaternary to historic faults shown on the Earthquake Fault Studies Zones map. The County geologist shall review and make recommendations based on the results to reduce the potential risk.

  b. Request geologic trenching studies within all designated Earthquake Fault Studies Zones, unless adequate evidence, as determined and accepted by the County Engineering Geologist, is presented. The County of Riverside may require geologic trenching of non-zoned faults for especially critical or vulnerable structures or lifelines.

  c. Require that infrastructure systems, such as energy, communications, and transportation infrastructure be designed to resist, without failure to the extent feasible, their crossing of a fault, should fault rupture occur.

  d. Support efforts by the California Department of Conservation, Division of Mining and Geology to develop geologic and engineering solutions in areas of disseminated ground deformation due to faulting, in those areas where a through-going fault cannot be reliably located.

  e. Encourage and support efforts by the geologic research community to define better the locations and risks of Riverside County faults. Such efforts could include data sharing and database development with regional entities, other local governments, private organizations, utility agencies or companies, and local universities.

- **Policy S 2.2** Require geological and geotechnical investigations in areas with potential for earthquake-induced liquefaction, landsliding or settlement, for any building proposed for human occupancy and any structure whose damage would cause harm, except for accessory structures/buildings, as determined by County officials. Any studies or surveys should be prepared/completed by a state-licensed professional.

- **Policy S 2.3** Require that a State-licensed professional investigate the potential for liquefaction in areas designated in the General Plan Figure S-3 as underlain by "Susceptible Sediments" and "Shallow Ground Water" for all proposal critical facilities, except for accessory buildings.

- **Policy S 2.4** Request that engineered slopes be designed to resist seismically-induced failure as appropriate. For lower-risk projects, this may include requiring slope design to be based on pseudo-static stability analyses using soil engineering parameters that are established on a site-specific basis. For higher-risk projects, appropriate standards may include requiring the stability analyses to factor in

the intensity of expected ground-shaking, using a Newmark-type deformation analysis or other analyses as appropriate.

- **Policy S 2.5** Request that cut-and-fill transition lots appropriately mitigate the potential of seismically-induced differential settlement, including through using over-excavation or other techniques as required by geotechnical, soils, and grading requirements.
- **Policy S 2.6** Request structures in liquefaction and slope instability hazard zones to mitigate the potential of seismically-induced differential settlement through appropriate techniques as determined by geotechnical studies, including a 100-percent maximum variation of fill depths as warranted.
- **Policy S 2.7** Encourage research into new foundation design systems that better resist the County's climatic, geotechnical, and geological conditions.
- **Policy S 2.8** Request the following in landslide potential hazard management zones, or when deemed necessary by the California Environmental Quality Act, prior to the issuance of development permits or approval of project designs:

  a. Preliminary geotechnical and geologic investigations, including certification regarding the stability of the site against adverse effects of earthquake and subsidence.

  b. Evaluations of site stability, including any possible impact on adjacent properties.

  c. Consultant reports, investigations, and design recommendations required for grading permits, building permits, and subdivision applications, shall be prepared by State-licensed professionals.
- **Policy S 2.9** Require new development in areas prone to geologic hazards (e.g., landslides, steep topography, slope instability) to be adequately mitigated against these hazards, as feasible. Any development in hillside areas should prepare drainage plans to direct runoff and drainage away from potentially unstable slopes. new developments should incorporate hillside design techniques and features to mitigate and support slope stability.
- **Policy S 2.10** Identify and request mitigation of on-site slope instability, debris flow, and erosion hazards on lots undergoing substantial improvements, particularly during the entitlement process.
- **Policy S 2.11**Request grading plans, environmental assessments, engineering and geologic technical reports, irrigation and landscaping plans, including ecological restoration and revegetation plans, as appropriate, in order to assure the adequate demonstration of a projects ability to mitigate the potential impacts of slope and erosion hazards and loss of native vegetation.
- **Policy S 2.15** Require geotechnical studies within documented subsidence zones, as well as zones that may be susceptible to subsidence, as identified in Figure S-7 and the Technical Background Report, prior to the issuance of development permits. Within the documented subsidence zones of the Coachella, San Jacinto, and Elsinore valleys, the studies must address the potential for reactivation of these zones, consider the potential impact on the project, and provide adequate and acceptable mitigation measures.

Consistency

Table 3.4-3 provides a list of county plans and policies that are applicable to topography, geology, soils, and minerals, and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.4-3. Consistency with Applicable Plans and Policies – Topography, Geology, Soils and Minerals

Plan/Policy	Consistency	Explanation
Riverside County General Plan, Safety Element – Policy S-2.1: Minimize fault rupture hazards through enforcement of Alquist-Priolo Earthquake Fault Zoning Act provisions and policies.	Yes	As shown in Figure 3.4-1, the proposed Project does not overlay any mapped Alquist-Priolo Fault Zone nor does any fault trend towards the proposed Project.
Riverside County General Plan, Safety Element – Policy S-2.2: Require geological and geotechnical investigations in areas with potential for unstable soils.	Yes	The Project would include the required geological and geotechnical investigations, which would be conducted by licensed professionals.
Riverside County General Plan, Safety Element – Policy S-2.3: Require that a State-licensed professional investigate the potential for liquefaction.	Yes	The Project would include the required geological and geotechnical investigations, which would be conducted by licensed professionals.
Riverside County General Plan, Safety Element – Policy S-2.4: Require that engineered slopes be designed to resist seismically induced failure.	Yes	The Project would include implementation of Environmental Commitment G-1 (Design and Inspect for Major Seismic Event) which would include engineering slopes to resist failure.
Riverside County General Plan, Safety Element – Policy S-2.5: Require that cut and fill transition lots be over-excavated.	Yes	Design and construction of the Project would be conducted in accordance with all applicable Riverside County building codes.
Riverside County General Plan, Safety Element – Policy S-2.6: Require a 100% maximum variation of fill depths beneath	Yes	Design and construction of the Project would be conducted in accordance with all applicable Riverside County building codes.
Riverside County General Plan, Safety Element – Policy S-2.7: Encourage research into new foundation design systems.	Yes	Design and construction of the Project would be conducted in accordance with all applicable Riverside County building codes.
Riverside County General Plan, Safety Element – Policy S-2.8: Procedures for work in landslide potential hazard management zones and require certification regarding stability of the site.	Yes	Design and construction of the Project would be conducted in accordance with all applicable Riverside County building codes and work practices.
Riverside County General Plan, Safety Element – Policy S-2.9: Adequate mitigation of potential impacts from erosion.	Yes	Construction of the proposed Project would require preparation of a SWPPP which would include implementation of industry standard best management practices (BMPs) for erosion control and off-site sediment movement.
Riverside County General Plan, Safety Element – Policy S-2.10: Identify and encourage mitigation of onsite and offsite slope instability.	Yes	Design and construction of the Project would be conducted in accordance with all applicable Riverside County building codes and permit requirements.
Riverside County General Plan, Safety Element – Policy S-2.11: Plan Requirements.	Yes	Design and construction of the Project would be conducted in accordance with all applicable Riverside County building codes.
Riverside County General Plan, Safety Element – Policy S-2.15: Require geotechnical studies within documented subsidence zones.	Yes	The Project would include the required geological and geotechnical investigations, which would be conducted by licensed professionals.

3.5 Sand Migration

3.5.1 Environmental Baseline

This section describes the baseline sand migration conditions in the Project area. For the purposes of describing, assessing, and analyzing sand migration, the "Project site" is defined as all permanent and temporary impact areas associated with construction and operation and maintenance of the Project. The "Project area" includes all portions of the Project site and the surrounding areas that may be impacted by the Project, including sand source, sand transport, and sand deposition areas.

3.5.1.1 Regional Setting and Background

The proposed Project is in the Thousand Palms area of the northern Coachella Valley in Riverside County, California. The Coachella Valley is defined by the San Jacinto and Santa Rosa Mountains to the southwest and the Little San Bernardino Mountains to the northeast. The valley slopes gradually from the San Gorgonio Pass toward the Salton Sea for about 40 miles. The Whitewater River is the main drainage course in the Coachella Valley, originating on the southern slopes of the San Bernardino Mountains and flowing in a southeasterly direction through the valley to the Salton Sea (USACE, 2000).

The headwaters to the Whitewater River are located within the San Bernardino Mountains on Mount San Gorgonio, to the north and west of the Coachella Valley. As the Whitewater River flows to the southeast, it is met with ephemeral stream flows that originate in the Little San Bernardino Mountains, the San Jacinto Mountains, and the Santa Rosa Mountains. These ephemeral streams form coalescing alluvial fans that are characteristic of the Coachella Valley. Most of the sand and sediment that is deposited within the Coachella Valley is a result of this fluvial system (USGS, 2002).

The Project study area includes a large portion of the Coachella Valley Preserve, which protects a sand dune complex that provides habitat for the Coachella Valley fringe-toed lizard and other special status species. The sand dunes and sand fields within and west of the Preserve are part of a larger, dynamic ecosystem, encompassing much of the study area. Sand is transported by wind (aeolian transport) and water (fluvial transport) from Long Canyon, Indio Hills, Thousand Palms Canyon, and tributary alluvial fans to the Preserve, and eventually out of the study area, in a recurring cycle of sand migration, deposition, and erosion. Physical elements contributing to or affecting this movement of sand include grain size, topographic features, hydrologic and hydraulic parameters, wind speed and direction, and urban and agricultural development (USACE, 2000).

Fluvial and aeolian transport systems work in conjunction to move and deposit sediment in the region. Fluvial transport deposits sand and sediment from the Indio Hills in alluvial fans to the north and northwest of the Project area. Aeolian transport occurs, as strong prevailing winds move the sand to the southeast where it is deposited in the Thousand Palms Conservation Area and Coachella Valley Preserve (including the Coachella Valley National Wildlife Refuge), creating sand dunes and sand fields (see Figure 3.5-1, Sand Source and Transport Areas). The deposited sand maintains and replenishes habitat for endemic sand-dependent plant and wildlife species such as the Coachella Valley fringe-toed lizard, a federally listed threatened species and state-listed endangered species, and the Coachella Valley milk-vetch, a federally listed endangered species (see Section 3.6 Biological Resources).

Previous sand migration analyses, including a Lancaster et al. (1993) investigation of historic and recent aerial photographs showed that sand accumulates in the southern portion of the Preserve, from Ramon Road to Washington, with dune complexes forming in linear, northwest-southeast trends, parallel to the predominant wind direction. Dune complexes are surrounded and separated by regions of undulating

sand sheets and "blow outs." Significant changes in the form, location, and size of these aeolian deposits have occurred over the years, with areas characterized by dune-ridges increasing from 1939 to 1953, and generally declining thereafter. From 1953 to 1992, the area covered by both sand sheets and dune-ridges was reduced by more than 78 percent and 22 percent, respectively. Trailing margins of dune complexes were also determined to be moving away from alluvial fan areas, suggesting that large quantities of aeolian sediment were no longer being added to the features (USACE, 2000).

Lancaster (2015) found there are two major alluvial fan systems that have historically provided sand for aeolian transport to the Preserve. These include the Gravel Pit Wash alluvial fan and the Thousand Palms Canyon alluvial fan. Between these two are several smaller alluvial fans. Lancaster (2015) conducted a review of the existing sand studies (USGS, 2002; SLA, 1996; SLA, 1997; and WESTEC, 1996) and determined that approximately 200 tons of sediment per year are transported to the Indio Hills alluvial fans and 2,000 tons of sediment per year to the Thousand Palms Canyon alluvial fan respectfully. In addition, Lancaster found that aeolian transport of sand is relatively constant from year to year, with some seasonal variations, but fluvial deposition of sediment to the alluvial fans occurs only during major storm events and floods. A large quantity of sand may be fluvially deposited within a short period and subsequently transported by aeolian processes for months or years (Lancaster, 2015).

Similar to previous studies in the region urban development has blocked most of the aeolian transport in the wind corridor and the Gravel Pit Wash and other washes to the northwest can no longer contribute sediment to the system (*ibid*). While the Thousand Palms Canyon watershed is not currently affected by development most its fluvial deposition is directed south to the dune area and southeast toward Sun City, with some flow entering the wind corridor northwest of the dunes. Currently most sand available for aeolian transport to the Preserve is deposited by the small washes between the Gravel Pit Wash and Thousand Palms Canyon. As a result, sand delivery to the deposition area is currently about 15 to 20 percent of the 200 tons per year estimated by previous studies such as the 1997 SLA study (30 to 40 tons per year).

Sand delivery to the areas within and surrounding the Thousand Palms Conservation Area has been constrained by development, and any further appreciable reductions in sand delivery may compromise the long-term maintenance of blowsand habitat and consequently the survival of endemic sand-dependent species (USFWS, 2008).

Local Setting

The proposed Project is located near the center of the Coachella Valley on a broad alluvial fan near the base of the Little San Bernardino Mountains and the Indio Hills. The Project consists of four reaches that would be located north of the I-10 freeway, bounded by Rio del Sol Road on the west and Washington Street on the east (see Figures 1-1, Proposed Project Vicinity, and 2-1 through 2-3, Reach Alignments).

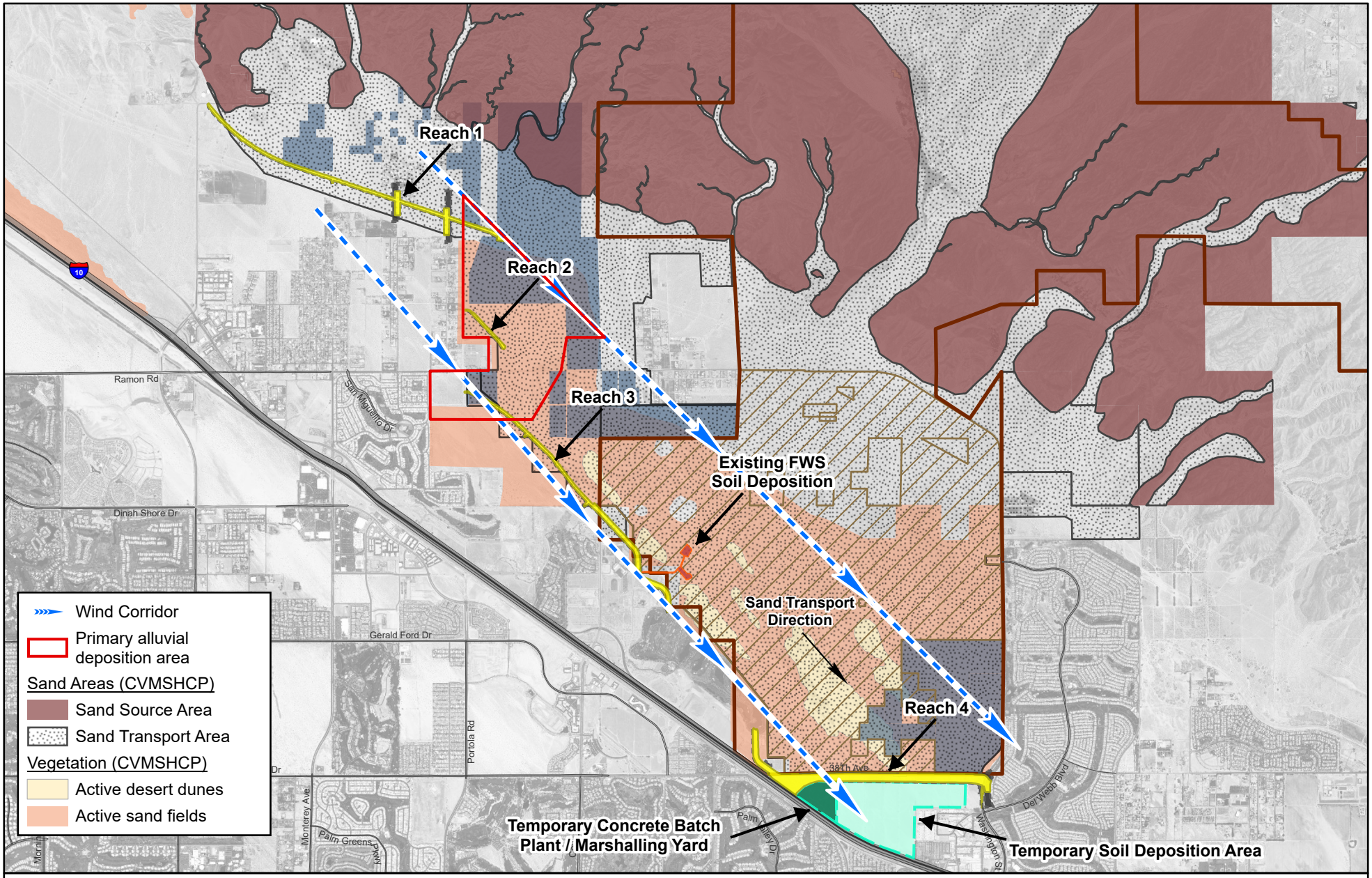


Figure 3.5-1

Sand Source and Transport Areas

An overview of the substrate found in each reach of the proposed Project is provided below, with information on the relationship of the reach to the sand transport corridor (see Figure 3.4-2, Soils) in Section 3.4, Topography, Geology, and Soils and Figure 3.5-1 (Sand Source and Transport Areas).

Reach 1. Reach 1 begins near the corner of Rio del Sol Road and Vista Chino and terminates about 0.5 mile east of Via Las Palmas. In the western portion of the reach the soils are mostly consolidated sandy and rocky alluvium with very little windblown sand on the surface. This material is located primarily along road edges and at the bases of larger shrubs. Some areas support open scrub land with windblown sand hummocks at the bases of larger shrubs. Reach 1 is roughly perpendicular to the alluvial fans emanating from the Indio Hills and crosses into the wind corridor at about a 45-degree angle (see Figure 3.5-1). However, only the east end of Reach 1 impinges on the primary alluvial deposition area that supports sand transport to the Preserve.

Reach 2. Reach 2 is the shortest reach and has silty soils and no loose windblown sand. Reach 2 is entirely within the primary alluvial deposition area that supports sand transport to the Preserve (see Figure 3.5-1). This reach is within and parallel to the wind corridor.

Reach 3. Windblown sand hummocks are present near the middle of Reach 3. These are often found at the base of shrubs; however, sandy soils are common at this location. Localized areas of dry, cracked silty soil indicate depressions that experience brief episodes of ponded water after stormflow along the western third of the Reach. Soils are hard-packed in some areas, and the western portion of this reach contains complex topography with several incised channels some over six feet deep. The southeastern half of Reach 3 borders the Coachella Valley National Wildlife Refuge (Refuge). Soils here vary from loose, windblown sand dunes to compacted areas. Vegetation is sparse scrub with large open sandy areas nearly devoid of vegetation. Reach 3 crosses a detention basin on the northern portion of the Xavier College Preparatory High School. Soils in this area are hard-packed, and there is evidence of periodic vegetation clearing and grading. Sand dunes are located just to the north of the property.

A portion of the northwest end of Reach 3 is within the primary alluvial deposition area that supports sand transport to the Preserve (see Figure 3.5-1). The southeast end of the reach is within the depositional area for aeolian sand transport. Reach 3 is at the southwest edge of, and parallel to, the wind corridor.

Reach 4. This reach is adjacent to the southern boundary of the Coachella Valley National Wildlife Refuge (Refuge) and within the depositional area for aeolian sand transport. Soils consist of sandy, windblown dunes. North-south windrows of tamarisk are regularly spaced from Reach 4 south to Varner Road, and large sandy berms have formed along the windrows. There are open sandy flats between the berms. To the north of 38th Avenue sand dunes are more extensive in the Refuge.

Downwind. The prevailing winds are from the northwest to the southeast. These winds support aeolian sand habitat in the Thousand Palms Conservation Area and Coachella Valley Preserve. Downwind areas have similar habitat as the adjacent reaches, with large areas of dune and sand field, particularly downwind near Reach 4 (see Figure 3.5-1).

Sand Removal and Distribution Sites

The County of Riverside currently removes sand that accumulates along Avenue 38 (adjacent to Reach 4 of the proposed Project) several times per year and places it on the Refuge.

3.5.1.2 Data Collection Methodology

Literature Search

Information regarding sand migration in the Project area was obtained from the following sources:

- Geomorphic Assessment of Sand Transport Impacts for the Thousand Palms Flood Control Project – Document Review (Lancaster, 2015).
- Biological and Conference Opinion for the Coachella Valley Multiple Species Habitat Conservation Plan (USFWS, 2008).
- Long-term Sand Supply to Coachella Valley Fringe-Toed Lizard (*Uma inornata*) Habitat in the Northern Coachella Valley, California (USGS, 2002).
- Whitewater River Basin (Thousand Palms) Flood Control Project Final Environmental Impact Statement / Environmental Impact Report (USACE, 2000).
- Sand Migration Impacts: With-project Conditions, Existing and Future Development, Whitewater River Feasibility Study (SLA, 1999).
- An Analysis of habitat relationships of the Coachella Valley fringe-toed lizard (Barrows, 1997).
- Sand Migration Impact Evaluation Report: Thousand Palms Area (SLA, 1997).
- Sand Migration Study for Flood Control Projects in Thousand Palms Area, Coachella Valley, California (SLA, 1996).
- An Analysis of the Wind Climate in the Coachella Valley Fringe-toed Lizard Preserve (WECTEC, 1996)
- An Analysis of the effects of reduction in windblow sand on Coachella Valley Fringe-toed lizard (Turner et al., 1984).

3.5.1.3 Consultation with Agencies and Local Experts

Agency coordination has been ongoing for several years and has included staff from the Coachella Valley Water District (CVWD), US Army Corps of Engineers (USACE), US Fish and Wildlife Service (USFWS), and ~~Coachella Valley Association of Governments (CVAG)~~ Coachella Valley Conservation Commission (CVCC) (representing the Coachella Valley Multiple Species Habitat Conservation Plan [CVMSHCP]). In addition, local experts including Dr. Cam Barrows an expert on Coachella Fringe-toed lizard ecology and Dr. Nicholas Lancaster of the Desert Research Institute were consulted on sand migration. Dr. Lancaster is a research professor in geomorphology and one of the world's foremost experts on desert sand dunes.

3.5.2 Regulatory Framework

The preservation of existing aeolian sand habitat and the underlying sand transport system is necessary for long-term protection of federally and State-listed sand-dependent plant and wildlife species and their habitat. As such, the regulatory framework and consistency analysis provided in Section 3.6 (Biological Resources) would also apply.

Local

County of Riverside General Plan Western Coachella Valley Area Plan

This plan is an extension of the Riverside General Plan and has been designed to guide physical development and land uses in the unincorporated western portion of the Coachella Valley. The plan

promotes preservation of open space and sensitive habitat areas, including fringe-toed lizard habitat and alluvial fan areas. Specific policies regarding blowsand address potential damage to developed features and density of residential development in sand source areas and are not relevant to Project effects on sand habitat.

Coachella Valley Multiple Species Habitat Conservation Plan

The Project is within the area covered by the CVMSHCP, which provides long-term conservation and habitat protection for the 27 species of special-status plants and animals that are covered under the plan. It provides California Endangered Species Act (ESA) and federal ESA take of covered species for conforming projects, subject to the plan's administrative and mitigation requirements and USFWS and CDFW take authorizations.

Table 3.5-1 provides a list of county plans and policies that are applicable to sand migration and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.5-1. Consistency with Applicable Plans and Policies – Sand Migration

Plan/Policy	Consistency	Explanation
Western Coachella Valley Area Plan	Yes	Project Environmental Commitments (ECs) and mitigation measures would avoid and minimize impacts to native vegetation, sensitive habitat, and habitat for special-status plant and wildlife species. See Section 4.6 (Biological Resources) for analysis and discussion.
Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP)	Yes	The CVMSHCP requires that construction and O&M activities in the Thousand Palms Conservation Area be conducted in a manner to maintain the fluvial sand transport capacity of the system. Project compliance with this requirement is discussed under Impact SM-1. Project ECs and mitigation measures would avoid and minimize impacts to fluvial sand transport. See Sections 4.5 (Sand Migration) and 4.6 (Biological Resources) for analysis and discussion.

3.6 Biological Resources

This section describes the biological resources present or with the potential to occur in or near the proposed Thousand Palms Flood Control Project (Project).

Much of the information presented in this section has been derived from the *Thousand Palms Flood Control Project Biological Resources Technical Report*, included in Appendix C.3, in addition to the other biological resources reports provided in Appendix C. Content in the *Biological Resources Technical Report* is based on available data including reports, books, databases, and extensive field surveys specific to the Project. Biological resource surveys have been conducted in the Project site and vicinity since 1997.

3.6.1 Environmental Baseline

Vegetation types within the Project site and surrounding Study Area are described to characterize botanical resources and wildlife habitat values. Biotic habitats suitable for the occurrence of special-status plant and wildlife species are also described.

Regional Setting and Background

The Project is in the Thousand Palms area of the Coachella Valley in Riverside County, California. The unincorporated community of Thousand Palms is about ten miles east of the City of Palm Springs and immediately north of the City of Palm Desert (see Figure 1-1, Proposed Project Vicinity). Portions of the Coachella Valley are urbanized, with most development along the southern edge of the valley from the City of Palm Springs in the northwest to the Cities of Indio, Coachella, and La Quinta in the southeast. The only incorporated city on the north side of the Coachella Valley is the City of Desert Hot Springs, located north of Palm Springs (USACE, 2000; see Figure 1-1).

The Coachella Valley is defined by the San Jacinto and Santa Rosa Mountains to the southwest and the Little San Bernardino Mountains to the north and northeast. The Coachella Valley slopes gradually from the San Gorgonio Pass toward the Salton Sea for about 40 miles. The Whitewater River is the main drainage course in the Coachella Valley, originating on the southern slopes of the San Bernardino Mountains and flowing in a southeasterly direction through the valley to the Salton Sea (USACE, 2000). The Coachella Valley is within the Colorado Desert (a subdivision of the larger Sonoran Desert) and the climate is hot and dry. Annual rainfall averages four inches but varies by location and from year to year. Common habitat types in the Coachella Valley include, but are not limited to, creosote bush scrub, desert saltbush scrub, desert wash, sand dunes and sand fields (~~CVAG~~ CVCC, 2007).

Regional elevations range from about 30 feet above mean sea level (AMSL) near Indio to 1,614 feet AMSL at Edom Hill near the northwestern end of the Indio Hills. The elevation of the Project site ranges from approximately 100 to 400 feet AMSL. Two segments of the San Andreas Fault are in the area — the Mission Creek Fault along the north edge of the Indio Hills and the Banning Fault along the south edge of the Indio Hills (USACE, 2000).

The Coachella Valley is influenced by infrequent seasonal heavy rains, and prevalent northwest winds (SLA, 1997). During rain events, sand and sediment is carried by flowing water (fluvial transport) from the surrounding hills and mountains and deposited in the Coachella Valley. The sand that has been introduced through fluvial deposition is often carried by the wind (aeolian transport) and deposited toward the southeast, throughout the valley. Sand that has been subject to aeolian transport is often referred to as blowsand, which is generally very fine sand that creates a loose and unstabilized surface (SLA, 1996). The combined effect of the fluvial and aeolian transport of sand creates a series of sand formations that form

dynamic and continuously altering environments. These sand formations include hummocks (mounds), dunes, and sandy plains. Many plant and wildlife species in the Coachella Valley are uniquely adapted to this type of habitat.

There are four main sand transport systems in the Coachella Valley that maintain blowsand habitat. These include the Thousand Palms, Whitewater Floodplain, Willow Hole, and Snow Creek systems. Each system is composed of sand source areas, fluvial transport zones, fluvial deposition/aeolian erosion areas, wind transport corridors, and aeolian sand deposition areas. The Project site is located within the Thousand Palms system. Sand erodes from canyons and hillsides and is deposited onto alluvial plains. Strong winds blow through the Coachella Valley from the west and pick up the sand particles. Shrubs, structures, and topographic features slow the winds near the ground surface and the sand particles drop out and accumulate into dunes and hummocks.

Sand dunes increase and decrease over time, depending on the amount of sand being deposited and eroded by the wind. If upwind sources of sand are reduced or eliminated, wind deposition of sand will be insufficient to replace sand lost by wind erosion and dunes and hummocks will become depleted. This results in degradation or loss of suitable habitat for Coachella Valley fringe-toed lizard (*Uma inornata*) and other sand-dependent special-status species. Maintenance of blowsand processes is therefore essential to sustaining habitat for these species. Sand transport in the Coachella Valley is discussed in detail in Sections 3.5 and 4.5 (Sand Migration).

There are several designated conservation lands in the Project vicinity (see Figure 3.6-1, Land Ownership Proposed Project Alignment): the state-owned Coachella Valley Ecological Reserve; the US Fish and Wildlife Service (USFWS) owned Coachella Valley National Wildlife Refuge (CVNWR); and the Coachella Valley Preserve which encompasses Bureau of Land Management (BLM) Area of Critical Environmental Concern (ACEC) land as well as privately owned conservation lands. Together these conservation lands help to protect a large dune system and its biological resources. In addition to these designated conservation lands, Figure 3.6-1 also depicts the 550-acre floodway mitigation lands and the parcels that would be acquired and deeded to USFWS to offset a portion of the impacts to the CVNWR (see Section 4.6, Biological Resources, and Appendix C.3, Biological Assessment, for further discussion on acquisition lands).

The Project site is within the area covered by the Coachella Valley Multiple Species Habitat Conservation Plan/Natural Community Conservation Plan (CVMSHCP/NCCP) and partly within the Thousand Palms Conservation Area as identified in the CVMSHCP/NCCP. The CVMSHCP/NCCP is addressed in greater detail in Section 3.6.2 (Regulatory Framework) and Appendix C.5.

Critical Habitat

The Project site includes USFWS-designated critical habitat for Coachella Valley fringe-toed lizard and Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) (see Figure 3.6-2, Critical Habitat, and discussions of both species in Sections 3.6.1.4 and 3.6.1.6). Critical habitat is defined as the specific areas within the geographical range occupied by the species that possess the physical or biological features essential for the conservation of the species and that may require special management protection. The Coachella Valley fringe-toed lizard requires aeolian sand habitat and the Coachella Valley milk-vetch requires fluvial or aeolian sand habitat. Therefore, the boundary of the designated critical habitat for each species extends beyond the limits of the species' distribution to include the upwind and upstream sand source, which is essential in maintaining fluvial and aeolian sand habitat (USFWS, 1985; USFWS, 2013).

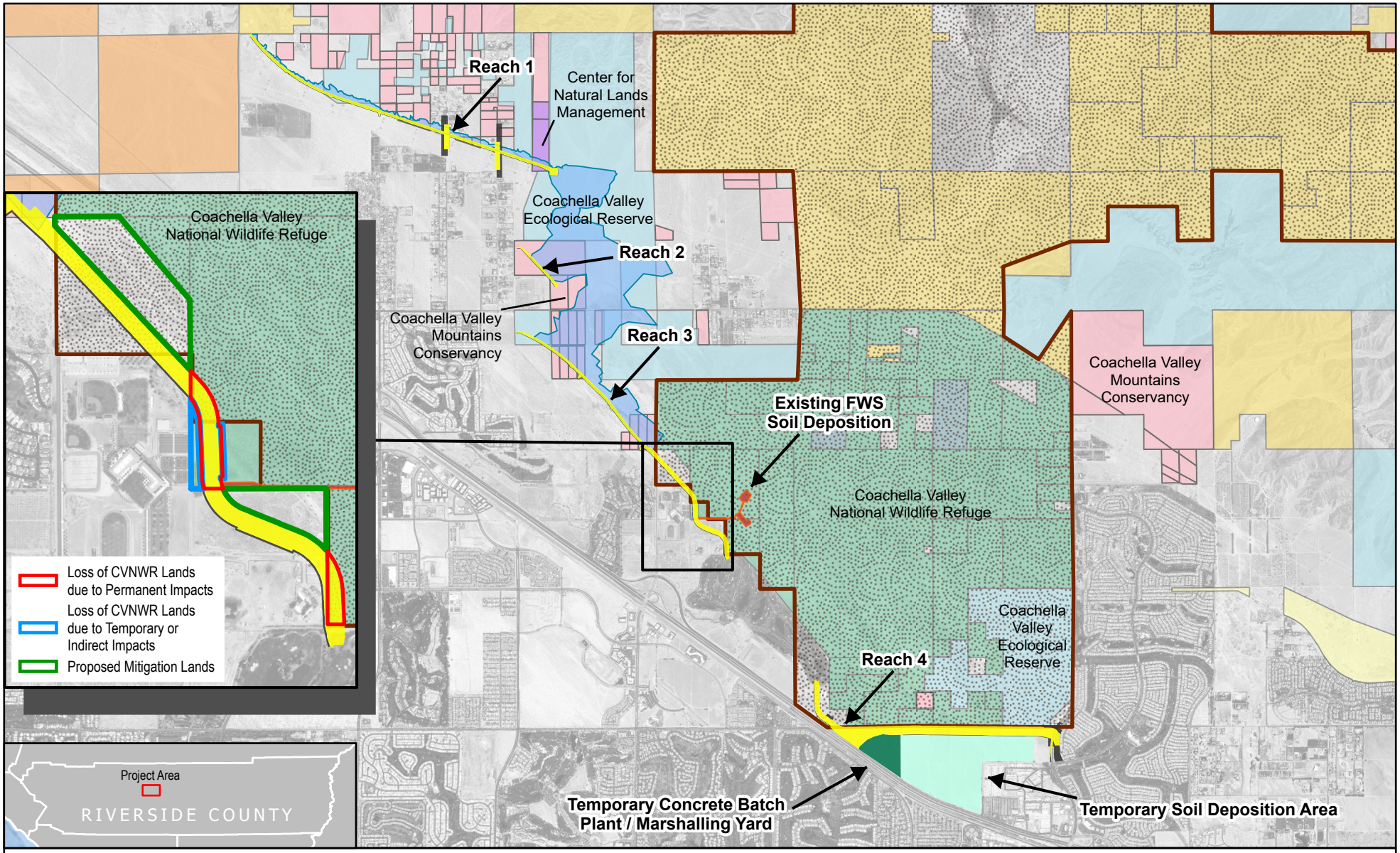


Figure 3.6-1

Land Ownership
Proposed Project Alignment

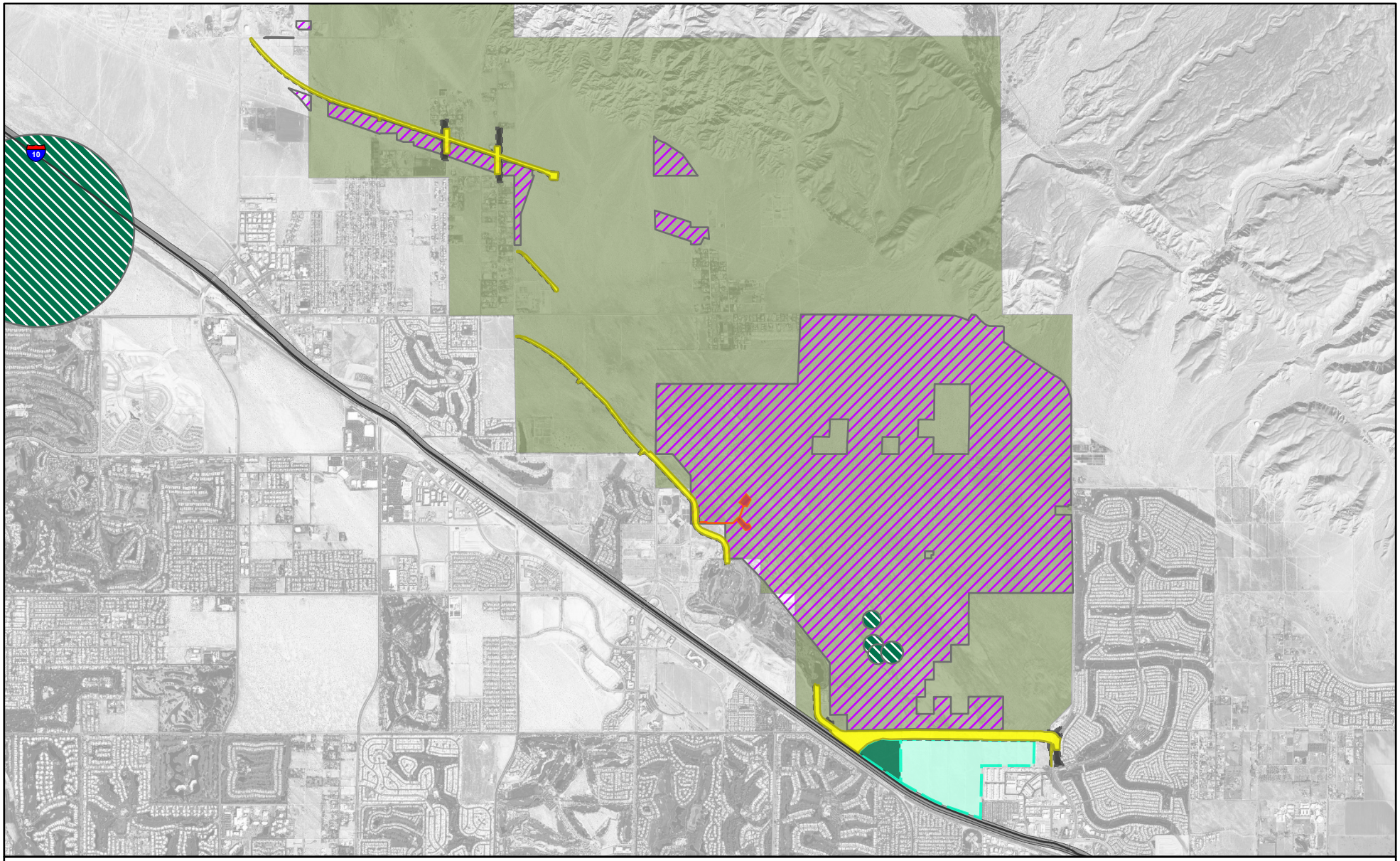


Figure 3.6-2

Critical Habitat

Local Setting

The Project site is near the center of the Coachella Valley on a broad alluvial fan near the base of the Indio Hills. It is located north of the I-10 freeway, bounded by Rio del Sol Road on the west and Washington Street on the east (see Figures 2-1 through 2-3, Reach Alignments).

The Project site and adjacent Study Area is largely undeveloped, with vegetation typical of the western Colorado Desert. Development and land uses in the area include single family homes, golf courses, Xavier College Preparatory High School, the Southern California Edison (SCE) utility corridor, a CVWD water tank (Reservoir 4602), sand and gravel mines, and nurseries. There are paved and dirt roads throughout the area. The site is also located in an urban-wildland interface, and habitat disturbance is primarily from illegal trash dumping, off-highway vehicle (OHV) use, and varying densities of invasive weed infestation.

The Project is divided into four reaches (see Figures 2-1 through 2-3). An overview of the land use and habitat types for each reach is provided below. Vegetation is described in Section 3.6.1.2. Portions of most reaches are within designated preserve lands, critical habitat, or the Thousand Palms Conservation Area. These acreages are identified for the proposed Project (Alternative 1) in Table 3.6-1 and Figure 3.6-1.

The CVMSHCP/NCCP identifies twenty-one distinct conservation areas in the Coachella Valley also referred to as reserve management units (RMU): The Project site is partially within the Thousand Palms Conservation Area. According to the CVMSHCP/NCCP, the Project's levees, are defined as a Covered Activity, as they were planned in the 2000 EIS/EIR, would define the southern edge of this Conservation Area. The final Project design and alignment of the levees were expected to cause a minor adjustment of the Conservation Area boundary such that the levees would not be within the Conservation Area but would define the edge of the area (CVMSHCP/NCCP, page 4-96; CVCC, 2007). In the intervening years, the Conservation Area was established as shown in Appendix A, and the current Project design has been modified somewhat from that described in the 2000 EIS/EIR. In August 2021, the Coachella Valley Conservation Commission (CVCC), with the support of the Coachella Valley Association of Governments (CVAG), conducted an analysis of the proposed Action and determined the design of the Project and Conservation Area boundary adjustment do not conflict with the goals of the CVMSHCP/NCCP a (see Appendix C.5). Based on this analysis the levee footprint does not occur within the Conservation Area.

Table 3.6-1. Proposed Project Disturbance to Designated Preserve Lands, Conservation Area, and Critical Habitat.

	Temporary	Permanent	Total
Total Project Disturbance Area			
Reach 1	17.98	43.04	**61.02**
Reach 2	0.97	4.66	**5.63**
Reach 3	6.19	40.51	**46.7**
Reach 4	10.77	87.26	**98.03**
New Soil Deposition Site	213.40	0.00	**213.40**
Concrete Batch Plant/ Marshaling Yard	37.04	0.00	**37.04**
Grand Total	**286.35**	**175.47**	**461.82**
Coachella Valley Ecological Reserve (State lands)			
Reach 1	1.03	6.88	**7.91**
Reach 2	0.00	0.00	**0.00**
Reach 3	0.46	2.32	**2.78**
Reach 4	0.00	0.00	**0.00**

Table 3.6-1. Proposed Project Disturbance to Designated Preserve Lands, Conservation Area, and Critical Habitat.

	Temporary	Permanent	Total
New Soil Deposition Site	0.00	0.00	**0.00**
Subtotal	**1.49**	**9.20**	**10.69**
Coachella Valley National Wildlife Refuge (USFWS)*			
Reach 1	0.00	0.00	**0.00**
Reach 2	0.00	0.00	**0.00**
Reach 3	0.67	8.14	**8.81**
Reach 4	0.00	0.00	**0.00**
New Soil Deposition Site	0.00	0.00	**0.00**
Subtotal	**0.67**	**8.14**	**8.81**
Coachella Valley Preserve			
Reach 1	15.02	40.35	**55.37**
Reach 2	8.60	4.40	**13.00**
Reach 3	3.54	23.19	**26.73**
Reach 4	0.00	0.00	**0.00**
New Soil Deposition Site	0.00	0.00	**0.00**
Subtotal	**27.16**	**67.94**	**95.10**
Center for Natural Lands Management (Non-profit)			
Reach 1	0.31	2.12	**2.43**
Reach 2	0.00	0.00	**0.00**
Reach 3	0.00	0.00	**0.00**
Reach 4	0.00	0.00	**0.00**
New Soil Deposition Site	0.00	0.00	**0.00**
Subtotal	**0.31**	**2.12**	**2.43**
Coachella Mountains Conservancy			
Reach 1	2.74	5.22	**7.96**
Reach 2	0.86	4.40	**5.26**
Reach 3	1.34	7.49	**8.83**
Reach 4	0.00	0.00	**0.00**
New Soil Deposition Site	0.00	0.00	**0.00**
Subtotal	**4.94**	**17.11**	**22.05**
Critical Habitat: Coachella Valley Fringe-toed Lizard			
Reach 1	16.63	35.84	**52.47**
Reach 2	0.97	4.66	**5.63**
Reach 3	4.51	30.17	**34.68**
Reach 4	1.66	15.05	**16.71**
New Soil Deposition Site	0.00	0.00	**0.00**
Subtotal	**23.77**	**85.72**	**109.49**
Critical Habitat: Coachella Valley Milk-vetch (note: all CVMV critical habitat is within CVFTL critical habitat)			
Reach 1	2.65	4.47	**7.12**
Reach 2	0.00	0.00	**0.00**

Table 3.6-1. Proposed Project Disturbance to Designated Preserve Lands, Conservation Area, and Critical Habitat.

	Temporary	Permanent	Total
Reach 3	0.66	6.54	**7.20**
Reach 4	0.00	0.00	**0.00**
New Soil Deposition Site	0.00	0.00	**0.00**
Subtotal	**3.31**	**11.01**	**14.32**

Notes:
* - Permanent impacts to CVNWR includes 6.72 acres of direct impacts and 1.42 acres of indirect, but permanent, impacts associated with the construction of Reach 3. Therefore, a total of 8.14 acres of permanent impacts to CVNWR lands will occur as part of the construction of Reach 3.

Reach 1. Reach 1 begins near the corner of Rio del Sol Road and Vista Chino and terminates about 0.5 miles east of Via Las Palmas. It is parallel to and north of the SCE utility corridor. Chain link fences surround multiple parcels along the reach, and a quarry on the north side of Vista Chino generates regular truck traffic along the road adjacent to the northwest end of Reach 1. Most of Reach 1 is adjacent to the MSHCP-designated Thousand Palms Conservation Area. In August 2021, CVCC conducted an analysis of the proposed Action and determined the design of the Project and Conservation Area boundary adjustment do not conflict with the goals of the CVMSHCP/NCCP a (see Appendix C.5). Based on this analysis the levee footprint does not occur within the Conservation Area. In addition, portions of Reach 1 are also on or adjacent to Coachella Valley Ecological Reserve lands.

Reach 1 is located on a broad alluvial fan dominated by sparse creosote bush scrub, ruderal[1], and unvegetated areas (see Figure 3.6-3, Vegetation Cover Reach 1 and 2 Alignments). The westernmost portion of the reach includes the largest amount of ruderal habitat, with smaller ruderal areas near development in the center of the reach and adjacent to the CVWD water tank (Reservoir 4602). The majority of the reach is dominated by creosote scrub. Unvegetated areas in this reach are generally limited to roadways and rural residential development, which also include some non-native Asian mustard stands.

In the western portion of the reach, soils are mostly consolidated sandy and rocky alluvium with very little windblown sand on the surface. Blowsand is primarily found along road edges and at the bases of larger shrubs in this area. Illegal trash dumping and debris are prevalent across the western portion of Reach 1, especially in areas mapped as ruderal habitat. Compared to other reaches, this reach has the highest level of habitat disturbance.

The eastern portion of Reach 1 is near a small community, and scattered residences, transmission lines, a nursery, and water tank (Reservoir 4602) are located within otherwise open creosote bush scrub.

Reach 2. Reach 2 is the shortest reach and is immediately north of an existing electrical substation. Vegetation along this reach consists of open creosote bush scrub (see Figure 3.6-3) with silty soils and no loose windblown sand. Several washes are in this reach. Dirt roads cross the area, including roads used to access the power lines associated with the substation. Reach 2 is adjacent to the MSHCP-designated Thousand Palms Conservation Area. In August 2021, ~~CVAG~~ CVCC conducted an analysis of the proposed Action and determined the design of the Project and Conservation Area boundary adjustment do not conflict with the goals of the CVMSHCP/NCCP a (see Appendix C.5). Based on this analysis the levee footprint does not occur within the Conservation Area. In addition, the northwestern end of Reach 2 is near Coachella Valley Ecological Reserve lands.

[1] Ruderal habitat is comprised of weedy vegetation typical of disturbed areas.

Reach 3. Vegetation and soil conditions vary greatly along this reach; creosote bush scrub with windblown sand hummocks transition to cheesebush scrub over most of the alignment from west to east. There is a large ruderal (i.e., weedy) component in the southeastern portion of Reach 3 dominated by Asian mustard stands (see Figure 3.6-4, Vegetation Cover Reach 3 Alignment). Overhead electrical distribution and transmission lines are present. Localized areas of dry, cracked silty soil indicate depressions that experience brief episodes of ponded water after stormflow. There is no wetland vegetation present in these depressions and they do not possess the characteristics of vernal pools. Soils are hard-packed in some areas, and the western portion of this reach contains complex topography with several incised channels, some over six feet deep. There is evidence of periodic vegetation clearing and grading. OHV use and illegal dumping is common in this portion of the reach. Soils vary from loose, windblown sand dunes to compacted areas. Weeds are present, including non-native annual grasses and mustards, and a few scattered tamarisk groves (*Tamarix aphylla*, also known as athel) are located north and east of Xavier College Preparatory High School. Evidence of bonfires and illegal dumping were observed at the tamarisk groves near the center of the reach. This area has heavy OHV use. Reach 3 crosses a detention basin on the northern portion of the Xavier College Preparatory High School property. Sand dunes occur just to the north of the reach. About half of Reach 3 is adjacent to the MSHCP-designated Thousand Palms Conservation Area. In August 2021, ~~CVAG~~ CVCC conducted an analysis of the proposed Action and determined the design of the Project and Conservation Area boundary adjustment do not conflict with the goals of the CVMSHCP/NCCP a (see Appendix C.5). Based on this analysis the levee footprint does not occur within the Conservation Area. In addition, the northwestern end of Reach 3 is on or adjacent to Coachella Valley Ecological Reserve lands, and a small portion of Reach 3 is within the CVNWR.

Reach 4. The west end of Reach 4 crosses a former jojoba farm (abandoned agricultural area) near the I-10 freeway. This reach is adjacent to the southern boundary of designated conservation lands but it is not located within the Thousand Palms Conservation Area, Coachella Valley Ecological Reserve lands, or the CVNWR. The Coachella Valley Conservation Commission considers Reach 4 to represent the southern border of the MSHCP-designated Thousand Palms Conservation Area (see Section 3.6.2.4, Appendix C.5). Soils are sandy, windblown dunes. North-south windrows of tamarisk are regularly spaced from Reach 4 south to Varner Road, and large sandy berms have formed along the windrows. These open areas will be used to stockpile excess spoils from the realignment of Avenue 39 and from construction of the channel. Open sandy flats occur between the berms, supporting creosote bush scrub and sand hummocks in the western end of the reach and ruderal vegetation in the eastern half (see Figure 3.6-5, Vegetation Cover Reach 4 Alignment). Trash is scattered throughout this area, and it is heavily infested with Sahara mustard stands (*Brassica tournefortii*). OHV use is common in the flats between the large sand berms. To the north of Avenue 38, in the CVNWR, sand dunes are more extensive, and less disturbance is evident than on the south side where Reach 4 would be constructed. Compared to other reaches, this reach has the lowest level of habitat disturbance and the best dune habitat. Industrial development is located just south of the eastern end of the reach.

Downstream. The area downstream of the Project site consists of interspersed developed and undeveloped areas. Some of the undeveloped habitat is in isolated patches surrounded by development. Development includes housing tracts, golf courses, and industrial facilities. Interstate-10 is located southwest of the Project site (see Figure 2-3, Reach 4 Alignment). Downstream habitat is similar to adjacent reaches. An area of approximately 178 acres south of Reach 4 would be used for storage of spoils from the Project (see Section 2.0, Project Description, and Figure 2-4).

Downwind. The prevailing winds are from the northwest to the southeast and support aeolian sand habitat in the CVNWR. Downwind areas have similar habitat as the adjacent reaches, with large areas of dune and sandfield habitat, particularly near Reach 4.

Floodway. The levees will direct water into the floodway, a 550-acre area between Reaches 1 and 3 (see Section 3.14, Water Resources). Habitat in the floodway is similar to adjacent reaches.

3.6.1.1 Data Collection Methodology

This section describes the methodology used to assess biological resources within the Project site and surrounding Study Area. Biological information was collected through field investigations (i.e., reconnaissance, protocol, and focused surveys); review of online and published literature; consultation with local biologists and regional experts; and coordination with regulatory agency staff including the USFWS, CDFW, and USACE.

Information from the literature review and observations from field surveys were used to generate a list of special-status plant and animal species that are present or potentially present in or around the Project site. For the purposes of this report, special-status species are:

- designated as either rare, threatened, or endangered by CDFW or USFWS, or are protected under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA);
- candidates for listing or proposed for listing under FESA or CESA;
- CDFW Species of Special Concern, Special Animals, and Watch List species;
- California Rare Plant Rank (CRPR) 1, 2, 3, or 4 plant species;
- protected under the California Fish and Game Code; or
- of concern to resource or regulatory agencies or local jurisdictions.

Literature Search

A preliminary assessment of sensitive biological resources that are present or potentially present in the Study Area was accomplished through a review of literature, including the California Natural Diversity Database (CNDDB) (CDFW, 2021b). The Project site is located within the U.S. Geological Survey (USGS) Cathedral City and Myoma 7.5-minute topographic quadrangles, and these quadrangles were included in the CNDDB search. The following nine adjacent topographic quadrangles were also included: Desert Hot Springs, East Deception Canyon, Indio, Keys View, La Quinta, Palm Springs, Rancho Mirage, Seven Palms Valley, and West Berdoo Canyon. The Palm View Peak quadrangle is also adjacent but represents higher elevations and very different habitats than those present in or around the Project site. Therefore, data from the Palm View Peak quadrangle was not included in the analysis.

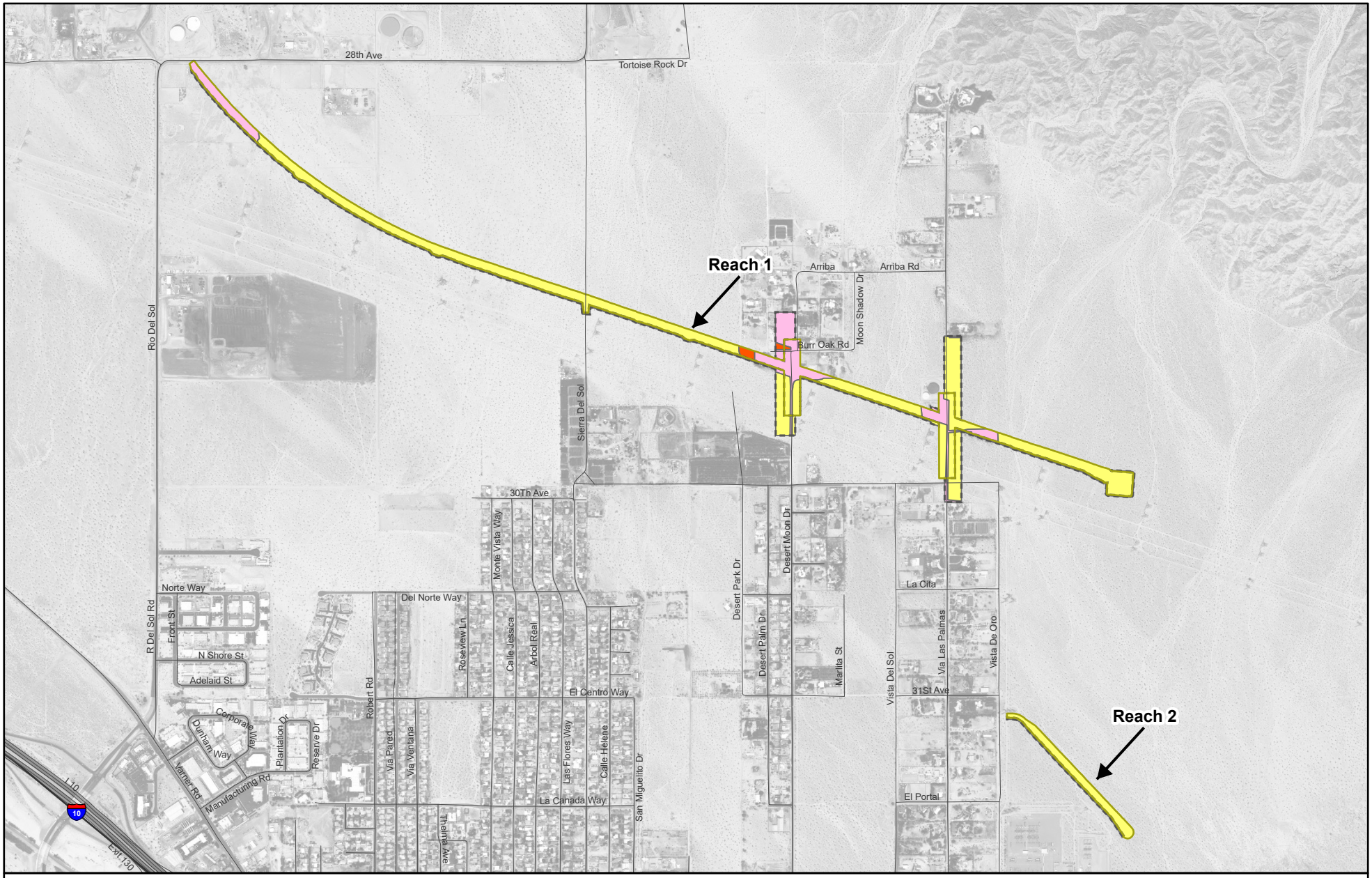


Figure 3.6-3

Vegetation
Reach 1 and 2 Alignments

Figure 3.6-4

Vegetation
Reach 3 Alignment

Figure 3.6-5

Vegetation
Reach 4 Alignment

Additional data regarding special-status species and sensitive habitats were obtained from the following sources:

- State and Federally Listed Endangered and Threatened Animals of California (CDFW, 2021c);
- Special Animals List (CDFW, 2021a);
- California Natural Communities (CDFG, 2010);
- Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2021);
- Consortium of California Herbaria (CCH, 2021);
- Monitoring data compiled by Southern California Edison and submitted to California Public Utilities Commission during surveys and construction for the Devers to Palo Verde II Transmission Line by Aspen biologists;
- Coachella Valley fringe-toed Lizard (*Uma inornate*) 5-Year Review: Summary and Evaluation (USFWS, 2010a);
- Coachella Valley Multiple Species Habitat Conservation Plan/Natural Community Conservation Plan (~~CVAG~~ CVCC, 2007);
- CVMSHCP/NCCP Annual Monitoring Program Reports; and
- Aerial images of Thousand Palms and surrounding areas (1994 to 2014).

Consultation with Agencies and Local Experts

Agency coordination has been ongoing and includes biological resource staff from the CVWD, CDFW, and USFWS. Information on the ecology and distribution of sensitive wildlife in the Coachella Valley were also obtained from Dr. Cam Barrows and the University of California at Riverside. Biological resource data, including the use and distribution of sensitive wildlife such as the Coachella Valley fringe-toed lizard, have also been obtained from interviews and site visits with local experts including Dr. Cam Barrows, Pete Bloom, and William Haas.

Surveys

Field surveys have been conducted for the Project prior to and since the publication of the 2000 EIS/EIR. Table 3.6-2 summarizes the survey efforts from 1997 through 2018. Survey methodologies are described in Appendix C. Surveys were conducted by experienced biologists familiar with the resources in the region and under appropriate conditions to detect and identify plant and wildlife species. Field personnel included Aspen Environmental Group (Aspen) biologists Chris Huntley, Jared Varonin, Justin Wood, Jamison Miner, and William Haas.

For the purposes of describing, assessing, and analyzing biological resources, the "Project site" is defined as all permanent and temporary impact areas associated with construction and O&M of the Project. The "Study Area" includes all portions of the Project site and a surrounding buffer zone. For habitat assessments, vegetation mapping, and surveys for most species, the Study Area is defined as the Project site with a buffer 200 feet wide. For Coachella fringe-toed lizard surveys, the Study Area is defined as the Project site and with a buffer 500 feet wide. For the jurisdictional delineation, the Study Area is defined as the Project site and select areas downstream (south) of the Project site. See Section 3.14.1.1 (Water Resources – Regional Setting) for a description of the jurisdictional delineation (Figure 3.6-11, Federal and State Jurisdictional Waters).

Habitat assessments for special-status species classified habitat as low, moderate, and high suitability for each species. These assessments are based on direct observation, input from experts, and information from the scientific literature. The assessments consider whether the specific area possesses the required vegetation, soils, climate, water sources, and other features for successful long-term support of the species. The assessments do not address whether the species is present or define the potential for the species to occur, but rather indicate the potential for the habitat to support the species. The habitat classifications in this analysis are defined as follows:

- **Low** – The area exhibits some or all characteristics of a species' habitat, but such components are patchy, disturbed, occur in low density, or are otherwise limited. Alternatively, disruptive components occur in high density.
- **Moderate** – The area provides for all of a species' ecological requirements, but these may be patchily distributed, occur at less than optimal densities or distribution, and may be disrupted by a mosaic of other habitats and plant community types, either native or non-native.
- **High** – The area provides for all of a species' ecological requirements.
- **Transient** – The area does not include the habitat of a particular species, but the species may be found there as a result of random movements, migration, escaping from predators, or chasing prey. Such habitat may not be able to support certain species beyond the time it takes an individual to pass through it. There are generally no barriers that separate such transient areas from adjacent suitable habitat and they may function as links between areas of suitable habitat.

Table 3.6-2. Biological Surveys Conducted for the Thousand Palms Flood Control Project

Resource	Dates
Vegetation Mapping	1999 June 29–July 1, 2003 April 29–30, 2010 March 26–28, 2013 May 2013 December 2018 March 2019
Special-status Plants	June 29–July 1, 2003 (survey and habitat assessment for CV milk-vetch; Bloom Biological) April 29–30, 2010 March 26–28, 2013 May 10–12, 2016 March 18–19, 2019
Reconnaissance; General and Special-status Wildlife	1997 March 26, 2009 April 29–30, 2010 March 26–28, 2013 July 8–9, 2013 March 31, 2015 May 10–12, 2016
Burrowing Owls	April 29–30, 2010 March 26–28, 2013
Coachella Valley Fringe-Toed Lizard Habitat Assessment and Surveys	June 29–July 1, 2003 (survey and habitat assessment; Bloom Biological) May 2010 (habitat assessment) June 20, 2010 (survey)

Table 3.6-2. Biological Surveys Conducted for the Thousand Palms Flood Control Project	
Resource	**Dates**
	March 26–28, 2013 (survey) April 8, 2013 (habitat assessment)
Habitat Assessments for Coachella Valley Milk-vetch, Triple-ribbed Milk-vetch, and Desert Tortoise	May 2010 March 26-28, 2013 July 8-9, 2013 March 31, 2015 May 10-12, 2016
Jurisdictional Delineation	September 25 – 28, 2012 December 19-20, 2018 March 18-19, 2019

Note: Unless otherwise indicated, all surveys were conducted by Aspen biologists.

3.6.1.2 Vegetation Communities and Landforms

Vegetation Types

This section includes descriptions of the vegetation types found within the Study Area, as well as the invasive weeds and special-status plants occurring or potentially occurring within the Study Area. Surveys resulted in the documentation of 78 species of plants (58 native and 20 non-native) within the Study Area. Native plants observed included two special-status species, Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) and chaparral sand verbena (*Abronia villosa* var. *aurita*), described below. All plant species observed within the Study Area are listed in Appendix C.2.

The alluvial fans, sand fields, and shallow drainages present in the Study Area support a broad assemblage of native xerophytic[2] vegetation and invasive non-native species. Vegetation mapping of the Study Area has been completed several times over the last 15 years, to support the 2000 EIR/EIS and for subsequent Project-related efforts. The conditions in the Study Area fluctuate due to anthropogenic disturbances (e.g., development, OHV use, trash dumping, etc.) and natural processes (e.g., fluvial and aeolian sand deposition and associated shifts in vegetation composition). Vegetation maps were updated in 2013 to reflect current vegetation communities and verified during surveys in 2018 and 2019. The vegetation types described in this report use the Sawyer et al. (2009) classification. Other commonly used vegetation classification manuals may use different names for similar vegetation types or define them somewhat differently. To facilitate a comparison of information in this EIR/EIS with other relevant documents, Table 3.6-3 provides a list of the Sawyer et al. (2009) vegetation community names used in this EIR/EIS and the roughly equivalent Holland (1986) vegetation community names used in the 2000 EIR/EIS and the CVMSHCP/NCCP. See Figures 3.6-3 through 3.6-5 for vegetation and cover types found within the Study Area.

Table 3.6-3. Comparison of Vegetation Communities from Standard Vegetation Manuals	
Biological Resources Technical Report Sawyer et al. (2009)	**2000 EIR/EIS and CVMSHCP/NCCP Holland (1986)**
Active Sand Dune/Stabilized Sand Field (Desert dunes)	Active desert dunes and stabilized and partially stabilized desert dunes, sand fields
Cheesebush scrub	Mojave wash scrub, desert wash, and desert dry wash woodland
Creosote scrub	Sonoran creosote bush scrub, creosote hummocks

[2] Xerophytic plants are adapted to dry conditions.

Table 3.6-3. Comparison of Vegetation Communities from Standard Vegetation Manuals	
Biological Resources Technical Report Sawyer et al. (2009)	**2000 EIR/EIS and CVMSHCP/NCCP Holland (1986)**
Creosote hummocks	Sonoran creosote bush scrub, creosote hummocks
Abandoned Agriculture (Ruderal)	Abandoned Agriculture (Ruderal)
Asian Mustard Stand (Non-native vegetation)	Asian Mustard Stand (Non-native vegetation)
Disturbed/Developed	Disturbed/Developed

Active Sand Dune/ Stabilized Sand Field (Desert dunes)

Several portions of the Study Area are covered by active and inactive desert dunes that are largely unvegetated. In years of good rainfall, the dunes have a high cover of native annuals such as desert twinbugs (*Dicoria canescens*), desert sand verbena (*Abronia villosa* var. *villosa*), milk-vetch (*Astragalus* ssp.), hairy desert sunflower (*Garaea canescens*), pincushion (*Leucospermum* spp.), and birdcage evening-primrose (*Oenothera deltoides*). There are a few cattle saltbush (*Atriplex polycarpa*) and burrobush (*Ambrosia dumosa*) shrubs in the dunes, but many of these are dead or dying because of the shifting sands. This vegetation best matches the description of *Dicoria canescens – Abronia villosa* Sparsely Vegetated Alliance (desert dunes) in Sawyer et al. (2009), active desert dunes and stabilized and partially stabilized desert dunes in Holland (1986), and desert scrub in Laudenslayer and Boggs (1988). It matches the areas mapped as stabilized and partially stabilized sand fields and dunes in the 2000 EIR/EIS.

The only desert dunes habitat mapped in the Study Area is in Reach 4. Desert dunes habitat is ranked by CDFW as S2 (endangered) and is a sensitive habitat type (CDFG, 2010).

Cheesebush scrub

Cheesebush scrub is dominated by cheesebush (*Ambrosia salsola*). Other associated plants include smoke tree (*Psorothamnus spinosus*), desert lavender (*Hyptis emoryi*), and catclaw (*Senegalia greggii*), which occur in limited numbers. This vegetation is described as *Ambrosia salsola* Shrubland Alliance (cheesebush scrub) in Sawyer et al. (2009), Mojave wash scrub in Holland (1986), and desert wash as described by Laudenslayer (1988). This vegetation corresponds to desert wash described in the 2000 EIR/EIS.

Cheesebush scrub is found in the sandy washes crossed by Reach 1, which are subject to scour by intermittent stormflows. Cheesebush scrub is ranked by CDFW as S4 (apparently secure) and is not considered a sensitive vegetation type (CDFG, 2010).

Creosote scrub (and Creosote hummocks)

Creosote scrub is dominated by creosote bush (*Larrea tridentata*), which tends to form nearly monotypic stands. There is a limited number of other shrubs present, such as burrobush, brittlebush (*Encelia farinosa*), and dyebush (*Psorothamnus emoryi*), as well as a variety of seasonal annuals such as birdcage evening-primrose and desert palafox (*Palafoxia arida*). This vegetation best matches the description of *Larrea tridentata* Shrubland Alliance (creosote bush scrub) in Sawyer et al. (2009), Sonoran creosote bush scrub in Holland (1986), and desert scrub in Laudenslayer and Boggs (1988). It corresponds to creosote hummocks described in the 2000 EIR/EIS.

The western portions of Reaches 3 and 4 are the only portions of the Study Area that support creosote bush scrub. Other portions of the Study Area have creosote bush present, but it tends to co-occur with other dominant shrub species and is therefore classified as a different vegetation type, as described below. The soils within the areas mapped as creosote bush scrub are primarily stabilized sand fields.

Creosote bush scrub is ranked by CDFW as S5 (demonstrably secure) and is not considered a sensitive vegetation type (CDFG, 2010).

Abandoned Agriculture

Areas mapped as abandoned agriculture are largely associated with development, including residential and agricultural, and include other non-native vegetation. There are several private residences with ornamental trees and shrubs in or adjacent to the Study Area in Reaches 3 and 4. At the western end of Reach 4, there is a fallow agricultural field that was previously used as a jojoba farm; many of the jojoba shrubs are now dead. Golf courses between Reaches 3 and 4 and adjacent to the eastern end of Reach 4 are covered in ornamental landscaping. Abandoned agriculture is not ranked by CDFW and is not a sensitive vegetation type (CDFG, 2010).

Asian Mustard Stand (Non-native vegetation)

Several areas are mapped as disturbed/developed or ruderal vegetation. Most of these areas have been disturbed or cleared and support little vegetation. However, the density of ruderal vegetation in these areas is strongly linked to annual rainfall. The sparse vegetation present is composed of weedy non-native annuals such as Sahara mustard (*Brassica tournefortii*) and Mediterranean grass (*Schismus sp.*). The vegetation in these areas partially matches the description of upland mustards as described by Sawyer et al. (2009). Most of these areas best match the description of urban by McBride and Reid (1988). These areas were not distinguished from the surrounding vegetation types in the 2000 EIR/EIS. Reaches 3 and 4 also contain several old windrows of tamarisk (*Tamarix aphylla*) that were probably planted to catch drifting sand. These windrows match the description of *Tamarix* spp. Semi-natural Shrubland Stands (Tamarisk thickets) in Sawyer et al. (2009). Note that one tamarisk species, *T. aphylla* (called athel or saltcedar) is widely planted as windrows and shade trees throughout the region, but it is not invasive. Several other tamarisk species, especially *T. ramissosima* (called tamarisk or saltcedar), are invasive in desert washes and riparian areas, including a few scattered occurrences in the Study Area. Most of these areas best match the description of urban by McBride and Reid (1988).

Asian Mustard/Non-native vegetation was mapped in Reaches 1, 2, 3, and 4. Ruderal vegetation is not ranked by CDFW and is not a sensitive vegetation type (CDFG, 2010). The non-native vegetation found in the Study Area is not ranked by CDFW, with the exception of tamarisk thickets (S4 – apparently secure), and is not considered a sensitive vegetation type (CDFG, 2010).

Disturbed/ Developed (Ruderal)

Several areas are mapped as disturbed/developed, or ruderal, vegetation. Most of these areas have been disturbed or cleared and support little vegetation. However, the density of ruderal vegetation in these areas is strongly linked to annual rainfall. The sparse vegetation present is composed of weedy non-native annuals such as Sahara mustard and Mediterranean grass (*Schismus sp.*). The vegetation in these areas partially matches the description of upland mustards as described by Sawyer et al. (2009). Most of these areas best match the description of urban by McBride and Reid (1988). These areas were not distinguished from the surrounding vegetation types in the 2000 EIR/EIS.

Ruderal vegetation was mapped in Reaches 1, 3, and 4. Ruderal vegetation is not ranked by CDFW and is not a sensitive vegetation type (CDFG, 2010).

3.6.1.3 Invasive Weeds

For purposes of this report, “weeds” includes noxious weeds and any other weed or pest plant identified on weed lists of the California Department of Food and Agriculture or the California Invasive Plant Council.

The term "noxious weeds" includes all plants formally designated as such by the Secretary of Agriculture or other responsible State official. These species usually possess one or more of the following characteristics: "aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and being non-native or new to or not common to the United States or parts thereof" (USDA, 2011).

Noxious and invasive weeds compete with native species for space, nutrients, and water. The spread of non-native invasive plants destroys wildlife habitat and forage, threatens native and special-status plants, and increases soil erosion and groundwater loss.

Surveys within the Study Area identified 20 non-native plant species. Ten of these are considered invasive weeds by the California Invasive Plant Council (Cal-IPC). Table 3.6-4 lists the noxious and invasive plant species that were identified in the Study Area during surveys.

Invasion of Sahara mustard in aeolian sand habitat is of particular concern as it causes dune stabilization and reduction in native annuals and associated plant-eating arthropods. This results in reduced habitat suitability for endemic dune plants and animals, such as Coachella Valley milk-vetch and Coachella Valley fringe-toed lizard (Barrows and Murphy, 2010).

Table 3.6-4. Invasive Plant Species Identified in the Study Area

Scientific Name	Common Name	Threat Level*
Brassica tournefortii	Sahara mustard	High
Cynodon dactylon	Bermuda grass	Moderate
Erodium cicutarium	Red-stemmed filaree	Limited
Eucalyptus sp.	Eucalyptus, gum	Limited or Watch, depending on species
Salsola tragus	Russian thistle	Limited
Schismus arabicus	Mediterranean schismus	Limited
Schismus barbatus	Mediterranean schismus	Limited
Sisymbrium irio	London rocket	Limited
Tamarix aphylla	Athel	Limited
Tamarix ramosissima	Tamarisk	High

*Source: Cal-IPC, 2021.
High – severe ecological impacts, moderate to high rates of dispersal and establishment, widely distributed.
Moderate – substantial but generally not severe ecological impacts, moderate to high rates of dispersal but establishment dependent on ecological disturbance, distribution ranges from limited to widespread.
Limited – minor ecological impacts, low to moderately invasive, distribution limited but may be locally problematic.

3.6.1.4 Special-Status Plants

As listed in Table 3.6-5, 54 special-status plant species occur or potentially occur in the Study Area. Figure 3.6-6 (Special-Status Plant Species) illustrates the locations of special-status plants occurring in or near the Study Area as documented in the CNDDB (CDFW, 2021b). Two special-status plants, Coachella Valley milk-vetch and chaparral sand verbena, were observed within the Study Area and are described below. Species having a moderate or high potential to occur are described in Appendix C.

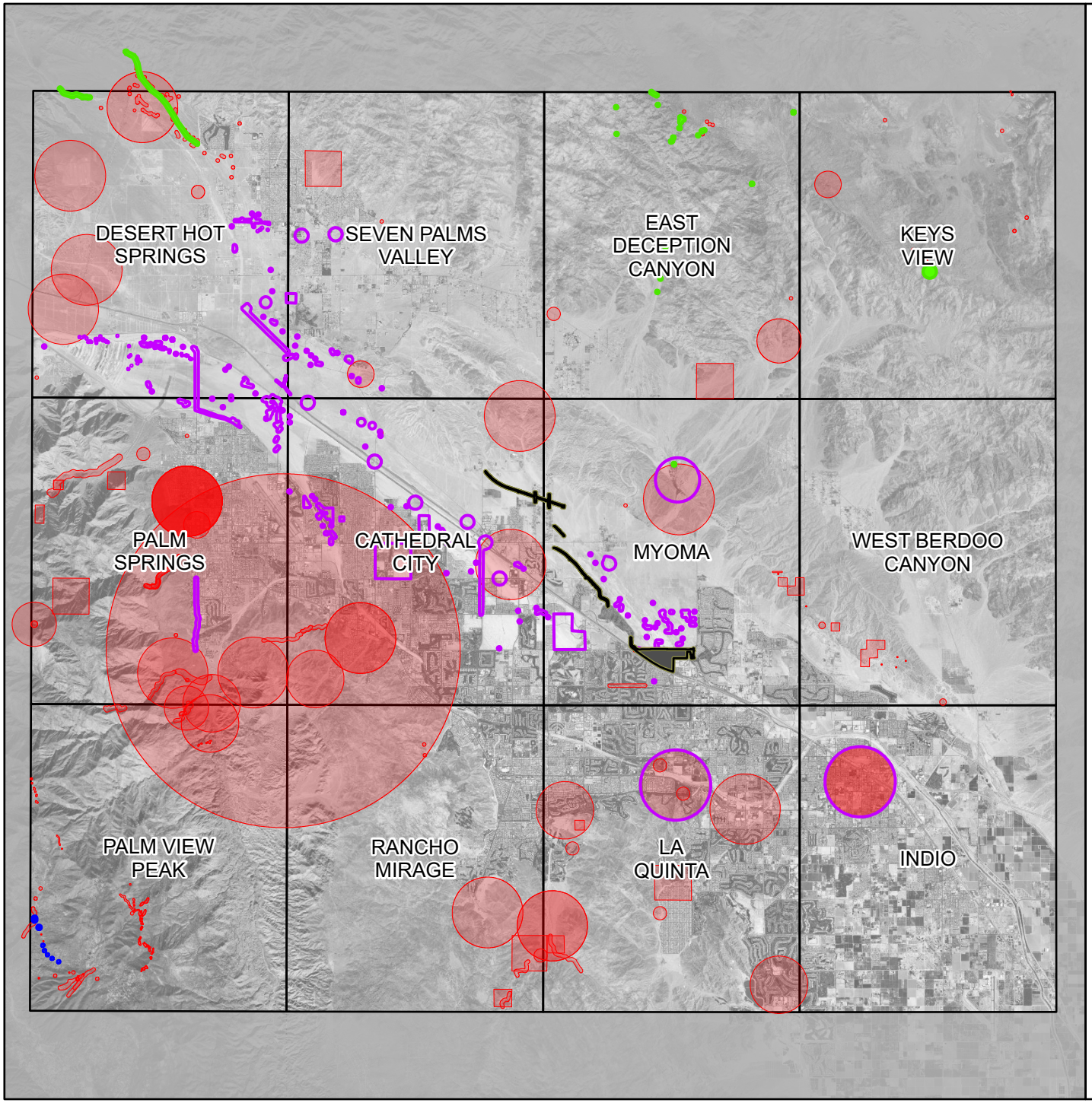


Figure 3.6-6

Special-Status Plant Species

Proposed Project Area

USGS 7.5-minute quadrangle

CNDDB Special-Status Plants

- Coachella Valley milk-vetch (*Astragalus lentiginosus var. coachellae*)
- Mojave tarplant (*Deinandra mohavensis*)
- triple-ribbed milk-vetch (*Astragalus tricarinatus*)
- Other. See Section 3.6.1.4. for complete list of special-status plants observed in the project vicinity. (Darker red indicates multiple species)

2 0 2
Miles

- Each of these special-status plant species was assessed for potential to occur within the Study Area based on the following criteria:
- **Present**: Observed within the Study Area during Project-related surveys, or presence there has been acknowledged by CDFW, USFWS, or local experts.
- **High**: Documented recent record (within 10 years) in the Study Area or vicinity (within 5 miles) *and* environmental conditions (including soil type) associated with the species are present within the Study Area.
- **Moderate**: Documented recent record (within 10 years) in the Study Area or vicinity (within 5 miles) *and* environmental conditions associated with the species are marginal or limited within the Study Area, *or* the Study Area is within the known current range of the species and environmental conditions associated with the species are present within the Study Area.
- **Low**: Historical record (over 10 years old) in the Study Area or general vicinity (within 10 miles) *and* environmental conditions associated with species are marginal or limited within the Study Area.
- **Not Likely to Occur**: Species not observed in the Study Area, *and* Study Area is outside of the known geographical or elevational range, *and* conditions in the Study Area are unsuitable for occurrence.

Habitat conditions include soil type, elevation range, vegetation, and other factors relevant to each species. The criteria are general guidelines and a species' potential for occurrence may be modified based on biological analysis of habitat quality, isolation, and other factors. In this context, species refers to a taxonomic entity and can include recognized subspecies, varieties, or other genetically or geographically distinct units.

Table 3.6-5. Special-status Plants: Potential for Occurrence in the Study Area

Species	Status	Habitat and Distribution, Flowering Period	Potential for Occurrence
Federal or State Endangered or Threatened Species			
Astragalus lentiginosus var. *coachellae* **Coachella Valley milk-vetch**	FE, CVMSHCP/NCCP, CRPR 1B.2	Annual/perennial herb; desert dunes, Sonoran Desert scrub; sandy areas; 40-665 m; Feb–May.	**Present.** Single individual observed within Reach 4 during 2010 surveys; suitable habitat in Reaches 3 and 4.
Astragalus tricarinatus **Triple-ribbed milk-vetch**	FE, CVMSHCP/NCCP, CRPR 1B.2	Perennial herb; Joshua tree woodland, Sonoran Desert scrub; sandy or gravelly soils; 450-1190 m; Feb–May.	**Not Likely to Occur.** Minimally suitable habitat in Reaches 1 and 2; no known populations upstream of these reaches; outside known elevational range.
Erigeron parishii **Parish's daisy**	FT, CRPR 1B.1	Low perennial herb; mountain slopes, upper bajadas, washes; carbonate soils; San Bern Mts and Joshua Tree Nat Park; 800-2000 m; May–Aug.	**Not Likely to Occur.** No suitable habitat; outside known geographic and elevational range.
Locally Sensitive and CRPR Species			
Abronia villosa var. *aurita* **Chaparral sand-verbena**	CRPR 1B.1	Annual or perennial herb; sand, about 75-1615 m; San Jacinto Mts, Inland Empire, adj. Colorado Des, Orange & San Diego cos; mostly alluvial fans and benches in w Riverside Co; dunes in deserts. Jan–Sep.	**Present.** Several individuals observed within Reach 4 during 2010 surveys.

Table 3.6-5. Special-status Plants: Potential for Occurrence in the Study Area

Species	Status	Habitat and Distribution, Flowering Period	Potential for Occurrence
Acmispon haydonii **Pygmy lotus**	CRPR 1B.3	Perennial herb; rocky, pinyon and juniper woodland, Sonoran Desert scrub; about 500-1200 m; SE Peninsular ranges, SW Sonoran Desert, Baja California. Jan–Sep.	**Not Likely to Occur.** Outside known geographic and elevational range.
Allium atrorubens var. cristatum **Inyo onion**	CRPR 4.3	Perennial herb; sandy or rocky soils in Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland; 1200–2560 m; Apr–Jun.	**Not Likely to Occur.** Outside known geographic and elevational range.
Almutaster pauciflorus **Alkali marsh aster**	CRPR 2B.2	Perennial herb; alkaline soils in meadows and seeps; 240–800 m; Jun–Oct.	**Moderate.** Suitable habitat present; not observed.
Aloysia wrightii **Wright's beebrush**	CRPR 4.3	Evergreen shrub; rocky, often carbonate soils in Joshua tree woodland, pinyon juniper woodland; 900–1600 m; Apr–Oct.	**Not Likely to Occur.** Outside known geographic and elevational range.
Ambrosia monogyra **Singlewhorl burrobrush**	CRPR 2B.2	Shrub or small tree; desert and inland cismontane flats, washes, alluvial fans; San Bernardino Valley; San Diego Co., east to Texas and mainland Mexico; 10-500 m. Aug–Nov.	**Not Likely to Occur.** Minimally suitable habitat; known from a single historical location in vicinity; not observed.
Astragalus bernardinus **San Bernardino milk-vetch**	CRPR 1B.2	Perennial herb; Joshua tree woodland, pinyon juniper woodland, often on granitic or carbonate soils; San Bernardino Mts, desert mts; 900-2300 m. Apr–Jun.	**Not Likely to Occur.** Outside known geographic and elevational range.
Astragalus lentiginosus var. *borreganus* **Borrego milk-vetch**	CRPR 4.3	Annual; desert dunes, Sonoran and Mojavean desert scrub; sandy areas; 30-320 m. Feb–May.	**Moderate.** Suitable habitat present; not observed**.**
Astragalus preussii var. laxiflorus **Lancaster milk-vetch**	CRPR 1B.1	Saltbush scrub on alkaline flats; only known California occurrences near Lancaster, extremely rare; also disjunct in Colorado Riv. Valley (AZ, Nev.); 700 m. Mar–May.	**Not Likely to Occur.** Outside known geographic and elevational range.
Astragalus sabulonum **Gravel milk-vetch**	CRPR 2B.2	Annual/perennial herb; Mojavean desert scrub, Sonoran Desert scrub; desert dunes, sandy areas, sometimes gravelly areas; flats, washes, and roadsides; 60-930 m. Feb–Jun.	**Low.** Suitable habitat in all four reaches; no recent records from the Project vicinity; not observed.
Atriplex parishii **Parish's brittlescale**	CRPR 1B.1	Annual; alkali sink, saltbush scrub; western Riverside Co. (extant), Palm Springs and Big Bear Valley areas (historic); Baja Calif.; 25-1900 m. Jun–Oct.	**Not Likely to Occur.** No suitable habitat.
Ayenia compacta **California ayenia**	CRPR 2B.3	Perennial herb; rocky canyons and slopes with desert shrubland; W low desert margins, Chuckwalla Valley, and E Mojave; also Baja and Sonora (Mexico); 150-1095 m. Mar–Apr.	**Not Likely to Occur.** No suitable habitat; not known from the Coachella Valley.

Table 3.6-5. Special-status Plants: Potential for Occurrence in the Study Area

Species	Status	Habitat and Distribution, Flowering Period	Potential for Occurrence
Caulanthus simulans **Payson's jewel-flower**	CRPR 4.2	Annual; mountains and foothills, esp. desert-facing slopes; pinyon woodland, shrublands, etc; Riverside and San Diego cos; 90-2200 m. Apr–Jun.	**Not Likely to Occur.** No suitable habitat; outside known geographic range.
Chorizanthe leptotheca **Peninsular spineflower**	CRPR 4.2	Annual; alluvial fan, granitic soils in chaparral, coastal scrub, lower montane coniferous forest; 300–1900 m; May–Aug.	**Not Likely to Occur.** No suitable habitat; northeast of known geographic range.
Chorizanthe parryi var. parryi **Parry's spineflower**	CRPR 1B.1	Annual; shrublands; open sandy places on alluvial slopes; Inland Empire and also coastal LA Co., Banning Pass, Cajon Pass; 275-1220 m. Apr–Jun.	**Not Likely to Occur.** No suitable habitat; outside known geographic range.
Chorizanthe xanti var. leucotheca **White-bracted spineflower**	CRPR 1B.2	Annual; sandy soil, desert shrubland, pinyon-juniper woodland; mountains and foothills, Cajon Pass and Banning Pass areas; also reported from Liebre Mts.; 300-1200 m. Apr–Jun.	**Not Likely to Occur.** Minimal suitable habitat; east of known geographic range.
Cryptantha costata **Ribbed cryptantha**	CRPR 4.3	Annual; sandy soils; sand dunes; Sonoran and Mojavean scrub; 60- 500 m. Feb–May.	**High.** Suitable habitat; observed in Project vicinity.
Cryptantha holoptera **Winged cryptantha**	CRPR 4.3	Annual; Mojavean desert scrub, Sonoran Desert scrub; 100-1690 m; Mar–Apr.	**Low.** Suitable habitat in all four reaches; no records within 5 miles; not observed.
Cuscuta californica var. apiculata **Pointed dodder**	CRPR 3	Annual parasitic vine; sandy soils; Sonoran and Mojavean scrub; 0–500 m; Feb–Aug.	**Not Likely to Occur.** Well outside geographic range.
Ditaxis claryana **Glandular ditaxis**	CRPR 2B.2	Perennial herb; Mojavean desert scrub, Sonoran Desert scrub; sandy soils; 0-465 m. Oct–Mar.	**Low.** Suitable habitat in all four reaches; no recent records from the Project vicinity; not observed.
Ditaxis serrata var. californica **California ditaxis**	CRPR 3.2	Perennial herb; washes and canyons, low desert and adjacent mountains; La Quinta E to Desert Center, also Anza Borrego; about 30–1000 m. Mar–Dec.	**Low.** Marginally suitable habitat; nearest known records roughly 5 miles to the south; not observed.
Eremothera boothii ssp. boothii **Booth's evening-primrose**	CRPR 2B.3	Annual herb; Joshua tree woodland, pinyon juniper woodland; east of Sierra Nevada to Washington, NW Arizona; 815-2400 m. Apr–Sep.	**Not Likely to Occur.** No suitable habitat; below known elevational range.
Eriastrum harwoodii **Harwood's eriastrum**	CRPR 1B.2	Annual; desert dunes; 125–915 m; Mar–Jun.	**Not Likely to Occur.** Well outside geographic range.
Eschscholzia androuxii **Joshua Tree poppy**	CRPR 4.3	Annual; desert washes, flats, and slopes; sandy, gravelly, or rocky soils in Joshua tree woodland, Mojavean desert scrub; 585–1685 m; Feb–Jun.	**Moderate.** Suitable habitat in all four reaches; Project site is just below elevational range; not observed.
Euphorbia (*Chamaesyce*) *abramsiana* **Abrams' spurge**	CRPR 2B.2	Annual herb; Mojavean desert scrub, Sonoran Desert scrub; sandy areas; 5-915 m. Sep–Nov.	**Moderate.** Suitable habitat; not observed.

Table 3.6-5. Special-status Plants: Potential for Occurrence in the Study Area

Species	Status	Habitat and Distribution, Flowering Period	Potential for Occurrence
Euphorbia (*Chamaesyce*) *arizonica* **Arizona spurge**	CRPR 2B.3	Perennial herb; sandy flats; Borrego & Coachella Valleys are only Calif. sites; S and E to Texas, Mexico, central Baja; 50-300 m. Mar–Apr.	**Moderate.** Suitable habitat; not observed.
Euphorbia misera **Cliff spurge**	CRPR 2B.2	Low perennial shrub; coastal bluffs (Orange and San Diego cos) and rocky desert slopes (Whitewater area, Riv. Co.); 10-500 m. Dec–Oct.	**Not Likely to Occur.** No suitable habitat; outside known geographic and elevational range.
Euphorbia (*Chamaesyce*) *platysperma* **Flat-seeded spurge**	CRPR 1B.2	Annual herb; desert dunes, Sonoran Desert scrub; sandy areas; 65-100 m. Feb–Sep.	**Moderate.** Suitable habitat in Reaches 3 & 4; not observed.
Galium angustifolium ssp. gracillimum **Slender bedstraw**	CRPR 4.2	Perennial herb; granitic, rocky soils in Joshua tree woodland, Sonoran Desert scrub; 130–1550 m; Apr–Jun.	**Low.** Suitable habitat in Reaches 1 & 2; not known within 5 miles; not observed.
Heuchera hirsutissima **Shaggy-haired alumroot**	CRPR 1B.3	Perennial rhizomatous herb; subalpine and upper montane coniferous forest; Peninsular ranges; rocky, granitic soils; 1520-3500 m. May–Jul.	**Not Likely to Occur.** No suitable habitat; outside known geographic and well below elevational range.
Imperata brevifolia **California satintail**	CRPR 2B.1	Perennial grass; meadows, riparian scrub, or mesic sites; desert and cismontane S Calif. to Utah and Mexico; 0-1215 m. Sep–May.	**Not Likely to Occur.** No suitable habitat; outside known geographic range.
Juncus acutus ssp. *leopoldii* **Southwest spiny rush**	CRPR 4.2	Perennial rhizomatous herb; meadows, seeps, marshes; mainly coastal S Calif.; 3-90 m. Mar–Jun.	**Not Likely to Occur.** No suitable habitat.
Lilium parryi **Lemon lily**	CRPR 1B.2	Bulb; meadows and streambanks; mts of S Calif. and SE Arizona; 1220-2745 m. Jul–Aug.	**Not Likely to Occur.** No suitable habitat; outside known geographic and well below elevational range.
Linanthus jaegeri **San Jacinto linanthus**	CRPR 1B.2	Perennial herb; subalpine and upper montane coniferous forest; San Jacinto Mts; rocky, granitic soils; 2195-3050 m. Jul–Sep.	**Not Likely to Occur.** No suitable habitat; outside known geographic and well below elevational range.
Linanthus maculatus **Little San Bernardino Mountains linanthus**	CVMSHCP/NCCP, CRPR 1B.2	Annual herb; desert dunes, Joshua tree woodland, Mojavean desert scrub, Sonoran Desert scrub; sandy soils; 195-2075 m. Mar–May.	**Low.** Suitable habitat in all four reaches; just below elevational range; not observed.
Marina orcuttii var. orcuttii **California marina**	CRPR 1B.3	Perennial herb; chaparral, pinyon juniper woodland, Sonoran Desert scrub; rocky soils; e Peninsular Ranges, Baja; 1050-1160 m. May–Oct.	**Not Likely to Occur.** Minimally suitable habitat; outside of known geographic and elevational range.
Matelea parvifolia **Spear-leaf matelea**	CRPR 2B.3	Low twining vine; rocky sites in desert shrublands, central and eastern deserts and Anza-Borrego State Park; S Nevada, Texas, and Baja; 440-1095 m. Mar–May.	**Not Likely to Occur.** Minimally suitable habitat; below elevational range.

Table 3.6-5. Special-status Plants: Potential for Occurrence in the Study Area

Species	Status	Habitat and Distribution, Flowering Period	Potential for Occurrence
Mentzelia tricuspis **Spiny-hair blazing star**	CRPR 2B.1	Annual herb; sandy, gravelly slopes and washes; Mojavean desert scrub; S Mojave Desert, sw Sonoran Desert, to Utah, Arizona; 150-1280 m. Mar–May.	**Not Likely to Occur.** Well outside of known geographic range.
Mentzelia tridentata **Creamy blazing star**	CRPR 1B.3	Annual; rocky, gravelly, sandy soils in Mojavean desert scrub; 700–1175 m; Mar–May.	**Not Likely to Occur.** Outside of elevational range; not known within 30 miles.
Mimulus diffusus **Palomar monkeyflower**	CRPR 4.3	Annual; sandy or gravelly soils in chaparral, lower montane coniferous forest; 1220–1830 m; Apr–Jun.	**Not Likely to Occur.** No suitable habitat; outside of geographic and elevational range.
Monardella robisonii **Robison's monardella**	CRPR 1B.3	Subshrub or perennial herb; desert shrubland and pinyon-juniper woodland; Little San Bernardino Mts and (possibly) Baja; 610-1500 m. Feb–Oct	**Not Likely to Occur.** South of known geographic and below elevational range.
Nemacaulis denudata var. *gracilis* **Slender cottonheads**	CRPR 2B.2	Annual herb; coastal dunes, desert dunes, Sonoran Desert scrub; 50-400 m. Apr–May.	**Moderate.** Suitable habitat in Reach 4; not observed.
Nemacladus gracilis **Slender nemacladus**	CRPR 4.3	Annual; sandy or gravelly soils in cismontane woodland, valley and foothill grassland; 120–1900 m; Mar–May.	**Not Likely to Occur.** No suitable habitat; known from more than 20 miles from the Project site.
Penstemon clevelandii var. connatus **San Jacinto beardtongue**	CRPR 4.3	Perennial herb; rocky soils in chaparral, pinyon juniper woodland, Sonoran Desert scrub; 400–1500 m; Mar–May.	**Not Likely to Occur.** Outside of the known geographic and elevational range.
Pseudorontium cyathiferum **Deep Canyon snapdragon**	CRPR 2B.3	Annual herb; washes & rocky places, desert shrublands; only Calif. records from Deep Cyn area (Santa Rosa Mts.); ranges to Ariz., Baja, Mexico; 0-800 m. Feb–Apr.	**Not Likely to Occur.** Minimally suitable habitat; known from single location 10 miles southeast of Project site.
Saltugilia latimeri **Latimer's woodland-gilia**	CRPR 1B.2	Annual; chaparral and desert shrublands, arid mountains and foothills; desert margins, Riv. Co to Inyo Co; 400-1900 m. Mar–Jun.	**Not Likely to Occur.** Minimally suitable habitat; outside known geographic range.
Selaginella eremophila **Desert spike-moss**	CRPR 2B.2	Perennial herb; mountainous or hillside rock outcrops and crevices; lower desert-facing slopes of San Jacintos and adjacent desert, to Texas and Baja; 200-900 m. May-Jul.	**Not Likely to Occur.** No suitable habitat.
Senna covesii **Coves' cassia**	CRPR 2B.2	Low, mostly herbaceous perennial; desert washes; Colorado Desert to Nevada, Arizona, and Baja;305-1070 m. Apr–Jun.	**Not Likely to Occur.** Minimally suitable habitat; 12 miles north of nearest known occurrence; just below elevational range.
Stemodia durantifolia **Purple stemodia**	CRPR 2B.1	Perennial herb; moist canyons; desert slopes of San Jacinto Mts, San Diego area, Arizona, tropical Mexico; 180-300 m. Jan–Dec.	**Not Likely to Occur.** No suitable habitat.

Table 3.6-5. Special-status Plants: Potential for Occurrence in the Study Area

Species	Status	Habitat and Distribution, Flowering Period	Potential for Occurrence
Streptanthus campestris **Southern jewel-flower**	CRPR 1B.3	Perennial herb; chaparral, pinyon juniper woodland, lower montane coniferous forest; rocky soils; Transverse and Peninsular Ranges, N Baja; 900-2300 m. Apr–Jul.	**Not Likely to Occur.** No suitable habitat; outside known geographic and below elevational range.
Thelypteris puberula **Sonoran maiden fern**	CRPR 2B.2	Perennial rhizomatous herb; meadows and seeps (seeps and streams); 50–610 m; Jan–Sep.	**Not Likely to Occur.** Limited suitable habitat. Not observed.
Thysanocarpus rigidus **Rigid fringepod**	CRPR 1B.2	Annual; dry rocky slopes in pinyon juniper woodland; 600–2200 m; Feb–May.	**Not Likely to Occur.** No suitable habitat; well outside the geographic and elevational range.
Xylorhiza cognata **Mecca-aster**	CVMSHCP/NCCP, CRPR 1B.2	Herbaceous perennial; desert shrublands, arid canyons; locally endemic around Indio Hills and Mecca Hills, Riverside Co; 20-400 m. Jan–Jun.	**Low.** Minimal suitable habitat; just west of geographic range. Records from hills 3.5 miles NE. Not likely to occur on the valley floor or bajada, low potential for waifs to wash down from the hills.

Sources: Cal-IPC, 2021; CCH, 2021; CDFW 2021d, CDFW 2021e, CNPS 2021.

Conservation Status

Federal Designations:

FE: Federally listed, endangered.
FT: Federally listed, threatened.

***State Designations*:**

SE: State listed, endangered.
ST: State listed, threatened.

Coachella Valley Multi Species Habitat Conservation Plan (CVMSHCP/NCCP) Covered Species:

Species for which take authorization is provided through the permits issued in conjunction with the CVMSHCP/NCCP implementing agreement.

California Rare Plant Rank (CRPR) designations:

1A: Plants presumed extinct in California.
1B: Plants rare and endangered in California and throughout their range.
2A: Plants presumed extirpated in California but occur elsewhere in their range.
2B: Plants rare, threatened, or endangered in California but more common elsewhere in their range.
3: Plants about which we need more information; a review list.
4: Plants of limited distribution; a watch list.

California Rare Plant Rank threat designations:

0.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 Fairly endangered in California (20-80% occurrences threatened)
0.3 Not very endangered in California (<20% of occurrences threatened or no current threats known)

Special-status Plants – Species Accounts

Federal and State-listed Plant Species

One federally listed endangered plant, Coachella Valley milk-vetch, was observed within the Study Area and is described below. No other listed plant species have the potential to be found in the Study Area. Other listed threatened or endangered plant species of the region (e.g., triple-ribbed milk-vetch, and Parish's daisy) are found either in habitats that are not present on the Study Area, in geographic areas that are north or west of the Study Area, or in higher elevations than are present in the Study Area.

Coachella Valley milk-vetch

Status: Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) is federally endangered, has a CRPR 1B.2, and is covered under the CVMSHCP/NCCP.

General Distribution: Colorado Desert within the Coachella Valley.

Distribution in the Study Area: During 2010 surveys, a single individual was observed within Reach 4 of the Study Area, on the north side of Avenue 38. It was not found at this location in 2013 or 2016, but this may have been due to poor rainfall. Reaches 3 and 4 provide suitable habitat for this species, generally in areas mapped as high or moderate suitability for Coachella Valley fringe-toed lizard (see Figures 3.6-8 through 3.6-10, Coachella Valley Fringe-Toed Lizard Habitat).

Portions of the Study Area are within designated critical habitat for Coachella Valley milk-vetch (see Figure 3.6-2), although these areas are not expected to support the plants themselves. Sand in the Thousand Palms area originates in alluvial deposits at the base of the Indio Hills, including lands along Reach 1 of the Project. Large flooding events, if not interrupted by intervening land uses, can carry the sand into fluvial deposition areas where the sand can be moved and sorted by wind. The designated critical habitat area along Reach 1 of the Project site consists of accumulated alluvial sand deposits which may be transported downstream or downwind to occupied Coachella Valley milk-vetch habitat, where it would replenish the windblown sand habitat (USFWS, 2013). Based on CNDDB records (see Figure 3.6-6), the Critical Habitat designation (USFWS, 2013), and field surveys conducted for the Project, this portion of the designated critical habitat is not occupied by Coachella Valley milk-vetch.

Habitat and Habitat Associations: This species grows primarily on loose aeolian or fluvial sands, on dunes or flats, and along disturbed margins of sandy washes.

Natural History: The Coachella valley milk-vetch is an annual or short-lived perennial herb. Depending on weather, plants may persist through the summer dry season to the following growing season. It may flower as early as February or as late as May (Wojciechowski and Spellenberg, 2012), depending on rainfall and temperature. During drought years, its seed may not germinate and established perennial plants may not survive. Occupied habitat is re-established from dormant seed during subsequent years of greater rainfall. It reportedly requires at least one winter storm producing an inch or more of rain to sprout (L. LaPre, USDI Bureau of Land Management, personal communication).

Threats: Vehicles and development (CNPS, 2021).

Other Special-status Plant Species

In addition to the species listed under FESA and CESA, several public agencies and private entities maintain lists of plants and animals of conservation concern. CDFW and CNPS jointly manage the effort to compile and rank these species and CDFW lists the rankings as CRPR 1A, 1B, 2A, 2B, 3, or 4 in its compendium of "Special Plants" (CDFW, 2021e). CRPR 1A species are presumed extirpated or extinct; CRPR 1B, 2A, 2B, 3, and 4, as well as species covered by the CVMSHCP/NCCP are treated here as "special-status species." See the footnote to Table 3.6-5 for an explanation of the rankings. One of these species, chaparral sand-verbena was recorded within Reach 4 and is described below. Eight of these species have a moderate or high potential for occurrence in the Study Area and are described in Appendix C.5. Seven of the special-status plants known from the region have a low potential for occurrence in the Study Area, and 37 are not likely to occur. These species are not addressed further in this section; see Table 3.6-5.

Chaparral sand-verbena

Status: Chaparral sand-verbena *(Abronia villosa* var. *aurita)* has a CRPR of 1B.1. It is not covered by the CVMSHCP/NCCP.

General Distribution: The distribution and identification of chaparral sand-verbena are unclear in published reference works, including Murdock (2012), CNPS (2021), and CNDDB (CDFW, 2021b). The conservation concern is primarily for occurrences in western Riverside County and other locations outside the desert where the variety is rare (Roberts et al., 2004).

Distribution in the Study Area: This species was observed along Reach 4. Several plants were observed growing within the Study Area during surveys in 2009 and 2010. The plants were not found at this location in 2013 or 2016, but this may be due to poor rainfall.

Habitat and Habitat Associations: Chaparral sand verbena's geographic distribution includes the western Sonoran Desert, the San Jacinto Mountains, and the coastal sides of southern California mountains (Murdock, 2012; CNPS, 2021; Roberts et al., 2004). In the desert, it is found in desert shrublands on dunes, sand fields, and sandy washes. In the San Jacinto Mountains, it is common in the Garner Valley area, in yellow pine forest and sagebrush shrublands on sandy alluvial soils. In western Riverside County, it is limited to a few alluvial river washes, including the San Jacinto River wash near Hemet and sandy flats near Murrieta Creek, usually in chaparral, live oak woodlands, or alluvial shrublands.

Natural History: Chaparral sand-verbena is an annual or perennial herb, closely related to the common desert sand-verbena (*A. villosa* var. *villosa)*. In the mountains and western Riverside County, it is perennial, spreading widely across the ground, and dying back to the rootstock during summer. In the desert it may be a facultative annual, flowering and setting seed during its first year, and, depending on weather, persisting through the summer dry season to the following growing season.

Threats: In western Riverside County, flood control projects and land use conversion to agriculture and development have eliminated much of the former alluvial plain and riverwash habitat, and remaining occurrences may be at risk from further development. In the mountains and deserts, it is more widespread and much of its habitat is on public land or private conservation land. In some cases, the desert and mountain occurrences may be at risk from local land use changes, but overall desert and mountain populations do not appear to be threatened.

3.6.1.5 General Wildlife

Wildlife surveys covered all proposed temporary and permanent disturbance areas within the Study Area. Surveys consisted of walking evenly spaced transects throughout all proposed impact areas with particular attention given to areas of suitable habitat for special-status animals (i.e., desert dunes and sandy washes). All wildlife species observed or detected during the surveys are listed in Appendix C.~~5~~ 2, Attachment C.

Common Wildlife Species

The Study Area supports a range of vegetation communities associated with disturbed areas, rural residential properties, sand dunes, and natural lands. The distribution of wildlife in the Study Area varies depending on location, vegetation community, and disturbance level. There is no aquatic habitat in the Study Area and no fish or amphibians were observed or are expected to occur.

Invertebrates

Habitat in the Study Area provides microhabitat conditions for a wide variety of terrestrial and other invertebrates. Some of the orders identified in the Study Area include Hemiptera (true bugs), Coleoptera (beetles), and Diptera (flies), but common invertebrates were not identified to species. Although not detected during surveys several species of air breathing land snails including shoulderband snails are known from desert regions of San Bernardino and Riverside counties. Southern California shoulderband snail (*Helminthoglypta tudiculata*) is known from the region and the Coachella Valley Jerusalem cricket (*Stenopelmatus cahuilaensis*) may be present on the Project alignment.

Reptiles

Common reptiles observed in the Study Area in both disturbed and natural areas include desert iguana (*Dipsosaurus dorsalis*), zebra-tailed lizard (*Callisaurus draconoides*), western whiptail (*Aspidoscelis tigris tigris*), sidewinder (*Crotalus* cerastes), desert spiny lizard (*Sceloporus magister uniformis*), and side-blotched lizard (*Uta stansburiana*).

Although not observed, several other common reptiles are likely to occur in the Study Area. Most reptile species, even if present in an area, are difficult to detect because they are cryptic and their life history characteristics (i.e., foraging and thermoregulatory behavior) limit biologists' ability to observe them during most surveys. Further, many species are active only within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible, such as within rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators. In some cases, they may be observed only when flushed from their refugia.

Birds

Common bird species detected within or in the immediate vicinity of the Study Area include verdin (*Auriparus flaviceps*), common raven (*Corvus corax*), greater roadrunner (*Geococcyx californianus*), great horned owl (*Bubo virginianus*), turkey vulture (*Cathartes aura*), Say's phoebe (*Sayornis saya*), northern rough-winged swallow (*Stelgidopteryx serripennis*), house finch (*Haemorhous mexicanus*), Costa's hummingbird (*Calypte costae*), American kestrel (*Falco sparverius*), lesser nighthawk (*Chordeiles acutepennis*), killdeer (*Charadrius vociferous*), rock dove (*Columba livia*), mourning dove (*Zenaida macroura*), Cassin's kingbirds (*Tyrannus vociferans*), western kingbird (*Tyrannus verticalis*), northern mockingbird (*Mimus polyglottos*), cactus wren (*Campylorhynchus brunneicapillus*), cliff swallow (*Petrochelidon pyrrhonota*), house sparrow (*Passer domesticus*), and Gambel's quail (*Callipepla gambelii*).

Nesting red-tailed hawks (*Buteo jamaicensis*) and verdins were observed during surveys. Many other bird species may use the site either as wintering or seasonal breeding habitat; migrants may use the site as temporary resting or foraging habitat.

Mammals

The distribution of mammals in the Study Area is associated with the presence of such factors as access to perennial water, topographical and structural components (i.e., rock piles, and vegetation) that provide cover and support prey base, and the presence of suitable soils for burrowing mammals. Common mammals or their sign observed during surveys include white-tailed antelope squirrel (*Ammospermophilus leucurus*), black-tailed jackrabbit (*Lepus californicus deserticola*), desert cottontail (*Sylvilagus audubonii*), and coyote (*Canis latrans*).

3.6.1.6 Special-status Wildlife Species

Figure 3.6-7 (Special-status Wildlife Species) illustrates the locations of special-status wildlife occurring within or near the Study Area as documented in the CNDDB (CDFW, 2021b). Six special-status wildlife species were detected within the Study Area during focused and general surveys and are described below. These species are Coachella Valley fringe-toed lizard (*Uma inornata*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), Bendire's thrasher (*Toxostoma bendirei*), Colorado Valley woodrat (*Neotoma albigula venusta*), and Palm Springs round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*).

The specific habitat requirements and the locations of known occurrences of special-status wildlife species were the principal criteria used for inclusion in the list of species potentially occurring within the Study Area. There are 41 special-status wildlife species documented within the general region; see Table 3.6-6.

Two species of interest in this area are desert tortoise (*Gopherus agassizii*) and flat-tailed horned lizard (*Phrynosoma mcallii*). Neither species was observed during surveys. However, unoccupied potential desert tortoise burrows were found in the Study Area, and the flat-tailed horned lizard has been documented in the CVNWR adjacent to Reaches 3 and 4 (~~CVAG~~ CVCC, 2013). Desert tortoise is only rarely observed in the Project vicinity. It has a moderate potential for occurrence in the Study Area, although only rarely and in very low numbers. The flat-tailed horned lizard has a high potential for occurrence. These species are described below. Other special-status wildlife species having a moderate or high potential to occur in the Study Area are described in Appendix C.5.

Each of these species was assessed for potential to occur within the Study Area based on the following criteria:

- **Present**: Species (or sign) was observed in the Study Area during recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- **High**: Habitat (including soils) for the species occurs in the Study Area and a known occurrence occurs within 5 miles within the past 20 years; however, the species was not detected during recent surveys.
- **Moderate**: Habitat (including soils) for the species occurs in the Study Area and a known regional record has been documented, but not within 5 miles of the Project site or within the past 20 years; or there is a documented occurrence within 5 miles of the Study Area within the past 20 years and marginal or limited habitat occurs on site; or the species' range includes the geographic area and suitable habitat exists in the Study Area.
- **Low**: Limited habitat for the species occurs in the Study Area and the species' range includes the geographic area, but there are no documented occurrences within 5 miles of the Study Area within the past 20 years.
- **Not Likely to Occur**: Species or sign not observed in the Study Area, the Study Area is outside of the species' known range, and conditions in the Study Area are not suitable for occurrence.

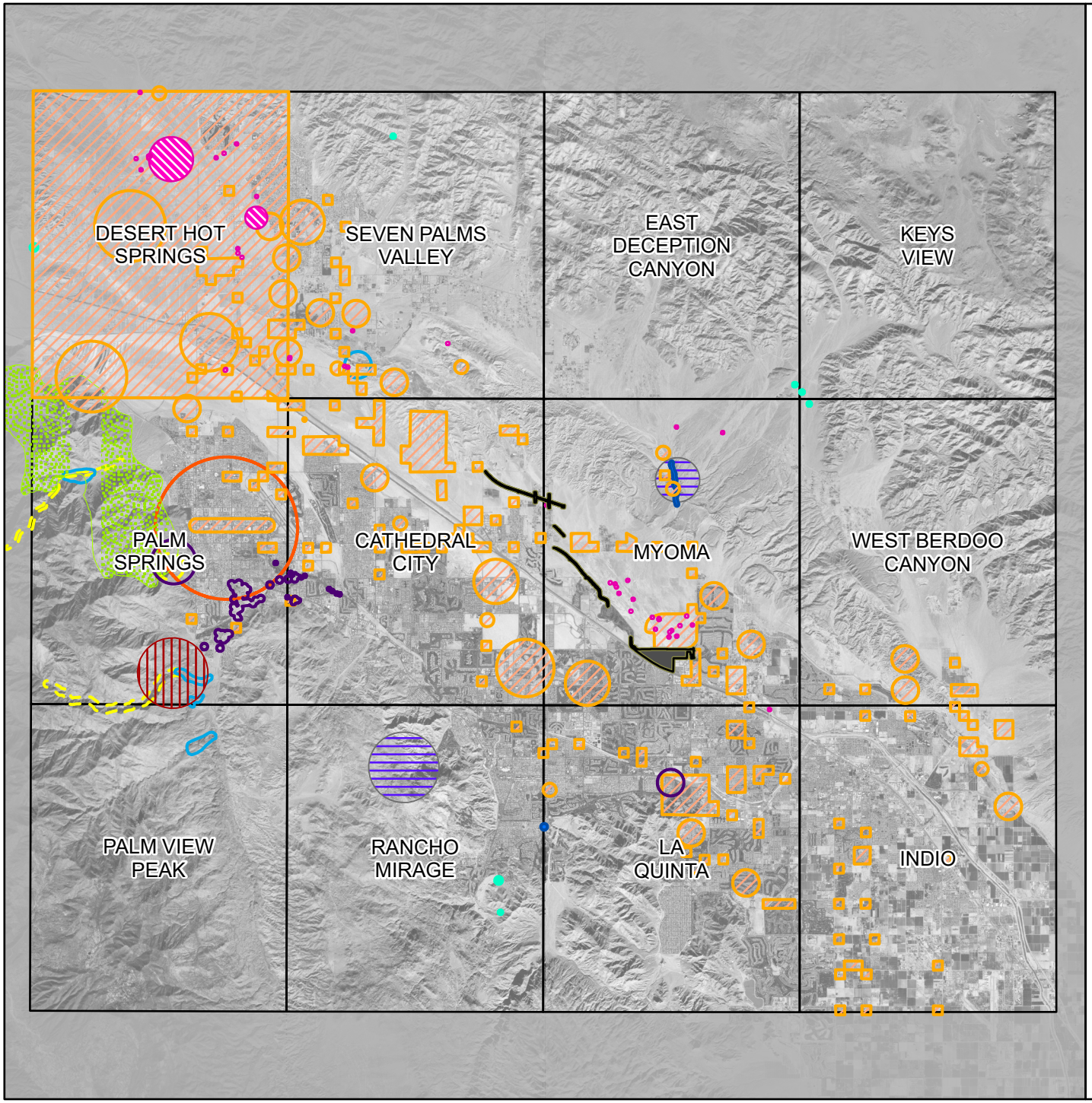


Figure 3.6-7

Special-Status Wildlife Species

Proposed Project Area

USGS 7.5-minute quadrangle

CNDDB Sensitive Animal Records

- California red-legged frog (*Rana draytonii*)
- Casey's June beetle (*Dinacoma caseyi*)
- Coachella Valley fringe-toed lizard (*Uma inornata*)
- Peninsular bighorn sheep DPS (*Ovis canadensis nelsoni pop. 2*)
- coastal California gnatcatcher (*Polioptila californica californica*)
- desert pupfish (*Cyprinodon macularius*)
- desert tortoise (*Gopherus agassizii*)
- least Bell's vireo (*Vireo bellii pusillus*)
- southern mountain yellow-legged frog (*Rana muscosa*)
- southwestern willow flycatcher (*Empidonax traillii extimus*)

USFWS Carlsbad Office Species Occurrence

- Burrowing owl (*Athene Strigidae*)

N

2 0 2 Miles

Habitat conditions include soil type, elevation range, vegetation, and other factors relevant to each species. The criteria are general guidelines and a species' potential for occurrence may be modified based on biological analysis of habitat quality, isolation, and other factors. In this context, species refers to a taxonomic entity and can include recognized subspecies, population segments, or other genetically or geographically distinct units.

Table 3.6-6. Special-Status Wildlife: Potential for Occurrence in the Study Area

Species	Status	Habitat and Distribution	Potential for Occurrence
FEDERAL OR STATE ENDANGERED OR THREATENED OR CANDIDATE SPECIES			
Invertebrates			
Dinocoma caseyi **Casey's June beetle**	FE	Found only in two small populations in southern Palm Springs; sandy soils.	**Not Likely to Occur.** Outside of known geographic range.
Fish			
Cyprinodon macularius **Desert pupfish**	FE, SE, CVMSHCP/ NCCP	San Felipe Creek and Salt Creek (Imperial Co.); also several refugia populations and in irrigation canals near Salton Sea; a few locations in Arizona and Mexico.	**Not Likely to Occur.** No suitable aquatic habitat.
Amphibians			
Rana draytonii **California red-legged frog**	FT, SSC	Ponds or pools in foothill and valley streams below about 4000 ft. elev.; Coast Ranges and W Sierra Nevada to N Baja; nearly extinct S of Ventura Co (extant at Santa Rosa Plateau).	**Not Likely to Occur.** No suitable aquatic habitat; outside of known geographic range.
Rana muscosa **Southern mountain (Sierra Madre) yellow-legged frog**	FE, SE, SSC	Perennial mountain streams above about 3000 ft. elev.; closely associated with streams; diurnal; endemic to mountains of S Calif.; extinct in much of range.	**Not Likely to Occur.** No suitable aquatic habitat; outside of known geographic range.
Reptiles			
Gopherus agassizii **Desert tortoise**	FT, ST, CVMSHCP/ NCCP	Desert scrub, desert wash, Joshua tree habitats; prefers creosote bush scrub habitat; requires friable soils for burrow and nest construction.	**Moderate-Low.** Suitable habitat for very low-density population present in all reaches; known from just east of the Study Area. Unoccupied potential burrows observed in Study Area. No evidence of scat or other sign. Burrows were degraded and are likely remnant.
Phrynosoma mcallii **Flat-tailed horned lizard**	SSC, CVMSHCP/ NCCP	Restricted to desert washes and desert flats in central Riverside, eastern San Diego, and Imperial Counties; prefers fine sands for burial; requires adequate vegetative cover.	**High.** Suitable dune habitat; species known from the CVNWR, immediately adjacent to Reaches 3 and 4.
Uma inornata **Coachella Valley fringe-toed lizard**	FT, SE, CVMSHCP/ NCCP	Limited to sandy areas in the Coachella Valley; requires fine, loose, windblown sand interspersed with hardpan and widely spaced desert shrubs for burrowing.	**Present.** Observed in Reaches 3 & 4 during 2010 and in Reach 4 during 2015, also observed in 1997 and 2003; suitable habitat in Reaches 3 and 4.

Table 3.6-6. Special-Status Wildlife: Potential for Occurrence in the Study Area			
Species	**Status**	**Habitat and Distribution**	**Potential for Occurrence**
Birds			
Empidonax traillii extimus **Southwestern willow flycatcher**	FE, SE, CVMSHCP/ NCCP	Breeds in dense riparian habitats, esp. in willows; scattered locations in Calif. and Baja; near sea level to about 8000 ft. elev; winters in Cent. Amer.	**Not Likely to Occur.** No suitable riparian habitat.
Vireo bellii pusillus **Least Bell's vireo**	FE, SE, CVMSHCP/ NCCP	Riparian woodland and shrubland; breeds in S Calif. and N Baja, sea level to 1500-2000 ft. elev (one report at 2800 ft.); winters in Baja; endangered by habitat loss and cowbird parasitism.	**Not Likely to Occur.** No suitable riparian habitat.
Mammals			
Corynorhinus townsendii **Townsend's big-eared bat**	SSC	Roosts in caves, mines, structures, hollow trees; all but alpine and subalpine habitats; most abundant in mesic habitats.	**Low.** Low potential to forage on site; not likely to roost on site (no potential roosting habitat).
Ovis canadensis nelsoni DPS **Peninsular bighorn sheep**	FE, ST, FP, CVMSHCP/ NCCP	Desert shrublands to conifer forest, gen. remote mountains; scattered populations in Peninsular Ranges, Riverside Co. to N Baja Calif.	**Not Likely to Occur.** The DPS is not known to travel north of the Banning Pass, only protected to the south of the Study Area.
NON-LISTED SPECIAL-STATUS SPECIES			
Invertebrates			
Calileptoneta oasa **Andreas Canyon leptonetid spider**	SA	Mojavean desert scrub, known only from the type locality, Andreas Canyon, Palm Springs, Riverside County.	**Not Likely to Occur.** Outside of known geographic range.
Macrobaenetes valgum **Coachella Valley giant sand treader cricket**	SA, CVMSHCP/ NCCP	Sand dune ridges near Coachella Valley.	**Moderate.** Suitable dune habitat in Reaches 3 and 4; historically known from Project vicinity. The CVNWR adjacent to most of the Study Area is mapped as habitat in the CVMSHCP/NCCP.
Oliarces clara **Cheeseweed owlfly (cheeseweed moth lacewing)**	SA	Generally associated with creosote bush; steep, shaded canyons in deserts with intermittent streams.	**Not Likely to Occur.** No suitable habitat.
Stenopelmatus cahuilaensis **Coachella Valley Jerusalem cricket**	SA, CVMSHCP/ NCCP	Inhabits small segment of the sand and dune areas of the Coachella Valley, near Palm Springs and Cathedral Canyon.	**Moderate.** Suitable dune habitat in Reaches 3 and 4; historic records from south of the Study Area.
Reptiles			
Crotalus ruber **Red-diamond rattlesnake**	SSC	Chaparral, woodland, grassland, desert areas; prefers rocky areas with dense vegetation; Coastal CA east to Whitewater Canyon.	**Not Likely to Occur.** Outside of known geographic range.
Phrynosoma blainvillii **Coast horned lizard**	SSC	Lowlands along sandy washes with scattered low bushes; Coastal CA east to Whitewater Canyon.	**Not Likely to Occur.** Outside of known geographic range.

Table 3.6-6. Special-Status Wildlife: Potential for Occurrence in the Study Area			
Species	**Status**	**Habitat and Distribution**	**Potential for Occurrence**
Birds			
Aimophila ruficeps canescens **Southern California rufous-crowned sparrow**	WL	Coastal sage scrub, open chaparral; S Calif. and NW Baja Calif.; not migratory.	**Not Likely to Occur.** No suitable sage scrub or chaparral habitats.
Aquila chrysaetos **Golden eagle**	BGEPA, FP, WL	Nests in remote trees and cliffs; forages over shrublands and grasslands; breeds throughout W N America, winters to E coast.	**Moderate.** Suitable foraging habitat only, no suitable nesting habitat.
Athene cunicularia **Burrowing owl**	SSC, CVMSHCP/ NCCP	Nests in rodent burrows in open, dry annual or perennial grassland, desert, scrubland; low-growing vegetation.	**Present.** Observed during 2010 and 2013 surveys; no breeding activities or active burrows detected.
Cypseloides niger **Black swift**	SSC	Breeds on cliffs, often at waterfalls.	**Not Likely to Occur.** No suitable cliff habitat.
Falco mexicanus **Prairie falcon**	WL	Inhabits dry, open terrain; nests on high cliffs; forages in a variety of open habitats.	**High.** Suitable foraging habitat in all reaches; known from several records in Project vicinity.
Lanius ludovicianus **Loggerhead shrike**	SSC	Pinyon-juniper, Joshua tree, riparian woodland, desert oases, scrub, and washes; prefers open areas with scattered perch sites and fairly dense shrubs and brush for nesting.	**Present.** Observed in the Study Area during several surveys; suitable habitat in all reaches.
Polioptila melanura **Black-tailed gnatcatcher**	SA	Desert shrublands, gen. nests in shrub thickets along washes; occas. in open scrub (esp. in winter).	**High.** Suitable habitat in all reaches; known from the immediate Project vicinity.
Pyrocephalus rubinus **Vermilion flycatcher**	SSC	Inhabits desert riparian adjacent to irrigated fields, irrigation ditches, pastures during nesting; nests in cottonwood, willow, mesquite, and other large desert riparian trees.	**Moderate.** No suitable nesting habitat in Study Area, may utilize the adjacent golf courses.
Toxostoma bendirei **Bendire's thrasher**	SSC	Local spring and summer resident; breeds in flat areas of desert succulent shrub and Joshua tree habitats in Mojave Desert area.	**Present.** Detected in the Study Area during 2013.
Toxostoma crissale **Crissal thrasher**	SSC, CVMSHCP/ NCCP	Desert riparian and desert wash habitats in southeastern deserts; nests in dense vegetation along streams and washes.	**Low.** Study Area supports marginal habitat; lacks dense thickets required for nesting; known from roughly 5 miles to the southeast.
Toxostoma lecontei **Le Conte's thrasher**	SSC (San Joaquin population only), CVMSHCP/ NCCP	Desert resident; primarily open desert wash, desert scrub, alkali desert scrub, desert succulent scrub; nests in dense, spiny shrubs or densely branched cacti.	**High.** Suitable habitat throughout, known from the Project vicinity. Nearest record is 0.8 miles west of Reach 1.

Table 3.6-6. Special-Status Wildlife: Potential for Occurrence in the Study Area

Species	Status	Habitat and Distribution	Potential for Occurrence
Mammals			
Chaetodipus fallax pallidus **Pallid San Diego pocket mouse**	SSC	Desert scrub, desert succulent scrub, pinyon and juniper woodland; prefers sandy, herbaceous areas, usually in association with boulders, rocks or coarse gravel.	**Low.** Marginally suitable habitat in Reaches 1 and 2. Known primarily from desert canyons in surrounding mountains.
Dipodomys merriami collinus **Earthquake Merriam's kangaroo rat**	SA	Interior mountains and valleys near W desert margin (Aguanga, San Felipe Val, etc.), sage scrub, chaparral, and grassland vegetation in adjacent upland areas, sandy-loam soils.	**High.** Suitable habitat present; known from immediate vicinity of Reach 4.
Eumops perotis californicus **Western mastiff bat**	SSC	Lowlands (with rare exceptions); central and S Calif, S Arizona, NM, SW Texas, N Mexico; roost in deep rock crevices, forage over wide area.	**High.** Likely to forage on site; low potential for roosting (minimal potential roosting habitat).
Lasiurus (ega) xanthinus **Western yellow bat**	SSC CVMSHCP/ NCCP	Valley foothill riparian forest, desert riparian, desert wash, palm oasis; roosts in trees, particularly palms; forages over water and among trees.	**High.** Likely to forage on site; low potential for roosting (minimal potential roosting habitat).
Neotoma albigula venusta **Colorado Valley woodrat**	SA	Desert shrublands; SE Calif., SW Ariz., adj. Mexico, and southernmost Nevada; closely associated with beavertail or mesquite thickets.	**Present.** Sign of this species was detected on the Project.
Nyctinomops femerosaccus **Pocketed free-tailed bat**	SSC	Pine/juniper woodland, desert scrub, palm oasis, desert wash, desert riparian; roost in rocky areas with high cliffs.	**High.** Likely to forage on site; no potential for roosting.
Nyctinomops macrotis (Tadarida molossa) **Big free-tailed bat**	SSC	Roosts in crevices of rocky cliffs, scattered localities in W N America through Central America; ranges widely from roost sites; often forages over water.	**High.** Likely to forage on site; no potential for roosting.
Ovis canadensis nelsoni **Nelson's (=Desert) bighorn sheep**	FP	Open shrublands and conifer forest, remote mountains; scattered populations in desert mountains and surrounding ranges, incl. Transverse and Peninsular ranges.	**Low.** Suitable foraging habitat; known from the Indio Hills to the northeast of the Study Area.
Perognathus longimembris bangsi **Palm Springs pocket mouse**	SSC, CVMSHCP/ NCCP	Desert riparian, desert scrub, desert wash, sagebrush; most common in creosote-dominated desert scrub.	**High.** Suitable habitat in all reaches; not observed; recorded in immediate Project vicinity. Areas of the CVNWR adjacent to and near the Project are mapped as habitat in the CVMSHCP/NCCP.
Puma concolor **Mountain lion**	Scan	Mountain lions are known from virtually all ecosystems including desert scrub, riparian, scrub, chaparral, grassland, and woodland habitats. Known also from the urban wilderness interface.	**Moderate.** Suitable foraging habitat; known from the Indio Hills to the northeast of the Study Area.

Table 3.6-6. Special-Status Wildlife: Potential for Occurrence in the Study Area

Species	Status	Habitat and Distribution	Potential for Occurrence
Taxidea taxus **American badger**	SSC	Most abundant in drier, open stages of shrub, forest, and herbaceous habitats; requires friable soils and open uncultivated ground for burrowing.	**High.** Suitable habitat in all reaches; no sign observed.
Vulpes macrotis arsipus **Desert kit fox**	PFM	Arid areas with grasslands, agricultural lands, or scrub areas with scattered shrubby vegetation. Requires open, level areas with loose-textured, sandy loamy soils for digging dens. Arid portions of the southwestern United States and northern and central Mexico.	**High.** Suitable vegetation in all reaches, but friable soil is limited to Reaches 1 through 3; no sign observed.
Xerospermophilus tereticaudus chlorus **Palm Springs (=Coachella Valley) round-tailed ground squirrel**	SSC, CVMSHCP/ NCCP	Restricted to Coachella Valley; desert succulent scrub, desert wash, desert scrub, alkali scrub, and levees; prefers open, flat, grassy areas in fine-textured, sandy soils.	**Present.** Observed during 2010 survey at Edom Hill and during 2013 survey in Reach 1; primarily associated with scattered braided channels throughout area.

Sources: CDFW, 2021a; CDFW 2021c.

Conservation Status

Federal (Fed.) Designations:

FE: Federally listed, endangered.
FT: Federally listed, threatened.
BGEPA: Bald and Golden Eagle Protection Act

***State (Calif.) Designations*:**

SE: State listed, endangered.
ST: State listed, threatened.
SCan: State candidate for listing
SSC: State species of special concern
FP: Fully Protected Species
PFM: Protected fur-bearing mammal.
SA: Special Animal

Coachella Valley Multi Species Habitat Conservation Plan (CVMSHCP/NCCP) Covered Species.

Species for which take authorization is provided through the permits issued in conjunction with the CVMSHCP/NCCP implementing agreement.

Special-status Wildlife – Species Accounts

Federal and State-listed Wildlife Species

One federally listed threatened and state-listed endangered wildlife species, Coachella Valley fringe-toed lizard, was observed within the Study Area, and is described below. Desert tortoise was not observed during surveys but is known from the region. Seven of the listed wildlife species known from the region are not likely to occur in the Study Area, and one has a low potential for occurrence. These species are not addressed further in this section (see Table 3.6-6 for occurrence data).

Coachella Valley fringe-toed lizard

Status: The Coachella Valley fringe-toed lizard (*Uma inornata*; CVFTL) is a federally listed threatened species and a state-listed endangered species. It is also covered under the CVMSHCP/NCCP. Unless otherwise indicated, information on CVFTL biology and population status presented below is summarized from USFWS (2010a).

General Distribution: The CVFTL is found only in the Coachella Valley in and around blowsand habitat and in sandy inter-dune areas of aeolian sand hummock habitat. It prefers fine sand (0.180 to 0.355 mm in diameter; Barrows, 1997) on the lee side of dunes and hummocks. It is highly adapted to "swim" through sand, and will burrow into loose sand to escape predators and to avoid high temperatures at the surface. CVFTL prefers fine sands with low compaction and deeper sand deposits with topographic relief. Implementation of the CVMSHCP/NCCP created four conservation areas in the Coachella Valley that support CVFTL habitat: Thousand Palms, Whitewater Floodplain, Willow Hole, and Edom Hill. The Project site defines portions of the western and southern boundary of the Thousand Palms Conservation Area, and is described in further detail in Section 3.6.2.4.

Distribution in the Study Area: The California Natural Diversity Data Base reports numerous CVFTL occurrences near each Project Reach (see Figure 3.6-7). However, many of these observations are historic data. Moderate to high *s*uitability habitat for the CVFTL is found in and around windblown sand located in Reaches 3 and 4 of the Project site (see Figures 3.6-8 through 3.6-10, Coachella Valley Fringe-Toed Lizard Habitat). Reaches 1 and 2 of the project are considered low suitability for CVFTL due to lack of windblown sand habitat, and there were no reports of CVFTL near these Reaches during monitoring for the adjacent transmission line project. Apparently, windblown sand habitat formerly in this area has shifted toward the southeast in the years since the observations reported in the CNDDB were made (see discussion of local dune migration in Section 3.5). The highest suitability habitat is in the large dunes located in Reach 4 and portions of Reach 3. Surveys conducted for this Project detected several CVFTL within Reach 4 and the adjacent sand deposition area as recently as 2013.

Portions of the Project site are within designated critical habitat for Coachella Valley fringe-toed lizard (USFWS, 1985; see Figure 3.6-2). Portions of the designated critical habitat, including the habitat in Reaches 1 and 2, are not expected to support CVFTL. Instead, these areas were designated as critical habitat due to their role as a sand source, to supply occupied habitat farther downwind (USFWS, 1985; USFWS, 2013). Sand in the Thousand Palms area originates in alluvial deposits at the base of the Indio Hills, including lands along Reach 1 of the Project. Large flooding events, if not interrupted by intervening land uses, can carry the sand into fluvial deposition areas where the sand can be moved and sorted by wind. Based on field surveys and habitat assessments conducted for the Project, this portion of the designated critical habitat is not expected to be occupied by CVFTL.

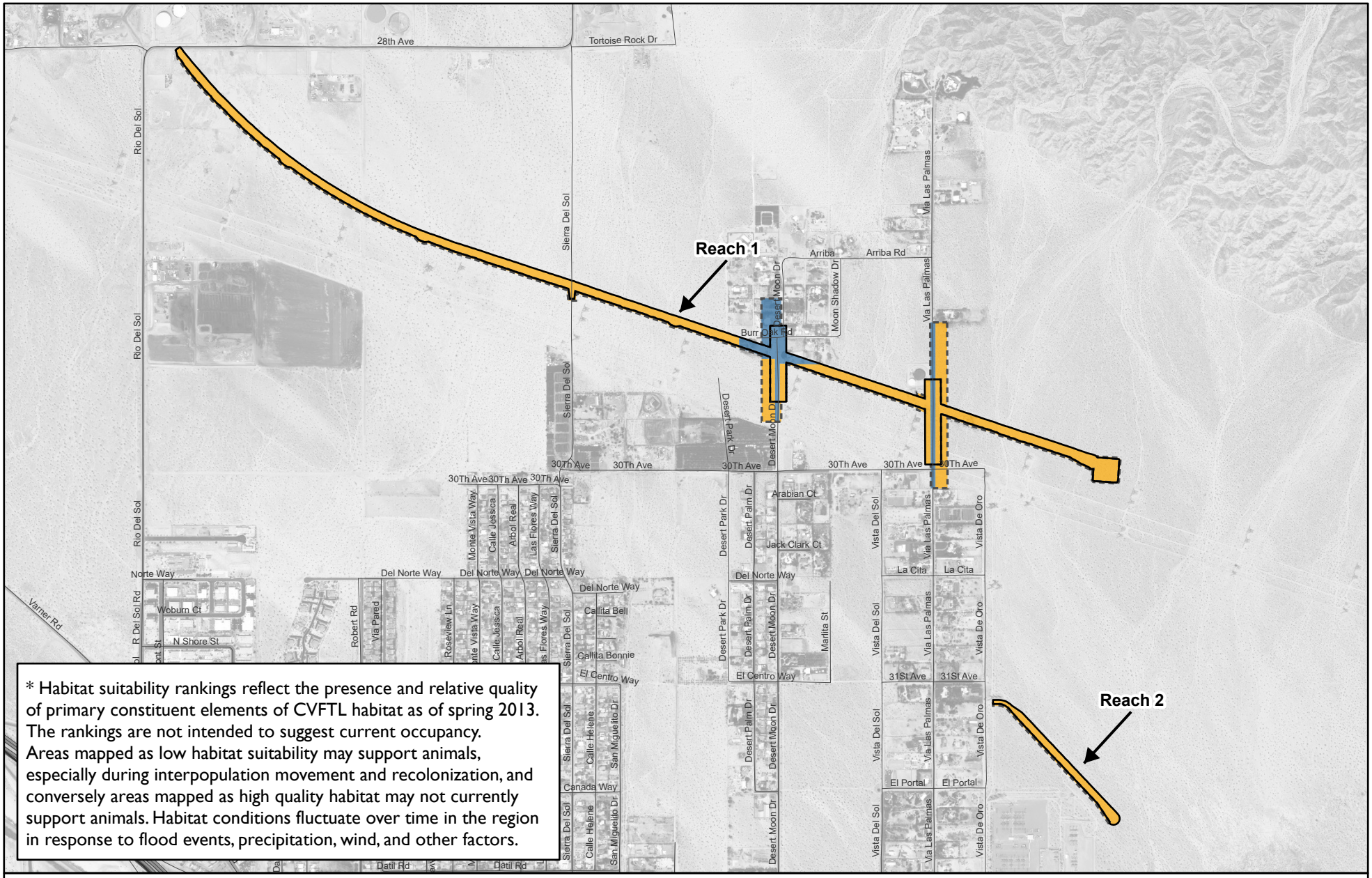


Figure 3.6-8
Coachella Valley Fringe-Toed Lizard Habitat Reach 1 and 2 Alignments

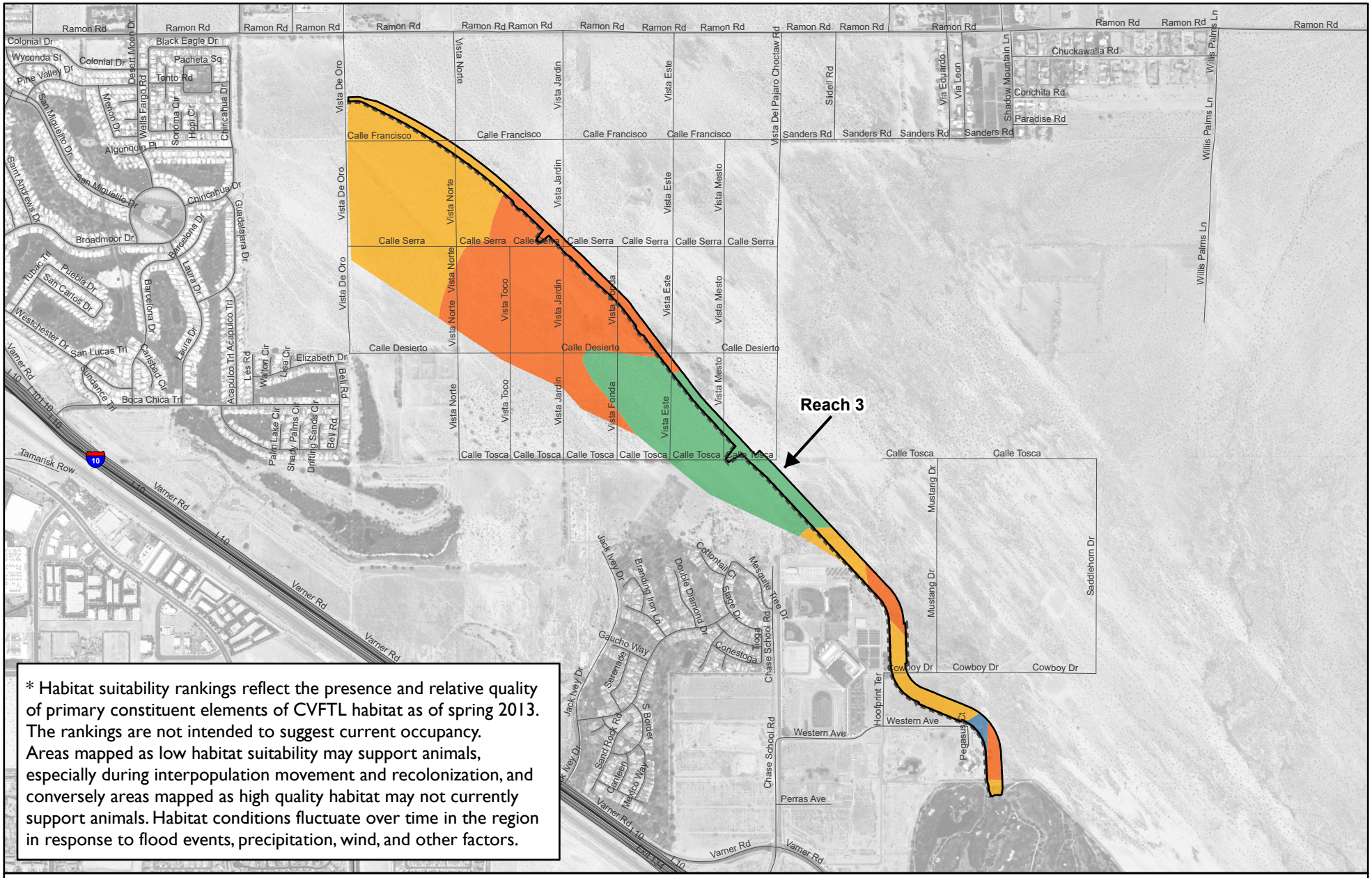


Figure 3.6-9
Coachella Valley
Fringe-Toed Lizard Habitat
Reach 3 Alignment

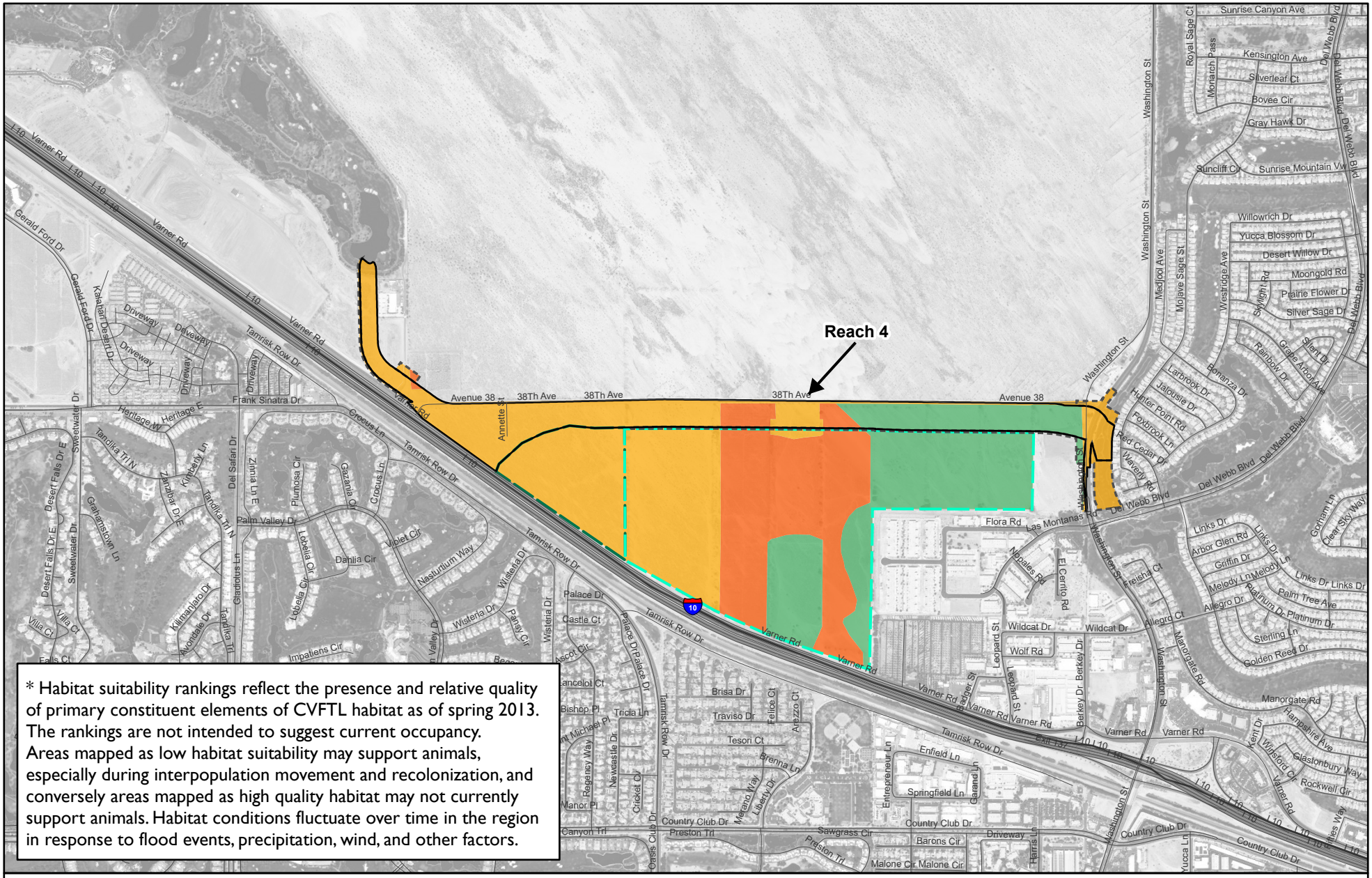


Figure 3.6-10
Coachella Valley Fringe-Toed Lizard Habitat Reach 4 Alignment

Habitat and Habitat Associations: The CVFTL is strongly associated with blowsand habitats such as active dunes and sand hummocks. It is often found in sandy inter-dune areas consisting of aeolian sand hummock habitat, although these areas likely function as foraging habitat and as connections between dunes or blowsand areas that would otherwise be isolated.

Natural History: CVFTL is generally active from March through mid-November, with most activity from April through October. CVFTL eats leaves, flowers, ants, and other insects. Vegetation in high CVFTL use areas includes four-winged saltbush (*Atriplex canescens*), twinbugs (*Dicoria* sp.), and non-native Russian thistle (*Salsola tragus*). Sahara mustard can be locally common depending on regional rainfall.

The Thousand Palms Conservation Area (see Figure 3.6-1) contains the largest amount of remaining contiguous habitat for CVFTL and probably the most robust population of the species. Within this Conservation Area, 901 acres of lands are designated as critical habitat. Total CVFTL habitat in this Conservation Area is approximately 1,850 acres.

Results of monitoring in the Conservation Area suggest that populations of CVFTL fluctuate with annual precipitation. During droughts, population numbers fall to near zero, but rebound during years of average rainfall.

Threats: Threats to CVFTL are construction of windbreaks and resulting obstruction of sand transport systems, urban and agricultural growth, non-native invasive plants, and OHV use.

Desert tortoise

Status: The desert tortoise (*Gopherus agassizii*) is federally and state-listed as threatened and is covered by the CVMSHCP/NCCP.

General Distribution: The desert tortoise is an herbivorous reptile that occurs in the Mojave and Sonoran Deserts in southern California, southern Nevada, Arizona, and the southwestern tip of Utah, as well as Sonora and northern Sinaloa in Mexico. The designated Mojave population of the desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah, and in the Sonoran (Colorado) Desert in California (USFWS, 2011a). Desert tortoises east and south of the Colorado River are now recognized as a distinct species, Morafkai's desert tortoise (*G. morafkai*).

Distribution in the Study Area: The Study Area lies within the known range of the desert tortoise, although desert tortoises are very uncommon on the floor of the Coachella Valley, including the Project site and surrounding area. The CVMSHCP/NCCP habitat models for desert tortoise do not include the Project site. Suitable habitat occurs in all the reaches, although much of this habitat is only marginally suitable due to fine sandy soil that will not support burrows, proximity to development and roads, and OHV use. The nearest documented occurrence of desert tortoise is just east of the Study Area, within the Thousand Palms Conservation Area, where they have been observed infrequently (CDFW, 2021b; see Figure 3.6-7). Based on consultation with CDFW, USFWS, and ~~CVAG~~ CVCC (Coachella Valley Conservation Commission, for CVMSHCP/NCCP), it was determined that protocol surveys for desert tortoise were not required for the Project. However, all other surveys in the Study Area were conducted by biologists with desert tortoise experience, and any tortoise sign identified were noted. Several burrows which may have been unoccupied desert tortoise burrows but could not be definitively attributed to desert tortoise, were found in the Reach 1 portion of the Study Area during reconnaissance surveys. No live tortoises, carcasses, scat, tracks, eggshell fragments, or other tortoise sign was observed. Desert tortoise has a moderate potential for occurrence in the Study Area, although, if present, it would be found only in low numbers.

Habitat and Habitat Associations: The desert tortoise occupies a variety of habitats from flats and slopes, typically characterized by creosote bush scrub at lower elevations, to rocky slopes in blackbrush scrub and juniper woodland ecotones (transition zones) at higher elevations. Tortoises occur most commonly on gently sloping terrain with sandy-gravel soils and where there are herbaceous (non-woody) plants and sparse cover of low-growing shrubs. Soils must be friable (easily crumbled) enough for digging burrows, but firm enough so that burrows do not collapse.

Natural History: During the winter, desert tortoise will opportunistically use burrows, small caves, rock and caliche crevices, or rock overhangs for cover. Hatchling desert tortoises use abandoned rodent burrows for daily and winter shelter (USFWS, 2011a).

Threats: Threats to the desert tortoise include degradation and loss of habitat, the spread of non-native invasive plants, disease, coyote or feral dog predation, raven predation on juvenile tortoises, collection for the pet trade, and direct mortality and crushing of burrows by OHVs.

Mountain Lion

Status: Mountain lion (*Puma concolor*) are currently being evaluated by the State of California for listing under the California Endangered Species Act (CESA). Mountain lion habitat, population numbers, and genetic diversity have been declining rapidly, especially within Southern California populations (Yap et al., 2019). Mountain lion is not covered by the CVMSHCP/NCCP.

General Distribution: Mountain lions exist at naturally low population densities, but they are very territorial and require large swaths of intact wilderness (Pierce and Bleich 2003). In southern California, mountain lions have been found to utilize different habitats within a 24-hour period (Dickson and Beier 2002; Dickson et al. 2005). This species can be found in almost any habitat association and are known from the region. Although they will travel through open or human-disturbed habitat, they prefer expansive, intact, heterogeneous habitat (Dickson and Beier 2002; Dickson et al. 2005). Mountain lion movement patterns tend to follow the distribution and abundance of deer, a common food source of southern California/Central Coast ESU populations (Grigione et al. 2002). Mountain lions are opportunistic hunters and will also feed on other ungulates (such as bighorn sheep, pronghorns, and domestic livestock), bobcats, coyotes, fox, skunks, raccoons, squirrels, rabbits, rodents, and insects (Spalding and Lesowski 1971; Currier 1983).

Distribution in the Study Area: The Study Area lies within the known range of the mountain lion and this species can be expected to occur in the adjacent Little San Bernardino Mountains and the Thousand Palms area. They may also periodically range into the urban wilderness interface near Reaches 1, 2 and 3. Mountain lions have a low to moderate potential for occurrence in the Study Area, although, if present, it would be found as a transient. No mountain lion denning habitat is present where proposed development would occur.

Habitat and Habitat Associations: Mountain lions can be found in a variety of habitat types between sea level and 10,000 feet in elevation and are expected to occur near the Project.

Natural History: Mountain lions are large solitary felids that are considered both nocturnal and crepuscular but has been observed during daylight hours (Dickson and Beier, 2002; Dickson et al., 2005). During daylight hours, mountain lions were frequently found in riparian habitats, suggesting that they prefer to rest in areas with dense understory vegetation for cover (Dickson and Beier, 2002; Dickson et al., 2005). During the evening hours, mountain lions will utilize many habitats within their range to hunt including riparian, scrub, chaparral, grassland, and woodland habitats (Dickson et al., 2005). While hunting, mountain lions prefer to stalk and pursue their prey along canyon bottoms and gentle slopes (Dickson and Beier, 2006). Mountain lions are opportunistic hunters and will also feed on other ungulates

(such as bighorn sheep, pronghorns, deer, and domestic livestock), bobcats, coyotes, fox, skunks, raccoons, squirrels, rabbits, rodents, and insects (Spalding and Lesowski, 1971; Currior, 1983).

Threats: General threats to this species include habitat loss due to urban development, population fragmentation and decreased genetic diversity, vehicle strikes, intraspecific strife (male aggression towards conspecifics and infanticide), and ingestion of rodenticides (Beier 1993; Riley et al. 2014; Vickers et al. 2015). In addition, other threats to this species include depredation kills, poaching, disease, and human-caused wildfires (Beier and Barrett 1993; Vickers et al. 2015).

Other Special-status Wildlife Species

Six non-listed special-status wildlife species were observed in the Study Area and are described below. Sixteen non-listed special-status wildlife species were not observed during surveys but have a high or moderate potential for occurrence in the Study Area. These species are described in Appendix C. Six of the non-listed special-status wildlife species known from the region are not likely to occur in the Study Area, and three have a low potential for occurrence. These species are not addressed further in this document (see Table 3.6-6).

Flat-tailed horned lizard

Status: The flat-tailed horned lizard (*Phrynosoma mcallii*) is a CDFW Species of Special Concern and is covered by the CVMSHCP/NCCP. It was proposed for federal listing, but the proposal has been withdrawn because threats to the species are not as significant as earlier believed (USFWS, 2011c and CDFW, 2017).

General Distribution: The flat-tailed horned lizard's historic range extends throughout much of southeastern California, southwestern Arizona, northwestern Sonora and northeastern Baja California, Mexico. Development is isolating populations from one another.

Distribution in the Study Area: The only remaining populations of flat-tailed horned lizards in the Coachella Valley are on the Coachella Valley Preserve and CVNWR, and much further south at the Dos Palmas Preserve (Barrows et al. 2008). The Study Area provides suitable habitat for flat-tailed horned lizard in Reaches 3 and 4. The closest record is immediately adjacent to Reaches 3 and 4 (CDFW 2021b; see Figure 3.6-7). The flat-tailed horned lizard has a high potential for occurrence in the Study Area.

Habitat and Habitat Associations: The flat-tailed horned lizard occurs in low elevation desert, generally with high temperatures as well as low rainfall and humidity (~~CVAG~~ CVCC, 2007). It often is found in windblown sand habitat, but also may be found in washes and on sandy bajadas.

Natural History: The flat-tailed horned lizard is a medium sized, flat-bodied lizard with a wide, oval-shaped body and scattered enlarged pointed scales on the upper body and tail. Flat-tailed horned lizards lay one to two clutches of 3 to 10 eggs per clutch from May through early July (Nafis, 2021). It primarily eats native harvester ants (*Pogonmyrmex* spp.), which are estimated to comprise about 98 percent of its diet (~~CVAG~~ CVCC, 2007). The flat-tailed horned lizard digs burrows to escape the heat and for winter hibernation. Defense tactics used by this species include remaining motionless to utilize its cryptic appearance as camouflage (~~CVAG~~ CVCC, 2007).

Threats: Threats to this species include increased mortality and loss of habitat. These are generally the result of agricultural and urban development, expansion of utility corridors, and OHV use. Additional threats are from increased predation by household pets, as well as native avian predators that take advantage of artificial perch sites (e.g., utility poles, fence posts) created by development (~~CVAG~~ CVCC, 2007).

Burrowing owl

Status: The burrowing owl (*Athene cunicularia*) is a CDFW Species of Special Concern and is covered by the CVMSHCP/NCCP. It is not federally or State listed as threatened or endangered.

General Distribution: The burrowing owl breeds from western Canada, south through portions of the western, central, and southeastern U.S., and south to central Mexico. The western subspecies, western burrowing owl, occurs throughout North and Central America west of the eastern edge of the Great Plains south to Panama. The winter range of the western burrowing owl is much the same as the breeding range, except that most individuals apparently vacate the northern areas of the Great Plains and the Great Basin.

Distribution in the Study Area: Suitable habitat is present throughout the Study Area. Individual burrowing owls have been detected in the Reach 1 portion of the Study Area (CDFW 2021b; see Figure 3.6-7) and during field surveys for the Project. Burrowing owls are generally uncommon in the region during winter, and scarce during breeding season. Occupied burrows could occur in the Study Area at any time of year, especially in the vicinity of Reaches 1 and 2, where stable soil structure would support burrows. They are less likely to be found in the sandy areas of Reaches 3 and 4. Burrowing owls, if present in the area, would be more likely during winter than during the spring or summer breeding season.

Habitat and Habitat Associations: In California, western burrowing owls are yearlong residents of flat, open, dry grassland and desert habitats at lower elevations (Bates, 2006). They primarily inhabit annual and perennial grasslands and scrublands characterized by low-growing vegetation and may occur in areas that include scattered trees and shrubs if the cover is less than 30 percent (Bates, 2006). Although western burrowing owls prefer large, contiguous areas of treeless grasslands, they have also been observed in fallow agriculture fields, golf courses, cemeteries, road shoulders, airports, vacant lots in residential areas and university campuses, and fairgrounds, provided suitable burrows are present (Bates, 2006). The availability of numerous small mammal burrows, such as those of California ground squirrel (*Spermophilus beecheyi*), is a major factor in determining whether an area with apparently suitable habitat supports western burrowing owls (Coulombe, 1971).

Natural History: Most western burrowing owls that breed in Canada and the northern United States are believed to migrate south during September and October and north during March and April, and into the first week of May. These individuals winter within the breeding habitat of more southern-located populations. Thus, winter observations in southern California may include migrant individuals as well as the resident population. Western burrowing owls breeding in southern California are predominantly non-migratory (Thomsen, 1971).

The western burrowing owl is an opportunistic feeder, primarily feeding on arthropods, small mammals, and birds, and typically needs short grass, mowed pastures, or overgrazed pastures for foraging. It forages mainly at dawn and dusk, but hunting has been observed throughout the day (Thomsen, 1971; Marti, 1974). Insects are often taken during daylight, whereas small mammals are taken more often after dark.

Threats: Factors related to declines in western burrowing owl populations include the loss of natural habitat due to urban development and agriculture; other habitat destruction; predators, including domestic dogs; collisions with vehicles; and toxins such as agricultural pesticides and rodenticides used for poisoning of ground squirrels (Grinnell and Miller, 1944; Zarn, 1974; Remsen, 1978).

Loggerhead shrike

Status: The loggerhead shrike (*Lanius ludovicianus*) is a CDFW Species of Special Concern. It is not federally or State listed as threatened or endangered, and is not covered by the CVMSHCP/NCCP.

General Distribution: The loggerhead shrike is found in southern Canada through Mexico, and breeds through most of its range (Cornell, 2021).

Distribution in the Study Area: Loggerhead shrike was observed within the Study Area. The Study Area is located within the known geographic range for this species and suitable foraging habitat occurs throughout the Study Area; suitable breeding habitat is present throughout the Study Area. All areas of suitable habitat may be occupied. Loggerhead shrike is expected to occur occasionally throughout the Project site.

Habitat and Habitat Associations: The loggerhead shrike is generally found in open habitats with scattered shrubs and trees (Cornell, 2021).

Natural History: Loggerhead shrike often builds nests in thick and thorny vegetation, including piles of tumbleweeds. The shrike is generally insectivorous but is known to hunt lizards and other larger prey and may impale the prey on thorns and fences (Cornell, 2021).

Threats: The primary threat to loggerhead shrike is habitat loss.

Bendire's thrasher

Status: Bendire's thrasher (*Toxostoma bendirei*) is a CDFW Species of Special Concern. It is not federally or State listed as threatened or endangered, and is not covered by the CVMSHCP/NCCP.

General Distribution: Throughout much of Arizona and Sonora (Mexico), with scattered occurrences west through much of southern California. Within California, primarily found in Colorado Desert east of the Project site, but also occurs westward nearer the coast. California and northern Arizona populations are migratory, though Bendire's thrasher is found throughout the year in in southern Arizona and adjacent parts of Mexico.

Distribution in the Study Area: Bendire's thrasher was detected within the Study Area in March 2013. Suitable habitat is present in the Study Area. The Project site is west of its primary geographic distribution, and Bendire's thrasher is expected to occur in the area only occasionally and in low numbers.

Habitat and Habitat Associations: Its habitat requirements are poorly understood, but Bendire's thrasher is generally associated with *Yucca* (e.g., Joshua tree) and *Opuntia* or *Cylindropuntia* (e.g., cholla cacti) species on gently sloping terrain. Soil texture is apparently important to habitat suitability. Hard rocky soils (e.g., desert pavement) and loose sands (e.g., dry wash sands) appear to be less suitable than firmly packed, fine-textured soils.

Natural History: Bendire's thrasher eats mainly ground-dwelling insects, but also forages for seeds and berries. It actively forages on the ground by poking and probing through plant litter and digs in the soil with its bill (Cornell, 2021).

Threats: Threats to this species are not well understood, although populations appear to be undergoing a rapid decline. Threats may include habitat destruction and degradation resulting from expansion of agriculture and development (BirdLife International, 2020).

Colorado Valley woodrat

Status: The Colorado valley woodrat (*Neotoma albigula venusta*) is a CDFW Special Animal. It is not federally or State listed and is not covered by the CVMSHCP.

General Distribution: The Colorado Valley woodrat is found from the southeastern corners of Nevada and California, southern Utah, Arizona, southwestern Colorado, western Texas, and south to central Mexico. The Colorado valley woodrat is found within the Colorado River valley in western Arizona, south to Sonora and Baja California, Mexico (Ulev, 2008).

Distribution in the Study Area: Potential evidence of this species (an active burrow) was detected within the Study Area. Suitable habitat is found in scattered locations of all project reaches, where mesquite or other shrubs of the legume family (palo verde or catclaw acacia) provide food and cover. Colorado Valley woodrat could occur in and around these areas throughout the Project site.

Habitat and Habitat Associations: In California, Colorado Valley woodrat is found in mesquite — creosote bush shrublands.

Natural History: This woodrat is generally associated with creosote bush, mesquite, cacti, catclaw acacia, and palo verde, which are the primary source of both food and cover. It uses locally available material to build middens (piles of sticks and other debris used as a shelter), with a strong preference for cacti. Primarily herbivorous, it also occasionally eats insects such as beetles and ants (Ulev, 2008).

Threats: Habitat loss resulting from livestock grazing is considered a threat to this species, as well as the use of herbicides and climate change (Ulev, 2008).

Palm Springs round-tailed ground-squirrel

Status: Palm Springs round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*; also called Coachella Valley round-tailed ground squirrel) is a CDFW Species of Special Concern and is covered by the CVMSHCP. It was a candidate for federal listing as threatened or endangered prior to 2010, when it was removed from the list of candidates (USFWS, 2010b). Based on research that indicated a larger range and broader habitat requirements than previously known; in light of the protected habitat in Death Valley National Park; and ongoing conservation efforts in the Coachella Valley, the USFWS concluded that the species no longer warranted candidate status.

General Distribution Until recently, Palm Springs round-tailed ground-squirrel was believed to be limited in range to the Coachella Valley region. Recent research indicates that its range is substantially larger, extending at least 150 miles northward to Hinkley Valley and Death Valley.

Distribution in the Study Area: Palm Springs round-tailed ground-squirrel was detected within the Reaches 1 and 2 of the Study Area in March 2013. Active burrows of this species were also detected within Reach 1 in 2013. Suitable habitat is present in scattered patches, especially sandy areas, within all reaches of the Study Area.

Habitat and Habitat Associations: This species' primary habitat is honey mesquite (*Prosopis glandulosa*) hummocks and associated sand dunes and, to a lesser extent, dunes and hummocks associated with creosote bush or other vegetation.

Threats: The primary threats to its habitat are land use changes and groundwater pumping, both of which have eliminated much of the honey mesquite from the Coachella Valley area. These effects are important within the Coachella Valley, but less so throughout the remainder of the species' range.

3.6.1.7 Wildlife Movement and Biological Connectivity

The ability for wildlife to move freely among populations is important to long-term genetic variation and demography. Fragmentation, edge effects and isolation of natural habitat may cause loss of native species

diversity in fragmented habitats. In the short term, wildlife movement may also be important to individual animals' ability to occupy home ranges, if a species range extends across a potential movement barrier. These considerations are especially important for rare, threatened, or endangered species, and wide-ranging species such as large mammals, which exist in low population densities.

In landscapes where native habitats exist as partially isolated patches surrounded by other land uses, planning for wildlife movement generally focuses on local "wildlife corridors" to provide animals with access routes among habitat patches. In largely undeveloped areas, wildlife habitat is available in extensive open space areas throughout the region, but specific land uses or linear barriers may impede or prevent movement. In these landscapes, wildlife movement planning focuses on sites where animals can cross linear barriers but may not emphasize corridors among habitat areas. At a larger scale, landscape-level biological connectivity relies on substantial linkages among large open space areas.

Movement and dispersal corridors that connect large blocks of habitat are essential to the long-term viability of plant and wildlife populations. At every scale, planning for biological connectivity must consider species or populations that may travel through a corridor or linkage regularly (perhaps seasonally or even daily), and other species that may "move" through a corridor or linkage over multiple generations, at a population scale rather than as individual animals.

The California Essential Habitat Connectivity Project (Connectivity Project) was commissioned by the California Department of Transportation (Caltrans) and CDFW to create a statewide assessment of essential habitat connectivity to be used for conservation and infrastructure planning (Spencer et al., 2010). One goal of the Connectivity Project was to create the Essential Connectivity Map, which depicts large, relatively natural habitat blocks that support native biodiversity (natural landscape blocks) and areas essential for ecological connectivity between them (essential connectivity areas). This map does not reflect the needs of particular species but is based on overall biological connectivity and ecological integrity (Spencer et al., 2010).

The California Desert Connectivity Project provided a more detailed analysis of local and regional needs for connectivity and developed linkage designs based on the requirements of individual species (Penrod et al., 2012). In addition, biological connectivity was considered in the design of CVMSHCP/NCCP reserves and conservation areas (~~CVAG~~ CVCC, 2007).

The proposed Project forms part of the south and southwestern boundary of the Thousand Palms Conservation Area. The CVMSHCP/NCCP designates all of the Thousand Palms Conservation Area as a movement corridor or linkage that maintains biological connectivity with other conservation areas and Joshua Tree National Park (~~CVAG~~ CVCC, 2007). These linkages with the Thousand Palms Conservation Area are located to the north, east, and west. Connectivity is limited to the south and southwest by urban development and by the I-10 freeway. The Essential Connectivity Project identifies an essential connectivity area extending from these linkages across the I-10 to the San Jacinto Mountains, to the north of Palm Springs and well north of the Project site (Spencer et al., 2010). The California Desert Connectivity Project identified potential habitat for several special-status plant and animal species in the Project vicinity, which are included in Tables 3.6-5 and 3.6-6 of this document, but it did not identify any specific linkages (Penrod et al., 2012). More importantly the site allows for the movement of windblown sand and many species of wildlife are expected to move along the project alignment.

3.6.1.8 Jurisdictional Waters and Wetlands

A delineation of potentially jurisdictional waters and wetlands was conducted by Aspen biologists in March 2019. The Study Area for the jurisdictional delineation includes all permanent and temporary

impact areas of the Project as well as areas immediately downstream of the Project components. The Study Area was evaluated for the presence of federal non-wetland waters, federal wetland waters, Waters of the State, and CDFW jurisdictional waters. See the *Preliminary Jurisdictional Waters/Wetlands Delineation Report* (Appendix D) for a detailed description of delineation methodology and results.

All the potentially jurisdictional features mapped within the Study Area are characterized as ephemeral desert dry washes. The Project site supports channel features meeting two types of jurisdictional criteria: non-wetland waters of the United States and CDFW jurisdictional waters. In this case, both jurisdictional criteria apply congruently to the same channels. Using a combination of vegetation mapping, bed and bank delineation, and field observations, approximately 19.88 acres (21,568 linear feet) of CDFW jurisdictional waters and 15.12 acres (20,398 linear feet) of Waters of the U.S. and State were identified within the Study Area (see Figure 3.6-11 and Table 3.6-7). Refer to Appendix D for further details on impact acreages for the proposed Project.

Table 3.6-7. Acreage of Jurisdictional Waters, Wetlands, and CDFW Jurisdictional Habitat

	CDFW Jurisdictional Waters			USACE / Water Board Waters and Wetlands		
	Non-wetland CDFW Jurisdictional Waters (acres)	Non-wetland CDFW Jurisdictional Waters (linear feet)	Wetlands (acres)	Non-wetland Waters of U.S. and State Jurisdictional Waters* (acres)	Non-wetland Waters of the U.S. and State Jurisdictional Waters* (linear feet)	Wetlands (acres)
Temporary	4.90	3,468	0	4.50	3,236	0
Permanent	14.98	18,100	0	10.62	17,162	0
Project Totals	**19.88**	**21,568**	**0**	**15.12**	**20,398**	**0**
Downstream (Indirect)	37.01	3,218	0	17.98	75,407	0

* Non-wetland Waters of the United States and Non-wetland Waters of the State overlap, as such jurisdictional acreages are not additive.

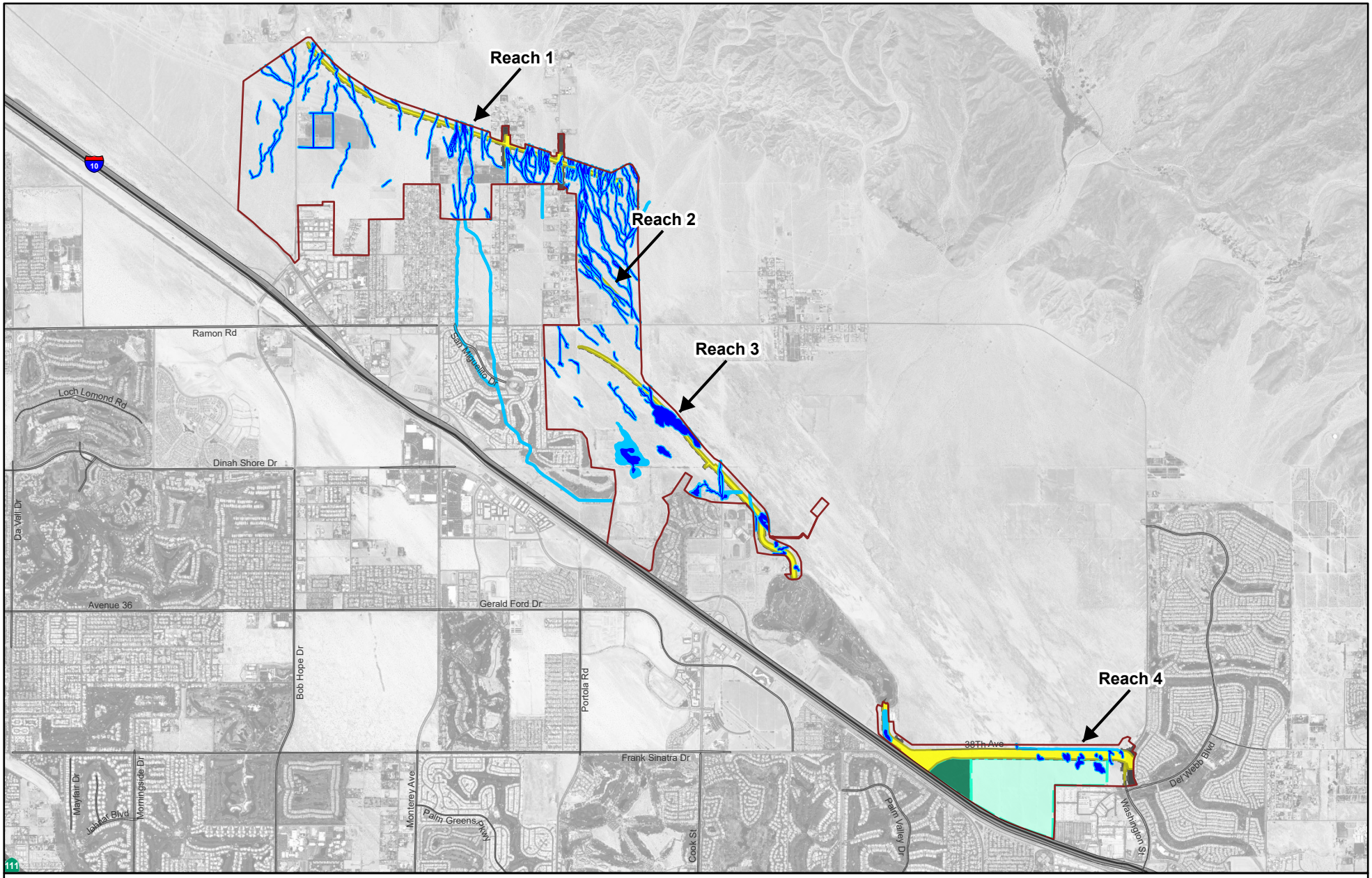


Figure 3.6-11

Federal and State Jurisdictional Waters

3.6.2 Regulatory Framework

The following are federal, State, and local laws, ordinances, regulations, and standards that apply to biological resources and jurisdictional waters and wetlands.

3.6.2.1 Federal

National Environmental Policy Act (42 USC Section 4321 et seq.)

Directs federal policy regarding environmental protection, including requirements for federal agencies to evaluate and publicly disclose the environmental effects of proposed projects in published documents such as environmental assessments or environmental impact statements (EISs).

Endangered Species Act (16 USC Sections 1531-1543)

Establishes legal requirements for conservation of endangered and threatened species and the ecosystems upon which they depend. Administered by the U.S. Fish and Wildlife Service (USFWS). Under the Endangered Species Act (ESA), the USFWS may designate critical habitat for listed species. Section 7 of the ESA requires federal agencies to consult with USFWS to ensure that their actions are not likely to jeopardize listed threatened or endangered species, or cause destruction or adverse modification of critical habitat. Section 10 of the ESA requires similar consultation for non-federal applicants. The Project's ESA status, including prior consultation, ESA coverage under the CVMSHCP/NCCP, and potential further consultation, are described in further detail below, under Endangered Species Act Consultation.

Clean Water Act (33 USC Sections 1251-1376)

Regulates the chemical, physical, and biological integrity of the nation's waters. Section 401 of the Clean Water Act (CWA) requires that an applicant obtain State certification for discharge into waters of the United States. The Regional Water Quality Control Boards (RWQCBs) administer the certification program in California. Section 404 of the CWA establishes a permit program, administered by the U.S. Army Corps of Engineers (USACE), to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Individual projects may qualify under "Nationwide General Permits," or may require project-specific "Individual Permits."

Plant Protection Act of 2000

Prevents importation, exportation, and spread of pests that are injurious to plants, and provides for the certification of plants and the control and eradication of plant pests. The Act consolidates requirements previously contained within multiple federal regulations including the Federal Noxious Weed Act, the Plant Quarantine Act, and the Federal Plant Pest Act.

Migratory Bird Treaty Act (16 USC Sections 703-711)

Prohibits take of any migratory bird, including eggs or active nests, except as permitted by regulation (e.g., licensed hunting of waterfowl or upland game species). Under the Migratory Bird Treaty Act (MBTA), "migratory bird" is broadly defined as "any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle" and thus applies to most native bird species.

Bald and Golden Eagle Protection Act (16 USC Section 668)

Prohibits the take, possession, and commerce of bald eagles and golden eagles. Under the Bald and Golden Eagle Protection Act (BGEPA) and subsequent rules published by the USFWS, "take" may include actions that injure an eagle or affect reproductive success (productivity) by substantially interfering with normal behavior or causing nest abandonment. The USFWS may authorize incidental take of bald and golden eagles for otherwise lawful activities.

Fish and Wildlife Coordination Act (16 USC Sections 661 666)

Applies to any federal project where the waters of any stream or other body of water are impounded, diverted, deepened, or otherwise modified. Requires consultation among USFWS and State wildlife agency. Implemented through the NEPA process and Section 404 permit process.

Executive Order 13112, Invasive Species

Establishes the National Invasive Species Council and directs federal agencies to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts caused by invasive species.

3.6.2.2 State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects through alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by State lead agencies. Regulations for implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

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

Prohibits take of State-listed threatened or endangered species, except as authorized by the California Department of Fish and Wildlife (CDFW). Authorization may be issued as an Incidental Take Permit or, for species listed under both the California Endangered Species Act (CESA) and the federal ESA, through a Consistency Determination with the federal incidental take authorization.

California Code of Regulations (Title 14, sections 670.2 and 670.5)

Identifies the plants and animals of California that are declared rare, threatened, or endangered.

Fully Protected Designations (Fish and Game Code Sections 3511, 4700, 5515, and 5050)

Designates 36 fish and wildlife species as "fully protected" from take, including hunting, harvesting, and other activities. The CDFW may only authorize take of designated fully protected species through a Natural Community Conservation Plan (NCCP).

Native Birds (Fish and Game Code Sections 3503, 3503.5, and 3513)

Prohibits take, possession, or needless destruction of birds, nests, or eggs except as otherwise provided by the code. Section 3513 provides for the adoption of the MBTA's provisions (above).

Protected Furbearers (California Code of Regulations Title 14 Section 460)

Specifies that "fisher, marten, river otter, desert kit fox and red fox may not be taken at any time." The CDFW may permit capture or handing of these species for scientific research, but does not issue Incidental Take Permits for other purposes.

Natural Community Conservation Planning Act (Fish and Game Code Section 2800 et seq.)

Provides a regional approach to conservation. Natural Community Conservation Plans (NCCPs) are developed and implemented by CDFW in cooperation with private and public partners, to protect species and their habitats while allowing for compatible and appropriate economic activity. The proposed Project is within an NCCP area, the Coachella Valley MSHCP (CVMSHCP/NCCP), addressed in more detail below under Coachella Valley Multiple Species Habitat Conservation Plan.

Lake and Streambed Alteration Agreements (Fish and Game Code Section 1600-1616)

The CDFW regulates projects that would divert, obstruct, or change the natural flow, bed, channel, or bank of a river, stream, or lake. Regulation is formalized in a Lake and Streambed Alteration Agreement (LSAA), which generally includes measures to protect any fish or wildlife resources that may be substantially affected by the project.

Porter-Cologne Water Quality Control Act (Water Code Section 13000 et seq.)

Regulates surface water and groundwater and assigns responsibility for implementing federal CWA Section 401. Establishes the State Water Resources Control Board (SWRCB) and nine RWQCBs to protect State waters. The Study Area lies within watersheds regulated by two RWQCBs: the Santa Ana and Colorado River RWQCBs.

State-Regulated Waters

The SWRCB is the State agency (together with the RWQCBs) charged with implementing water quality certification in California.

The CDFW extends the definition of stream to include intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.

Native Plant Protection Act (Fish & Game Code 1900-1913)

California's Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants.

3.6.2.3 Local

Riverside County General Plan

The County of Riverside General Plan Multipurpose Open Space Element establishes policies to preserve and protect biological resources (Riverside County, 2015), including:

- **Policy OS 9.3** Maintain and conserve superior examples of native trees, natural vegetation, stands of established trees, and other features for ecosystem, aesthetic, and water conservation purposes.

- **Policy OS 17.2** Enforce the provisions of applicable MSHCPs, and implement related Riverside County policies when conducting review of development applications.
- **Policy OS 18.1** Preserve multi-species habitat resources in the County of Riverside through the enforcement of the provisions of applicable MSHCPs, and through implementing related Riverside County policies.
- **Policy OS 20.1** Preserve and maintain open space that protects County environmental and other non-renewable resources and maximizes public health and safety in areas where significant environmental hazards and resources exist.

Western Coachella Valley Area Plan

This plan is an extension of the County of Riverside General Plan and has been designed to guide physical development and land uses in the unincorporated western portion of the Coachella Valley (Riverside County, 2021). The plan promotes preservation of open space and sensitive habitat areas, including fringe-toed lizard habitat and alluvial fan areas.

3.6.2.4 Coachella Valley Multiple Species Habitat Conservation Plan

The CVMSHCP/NCCP provides long-term conservation and habitat protection for the 27 species of special-status plants and animals that are covered under the plan. It provides California Endangered Species Act (CESA) and federal Endangered Species Act (FESA) take of these covered species for conforming projects, subject to the plan's administrative and mitigation requirements and USFWS and CDFW take authorizations subject to the Plan's administrative and mitigation requirements and USFWS and CDFW take authorizations (CVCC, 2007). The CVMSHCP/NCCP is managed by the Coachella Valley Conservation Commission (CVCC), a joint powers authority of elected representatives, and funded through a combination of development impact fees, open space trust funds, and funding from permittees for infrastructure projects (CVCC, 2007).

The Project site is within the area covered by the CVMSHCP/NCCP and the CVWD is a CVMSHCP/NCCP permittee. As a permittee, CVWD has 'take'[3] authorization for covered species or loss of their habitat, as specified in the CVMSHCP/NCCP permits, so long as compliance with the requirements of the CVMSHCP/NCCP is achieved (see Section 4.6.2 of this EIR/EIS for details).

The CVMSHCP/NCCP identifies four conservation areas in the Coachella Valley: Thousand Palms, Whitewater Floodplain, Willow Hole, and Edom Hill. Per the CVMSHCP/NCCP, the final Project design was expected to cause a minor adjustment of the Thousand Palms Conservation Area such that the levees define the Conservation Area boundary but would not be within the Conservation Area itself (CVMSHCP/NCCP, page 4-96; CVCC, 2007). However, in the intervening years, the Conservation Area boundaries have been established as shown on Figure 3.6-1, and the current Project design has been modified somewhat from that described in the 2000 EIS/EIR. In August 2021, CVCC conducted an analysis of the proposed Action and determined the design of the Project and Conservation Area boundary adjustment do not conflict with the goals of the CVMSHCP/NCCP a (see Appendix C.5). Based on this analysis the levee footprint does not occur within the Conservation Area.

[3] Under the Federal Endangered Species Act, 'take' is defined as, "…to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (USFWS, 2011b). Under Section 86 of the California Fish and Game Code, 'take' is defined as "…hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (CDFW, 2021d).

The CVMSHCP/NCCP identifies specific avoidance and minimization requirements for certain species in specific designated conservation areas. The species with avoidance and minimization requirements applicable to the Project are: burrowing owl, crissal thrasher, and Le Conte's thrasher. In addition, the CVMSHCP/NCCP identifies specific conservation objectives for Sections 7 and 8 (i.e., the location of Project Reach 1) to minimize future impacts to sand transport as follows:

- Development shall not impede fluvial sand transport;
- Development shall be limited to 50 percent of parcels less than 4 acres and limited to 2 acres on parcels larger than 4 acres, undeveloped portions shall be permanently conserved as open space
- Driveways shall be at grade
- CVCC shall continue acquisition of vacant parcels
- CVCC and the County shall implement a land exchange program

The project's consistency with the CVMSHCP/NCCP is discussed in Section 4.6.2.1, under Impact BIO-21. The CVMSHCP/NCCP requires a Joint Project Review Process for all projects under a permittee's jurisdiction within a Conservation Area that would result in disturbance to habitat, natural communities, biological corridors, or essential ecological processes. This process is designed to ensure consistent implementation and oversight of the CVMSHCP/NCCP and involves the CVCC, the permittee (CVWD in this case), and wildlife agencies (USFWS and CDFW). During the process, the CVCC conducts an analysis of the proposed Project's potential impact to Conservation Objectives for the Conservation Area, CVMSHCP/NCCP Required Measures for the Conservation Area, Covered Species' Goals and Objectives, and maintenance of Rough Step in the Conservation Area (Rough Step analysis is done to ensure that CVMSHCP/NCCP objectives are being met). If the analysis identifies inconsistencies between the proposed Project and CVMSHCP/NCCP objectives and requirements, the permittee and CVCC staff meet and confer to identify requirements necessary to achieve compliance (CVCC, 2007).

For CVWD flood control facilities, covered O&M activities are defined in Section 7.3.1.1 (page 7-48) of the CVMHCP:

- The removal of sand, silt, sediment, debris, rubbish, woody, and herbaceous vegetation in existing flood control facilities in order to maintain design capacity of the facility and/or compliance with local fire regulations.
- Control of weeds and vegetation by non-chemical means, and control of debris on all access roads and CVWD rights-of-way.
- The repair or replacement of constructed flood control facilities, such as channels, basins, drop structures, and levees, as necessary to maintain the structural integrity and hydraulic capacity of the facility.

In August 2021, the CVCC prepared a consistency determination of the proposed Project's 2021 alignment with the CVMSHCP/NCCP (see Appendix C.5). CVCC concluded that the proposed Project constitutes a Covered Project under Section 7.3.1 in the Thousand Palms Conservation Area and the proposed alignment only constitutes a minor adjustment from the originally contemplated 2000 alignment. The Thousand Palms Conservation Area will be adjusted to exclude the permanent impacts of the proposed 2021 Project alignment, which will result in an approximately 301-acre (1.16 percent acreage reduction) change from the Conservation Area. Reaches 1 through 3 will represent portions of the new western boundary of the Conservation Area. Reach 4 did not previously cross into the Conservation Area but will represent the edge of the southern boundary. Temporary impacts associated with the proposed Project

will occur within the Conservation Area and are therefore subject to Section 4.4 Avoidance, Minimization, and Mitigation requirements of the CVMSHCP. CVCC determined that the 550 acres of conservation land within the Conservation Area floodway acquired by CVWD is consistent with the CVMSHCP Section 5.2.1.4 mitigation requirement. CVCC also acknowledges that CVWD already met its financial obligation under the CVMSHCP. Refer to Appendix C.5 for further description about the CVCC consistency determination.

CVMSHCP/NCCP-covered species that occur or have a moderate or high likelihood to occur in the Project Study Area are: Coachella Valley fringe-toed lizard (*Uma inornata*), Coachella Valley milk-vetch (*Astragalus lentiginosus var. coachellae*), burrowing owl (*Athene cunicularia*), Palm Springs (=Coachella Valley) round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*), Coachella Valley giant sand-treader cricket (*Macrobaenetes valgum*), Coachella Valley Jerusalem cricket (*Stenopelmatus cahuilaensis*), flat-tailed horned lizard (*Phrynosoma mcallii*), and Le Conte's thrasher (*Toxostoma lecontei*). Desert tortoise (*Gopherus agassizii*) has a low potential to occur. The Project site includes one sensitive habitat type, as defined by the CVMSHCP/NCCP: desert dunes.

This analysis in Section 4.6.2 evaluates each potential impact to biological resources in terms of consistency with the CVMSHCP/NCCP, and overall Project consistency with the CVMSHCP/NCCP is discussed in Section 4.6.2, under Impact BIO-21, significance criterion 5.

3.6.2.5 Endangered Species Act Consultation

The USACE and USFWS have consulted extensively on the Project and formal consultation was re-initiated in December 2021. The USFWS completed a Fish and Wildlife Coordination Act Report in 2000, which included several recommendations. In addition, in 2000, the US Army Corps of Engineers and USFWS completed Section 7 consultation for the Project as described in the 2000 EIS/EIR (then known as the Whitewater River Basin Flood Control Project), and a No Jeopardy determination was made in the Biological Opinion (BO; USFWS, 2000). The 2000 BO listed Conservation Measures that had been incorporated into the project design because of agency coordination and identified additional Reasonable and Prudent Measures and additional Conservation Recommendations.

After the BO, the Whitewater River Basin Flood Control Project was identified as a CVMSHCP/NCCP-covered activity subject to terms and conditions of the 2000 USFWS Section 7 consultation (CVMSHCP/NCCP, page 7-29; CVCC, 2007). However, due to the subsequent modifications of Project design and delay in Project implementation, the USFWS indicated that the Biological Opinion may no longer be applicable, and that the current project may not be considered a covered activity under the CVMSHCP/NCCP, depending on whether project changes after the 2000 EIS/EIR are considered minor (see Table 4.6-1, Scoping Issues Relevant to Biological Resources). As described in Section 3.6.2.4 above, CVCC determined that the proposed Project is considered a Covered Project under the CVMSHCP/NCCP (Appendix C.5).

The Project site is partially within the Thousand Palms Conservation Area (see Figure 1-2) identified in the CVMSHCP/NCCP (see Coachella Valley Multiple Species Conservation Plan, above). Per the CVMSHCP/NCCP, the Project's levees, as they were planned in the 2000 EIS/EIR, would define the southern edge of this Conservation Area. The final Project design and alignment of the levees were expected to cause a minor adjustment of the Conservation Area boundary such that the levees would not be in the Conservation Area, but would define the edge of the area (CVMSHCP/NCCP, page 4-96; CVCC, 2007). However, in the intervening years, the Conservation Area boundaries have been established as shown on Figure 1-2, and the current Project design has been modified somewhat from that described in the 2000 EIS/EIR.

The CVWD and USACE prepared a Biological Assessment (BA) to support the Clean Water Act Section 404 permit review and approval process for the construction, operation, and maintenance of the proposed Project (see Appendix C.3 for the Draft Biological Assessment). The purpose of this BA is to review the proposed Project in sufficient detail to determine to what extent the USACE permitting action may affect any threatened, endangered, proposed, and candidate (TE) wildlife, fish, and plant species of record and their associated critical habitat (if any) within the scope of USACE's proposed Action. The BA describes impacts from the proposed Action on private and federal lands. Impacts to listed species on private lands are covered through participation in the CVMSHCP/NCCP (CVCC, 2007). The CVWD is a CVMSHCP/NCCP permittee and has taken authorization for impacts to covered species and their habitat. This coverage is authorized provided CVWD complies with and implements the requirements of the CVMSHCP/NCCP. As described in Section 7.0 (Take Authorization for Covered Activities and Term of Permit) of the MSHCP/ NCCP, take authorized as part of the Plan applies only to non-federal lands (CVCC, 2007). Therefore, the BA analyzes impacts to and provides mitigation for effects to listed species on federal lands. The USFWS issued a Biological Opinion for the proposed Project on September 27, 2022 (see Appendix C.6).

3.6.2.6 Consistency

Table 3.6-8 provides a list of county plans and policies that are applicable to biological resources, and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.6-8. Consistency with Applicable Plans and Policies – Biological Resources

Plan/Policy	Consistency	Explanation
County of Riverside General Plan Multipurpose Open Space Element – Policy OS 9.3. Maintain and conserve superior examples.	Yes	Project Environmental Commitments (ECs) and mitigation measures would avoid and minimize impacts to native vegetation, sensitive habitat, and special-status plant species. See Section 4.6 for analysis and discussion.
County of Riverside General Plan Multipurpose Open Space Element – Policies OS 17.2 and OS 18.1. Preserve habitat resources through enforcement of the MSHCP.	Yes	The Project is within the area covered by the CVMSHCP/NCCP and the CVWD is a CVMSHCP/NCCP permittee. The status of the current Project as it relates to the CVMSHCP/NCCP is consistent with the CVMSHCP/NCCP and constitutes a Covered Project; see Section 4.6 and Appendix C.5. In addition, Mitigation Measure BIO-20 requires consistency with the CVMSHCP/NCCP (see Section 4.6).
County of Riverside General Plan Multipurpose Open Space Element – Policy OS 20.1. Preserve and maintain open space.	Yes	Project ECs and mitigation measures would avoid and minimize impacts to native vegetation, sensitive habitat, and habitat for special-status plant and wildlife species. See Section 4.6 for analysis and discussion.
Western Coachella Valley Area Plan	Yes	Project ECs and mitigation measures would avoid and minimize impacts to native vegetation, sensitive habitat, and habitat for special-status plant and wildlife species. See Section 4.6 for analysis and discussion.
Coachella Valley Multiple Species Habitat Conservation Plan/NCCP	Yes	The Project is within the area covered by the CVMSHCP/NCCP and the CVWD is a CVMSHCP/NCCP permittee. The status of the current Project as it relates to the CVMSHCP/NCCP is consistent with the CVMSHCP and Appendix C.5; see Section 4.6. In addition, Mitigation Measure BIO-20 requires consistency with the CVMSHCP/NCCP (see Section 4.6).

3.7 Cultural and Traditional Cultural Properties

This section provides information on existing cultural resources, tribal cultural resources, and Traditional Cultural Properties in the vicinity of the Thousand Palms Flood Control Project (Project) and alternatives. This Project area is defined as Reaches 1 through 4, including levees, channels, and energy dissipating structures as described in Section 2.2.1 (Project Elements), as well as a one-mile buffer surrounding these components for the purposes of baseline data. The primary focus is on the cultural and tribal cultural resources present, and those that could potentially be encountered within Reaches 1 through 4 of the Project.

Cultural resources can reflect the history, diversity, and culture of the region, as well as the people who created them. Cultural resources are unique in that they are often the only remaining evidence of human activity that occurred in the past. Cultural resources can be natural or built, purposeful or accidental, physical, or intangible. They encompass archaeological, traditional, and built environment resources, including but not necessarily limited to buildings, structures, objects, districts, and sites. Cultural resources include locations of important events, traditional cultural places and sacred sites, and places associated with important people. Many cultural resources are present in the Coachella Valley region, located both on the ground surface and buried beneath the ground surface, which could be affected by development without adequate protections in place.

A Traditional Cultural Property (TCP) is a property that is: 1) associated with the lifeways, beliefs, traditions, cultural practices, or social institutions of a living community; and 2) eligible for listing in the National Register of Historic Places.

Similar to TCPs, Tribal cultural resources (TCR) are a newly defined class of resources under Assembly Bill 52 (AB 52). TCRs include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. To qualify as a TCR, the resource must either: 1) be listed on, or be eligible for listing on, the California Register of Historical Resources or other local historic register; or 2) constitute a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC § 21074). Please see Sections 3.15 and 4.15 for a discussion of Tribal cultural resources.

Unless otherwise noted, this section is based on two technical reports and one supplemental memo that were designed to assess the cultural resources sensitivity and impacts of the Project on any existing cultural resources. Each report included a records and literature review followed by field survey of the Project area. The first report is titled, "*Supplemental Cultural Resources Assessment of the Whitewater Flood Damage Reduction Project, County of Riverside, California,"* by Holms and Perry (2010), and includes survey of all four reaches. The second report is titled, "*Supplemental Cultural Resource Assessment for the Whitewater River Basin Flood Control Project (Reaches 1–4), Unincorporated Riverside County, California,"* prepared by George and Smallwood (2015) for fieldwork conducted in March of 2015. The latter documents additional surveys and includes an evaluation of historic resources located in Reach 4. Lastly, since there was an expansion of the Area of Potential Effect, Aspen Environmental Group (Aspen) conducted a supplemental study, producing a memo report titled, "*Thousand Palms Flood Control Project Addendum to the Supplemental Cultural Resource Assessment, Pedestrian Archaeological Survey of Expanded Reach 4,"* prepared by Aspen (2021) for fieldwork conducted in June of 2021.

3.7.1 Environmental Baseline

This section describes the prehistoric and ethnographic cultural setting of the Project area in order to better understand the nature and significance of cultural properties identified within the Coachella Valley region. The availability of water and biological (plant and animal) food resources, as well as topography and climate patterns throughout time have influenced the nature and distribution of human activities in the region. A brief discussion of the environmental setting is included in order to foster a more meaningful discussion about the cultural setting of the Project area.

3.7.1.1 Regional Cultural Resources Setting and Background

The Project area is situated east of the Peninsular Ranges in the northern portion of the Coachella Valley, which is bordered to the southwest by the San Jacinto and Santa Rosa mountains and to the northeast by the low, rolling Indio Hills and Mecca Hills. From the steep slopes of the San Jacinto mountains, surmounted by San Jacinto Peak (3,274 meters [10,804 feet] amsl), the desert floor descends sharply eastward in less than three kilometers (km) (two miles) to sea level. To the south, elevations gradually drop to 90 meters (300 feet) below mean sea level (bmsl) at the Salton Sea Basin. This basin has filled periodically throughout the Pleistocene and Holocene when the Colorado River shifted its course near its mouth at the Gulf of California, flowing north into the basin, forming a large freshwater lake commonly known as Lake Cahuilla (see below). A major water source flowing through the central valley is the Whitewater River, which, prior to the development of the Coachella Valley, drained the southern slope of the San Bernardino Mountains for thousands of years. Prior to the mid-1900s, the climate of the Project area was characterized by low relative humidity, very low precipitation, high summer temperatures of up to 52° Celsius (125° Fahrenheit), and mild winters. Three primary life zones that were exploited by prehistoric inhabitants of the Project area, known ethnographically to have occupied the Coachella Valley, include: Lower Sonoran (up to 1,067 meters elevation), Upper Sonoran (from 1,067 to 1,524 meters), and Transitional (1,524 to 2,134 meters). Important differences in the types of plant and food resources occur in each zone and are reflected in the locations and types of human activities throughout these diverse zones.

Human occupation of the Project area can be classified into three types of cultural resources: prehistoric, ethnographic, and historic period. Prehistoric archaeological resources are associated with the human occupation and use of California prior to European contact. In California, the prehistoric period began over 12,000 years ago and extended through the 18th century until around 1769, with the establishment of the first Spanish mission in San Diego. Ethnographic resources represent the heritage of a particular ethnic or cultural group, such as Native Americans or immigrant groups such as African, European, Latino, or Chinese. Historic period resources, both archaeological and architectural, are associated with non-Native American exploration and settlement of the area and the beginning of a written historical record after the arrival of European colonists. The following prehistoric, ethnographic, and historical background provides the context for the evaluation of the National Register of Historic Places (National Register or NRHP) and California Register of Historical Resources (California Register or CRHR) eligibility of any identified cultural resources within the Project study area.

Lake Cahuilla

The most important physiographic feature in the study of the prehistory of the Coachella Valley is Lake Cahuilla; the modern iteration of which is the Salton Sea. As a rare source of fresh water in the desert, human populations were attracted to live and gather plant and animal resources near the lake. This enormous lake periodically formed when flooding in the Colorado River broke through low-lying areas

and flooded the Salton Trough, inundating up to an average elevation of about 40 feet above mean sea level (amsl). Based on modern data regarding the flow of water in the lower Colorado River and Salton Trough rate of evaporation, a full cycle of inundation and desiccation would have taken about three-quarters of a century. This includes a minimum of about 18 years for the river to fill the basin and a minimum of 56 years for the lake to dry up after it was isolated from the Colorado River (Schaefer and Laylander, 2007). Early researchers thought Lake Cahuilla had been a single episode lake existing for at least five centuries, between 1000 and 500 years before present (BP) (Laylander, 2005). However, studies have indicated that there were repeated lake formations; with at least four cycles since 1300 years BP and an unknown number prior to 2000 years BP (Waters, 1983). Laylander (1995) established the existence of a substantial stand for the lake in the 17th century AD. Radiocarbon dating, stratigraphic deposits, and observations over the last 150 years show that the rise and fall of the lake were cyclical events that occurred perhaps every 200 to 300 years. Human occupation sites mark the ancient shorelines both above the high stand mark and along the lower, retreating shorelines (Waters, 1983; Laylander, 2005).

The ancient shoreline of Lake Cahuilla nearly surrounds the Salton Trough. On the surface, the Salton Trough exhibits ancient lakebed sediments, alluvial channels, and dune sands. The central portion (Coachella and Imperial Valleys, Salton Sink) is covered by clay and silt deposits from the prehistoric lake stands. Shoreline deposits circumscribe the central lakebed deposits and consist mostly of unconsolidated sand and gravel, grading into silts and clays. During the Late Prehistoric period, Lake Cahuilla stretched from north of Indio to south of Mexicali (Laylander, 1995).

Prehistory

Human populations have occupied the Coachella Valley for at least 12,000 years. However, little is known about the prehistory of the region compared to other parts of California. In part, this is the result of fewer research projects and because of natural processes that have buried or eroded many sites. Human action through agricultural and other developments has also played a part in this destruction.

The cultural-historical chronology of the Colorado Desert can be divided into five cultural periods: San Dieguito (ca. 12,000–7000 BP); Pinto (ca. 7000–4000 BP); Amargosa (ca. 4000–1200 BP); and, the Late Prehistoric Period (ca. 1200–200 BP), which ended in the ethnographic period. Due to the nature and temporal assignment of archaeological sites identified within a one-mile radius of the Project area, the prehistoric cultural setting discussed below begins at the Late Prehistoric period.

Late Prehistoric Period

The Late Prehistoric period in the Colorado Desert is marked by the introduction of new artifact types and technological innovations of the previous Amargosa Period of the Late Archaic and is defined as the Patayan Pattern. This period is characterized by the introduction of ceramics, including Tizon Brown Ware from the Peninsular Ranges, Colorado Buff Wares from the Colorado River region, and the Salton Buff Ware from the Lake Cahuilla shoreline. New projectile point types, including Desert Side-notched and Cottonwood Triangular points, signify the introduction of the bow and arrow hunting technology, marking a pre-ceramic phase of the expansion of the earlier Amargosa assemblages perhaps as early as 1500 BP. Techniques of floodplain horticultural practices were also introduced to the inhabitants along the Colorado River at the same time as ceramics. Additionally, burial practices changed from extended inhumations to cremated remains, sometimes buried in ceramic vessels. Typical of the Hohokam culture from southern Arizona, these traits were introduced to the Colorado River inhabitants and gradually spread west to the Peninsular Ranges and Coastal Plains of southern California.

The Patayan Pattern is typified by several differing settlement and subsistence systems. Along the Colorado River, dispersed seasonal settlements were composed of jacal (i.e., adobe style) structures, semi-subterranean pit houses, ramadas, or brush huts, depending on the season and types of settlement. Larger rancherias or villages would disperse to upper terraces of the Colorado River and to special collection areas during the summer months, coinciding with the flood phase of the river, and then return to the lower terraces for plant harvesting. At the eastern base of the Peninsular Ranges, the settlement pattern was typified by dispersed rancherias situated at the mouths of canyons supporting perennial streams, at the base of alluvial fans near springs, or down on the valley floor where a shallow water table allowed wells to be dug (e.g., at Indian Wells). In addition to these sites, specialized sites were located in all of the micro-environmental zones that were exploited seasonally. Archaeologically, these specialized sites can range in characteristics from bedrock milling features and pot-drops along trails, to chipping stations and quarries, to temporary camps containing bone, shell, ceramics, flaked and ground stone tools, and ornamental items such as beads and pendants, as well as other occupational debris.

Three phases of the Patayan Pattern are generally recognized in addition to the pre-ceramic phase. These phases are defined by changes in pottery frequencies and by the cultural and demographic effects of the infilling and subsequent desiccation of Lake Cahuilla. The Patayan I phase appears to have been confined to the Colorado River region and began approximately 1,200 years ago with the introduction of pottery; the artifact assemblage of this phase bears the closest similarity to that of the Hohokam. The Patayan II phase began about 950 years ago. Attracted to highly productive microenvironments along the Lake Cahuilla shoreline, people on both its eastern and western shores were producing pottery by the time the lake was fully formed. New ceramic types indicate that sedimentary, non-marine clays from the Peninsular Ranges were being utilized. The final Patayan III phase began approximately 500 years ago. This phase is characterized by new pottery types that reflect changes in settlement patterns, as well as with intensified communication between the Colorado River and Peninsular Ranges tribes as people living around the former Lake Cahuilla shoreline dispersed to their base territories, and the Imperial and Coachella valleys dried up, facilitating long distance travel. By approximately 250 years ago, with the final desiccation of Lake Cahuilla prior to the 20th century, the native inhabitants occupying its shores began moving westward into areas such as Anza-Borrego, Coyote Canyon, the Upper Coachella Valley, the Little San Bernardino Mountains, the San Jacinto Valley, and Perris Plain.

Ethnographic Period

The Patayan III phase continued into the ethnographic period, ending in the late 19th century when Euro-American intrusions disrupted the traditional culture. Although the Patayan III peoples include the Takic-speaking Cahuilla, who occupied the western Colorado Desert region, as well as the Quechan, Mojave, and Cocopa of the Colorado River region, the following discussion of the ethnographic setting focuses on the Cahuilla, as they are known to have occupied the Project region encompassed by the Coachella Valley.

Ethnographic History

At the time of European contact, the Coachella Valley and surrounding mountains were occupied by an ethnolinguistic group now referred to as the Cahuilla. The Cahuilla language belongs to the Takic branch of the Shoshonean family, part of the larger Uto-Aztecan language stock. The Cahuilla are generally divided by anthropologists into subgroups defined by the topographical settings in which they lived: Pass, Mountain, and Desert. The Coachella Valley was within the area occupied by the Desert Cahuilla, although the Pass Cahuilla, primarily living in the San Gorgonio Pass, likely used parts of the northwestern valley.

The Cahuilla people were, for the most part, hunting, collecting, harvesting, and protoagricultural peoples. They were noted by the early Spanish missionaries for already having developed agricultural practices for

species of native corn, beans, and squash. These agricultural practices reflect methods used by other groups from the American Southwest. As in most of California, acorns were a major staple, but the roots, leaves, seeds, and fruit of many other plants also were used. Sources of protein were generally fish, birds, insects, and mammals. The mammals included rabbits and hares, mountain sheep, deer, and antelope.

Cahuilla society was not organized into territory-holding tribe or tribelet political groups, rather into clans of related lineages. These clans were the focus of political, social, and ceremonial activities. Clans owned a large territory that generally included valley, foothill, and mountain areas, providing them with the resources of many different ecological niches. Individual lineages or families owned specific resource areas within the clan territory, including a village site with specific resource areas and a ceremonial house. Clan lineages cooperated in defense, in large communal subsistence activities, and in performing rituals. Although any given village had access to a wide array of necessary resources, briskly flourishing systems of trade and exchange gave them access to the resources of their neighboring villages and of distant peoples.

European contact with the Cahuilla was first initiated by the Juan Bautista de Anza expedition, which passed through the region in 1774. Initially, the Indians were hostile to the Europeans. Subsequently, the Europeans used sea routes to populate California because the land route had been closed by the Quechan Indians in 1781. The Cahuilla, therefore, had little direct contact with Europeans. In 1819, several Mission outposts were established near the Cahuilla area; Cahuillas became partially involved with the Spanish and adopted some Spanish economic practices, such as cattle raising, trade, and wage labor, as well as cultural traits such as clothing styles, language, and religion. Some Cahuillas worked seasonally for the Spaniards and lived for the remainder of the year in their villages. At the time of the American annexation of California, the Cahuilla still maintained their political and economic autonomy. The first official United States land survey in southern California in the mid-1850's noted eight Indian villages or rancherias within the Eastern Coachella Valley region, presumably occupied by the Desert Cahuilla people.

History

The history of the region is generally divided into the Spanish (1769-1821), Mexican (1821-1846), and American (post-1846) periods. The historic period began in the 1790s with Spanish and Mexican expeditions moving through the Coachella Valley, but little actual settlement began until the Southern Pacific Railroad line was finished in 1876. With the coming of the railroad, non-native settlements began to flourish across the Coachella Valley as new federal laws, including the Homestead Act and Desert Land Act, opened up lands for new settlers. The discovery of underground water sources began to increase farming activities throughout the Valley in the early 20th century.

The community of Thousand Palms traces its roots back to the Southern Pacific Railroad depot at Edom, founded in 1876. A handful of homesteaders arrived to the area around 1904 and drilled water wells for their agricultural pursuits, which were primarily citrus and dates. Around the 1910s, the predecessor to U.S. Highway 60/70/99 was graded past Edom, providing a quicker route between Los Angeles, San Bernardino, and points east. The town soon prospered, and development expanded to both sides of the highway. A school was built, and after World War II, the community of Thousand Palms began to take shape, with restaurants, motels, service stations, and local produce shops emerging. The first subdivision development at Thousand Palms, known as Shangri La Palms, was built a short distance to the east of town around 1948. Interest in the area after World War II (WWII) resulted in the formation of numerous southern California desert communities, such as nearby Palm Desert, Rancho Mirage, and Borrego Springs, while the already formed communities of Desert Hot Springs, Palm Springs, and La Quinta experienced a boom in the desert resort and golf club development. As in other parts of the Coachella Valley after WWII, the warm, dry climate of the region during winter months lured people in from the

colder northern states and Canada. Guest ranches and winter resorts were popular at that time and became ubiquitous in the northern Coachella Valley landscape.

In 1957, U.S. Highway 60/70/99 was rerouted a short distance to the south and became Interstate 10, while the old highway route became Varner Road. Businesses that had once depended on the highway traffic suffered a decline in sales and began to deteriorate. However, an emergence of light industry in Thousand Palms around that same time saved the community, although it continued to grow at a very slow pace in the decades to follow. In recent decades, development of the Thousand Palms area has moved westward toward Rio Del Sol Road.

3.7.1.2 Baseline Data Collection Methodology

This section provides a description of the methodology used to assess cultural and tribal cultural resources in the study area. To assess the effect of a project on cultural resources, an agency defines an Area of Potential Effect (APE), which is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties. In similar fashion, USACE defines a "Permit Area" associated with a Clean Water Act Section 404 permitting action to identify an area of interest for assessing the potential effects of the issuance of a permit on cultural resources (33 CFR Part 325, Appendix C). A Permit Area is defined as those areas comprising the waters of the United States that will be directly affected by the proposed work or structures and uplands directly affected as a result of authorizing the work or structures. In general, the APE and the Permit Area do not necessarily define the same area, depending on how USACE defines its scope of analysis, but for this project, the APE and Permit Area define the same area and are referred to collectively as the APE, which is defined as the construction footprint for Reaches 1-4. Section 3.7.2 below provides additional explanation of the regulatory framework. Information on cultural resources was collected through a combination of record searches, literature review, pedestrian survey and inventory, and focused evaluations for the eligibility of resources to be listed on the National Register of Historic Places (National Register) or California Register of Historical Resources (California Register). These efforts are detailed in the supporting technical documentation in Holms and Perry (2010), George and Smallwood (2015), and Aspen (2021). Information on tribal cultural resources was gathered during tribal consultation that occurred between CVWD and tribal groups who expressed interest in consulting about the Project.

Records Search and Archival Research

The records search and archival research is a summary of literature, site records, and other documents that describe the cultural resources within a one-mile radius of the Project. In 2008, an initial records search was performed at the request of US Army Corps of Engineers (USACE) at the Eastern Information Center (EIC) of the California Historical Resources Information System (CHRIS) for Reaches 1-3. An additional cultural resources literature and records search for Reach 4 was conducted at the EIC in 2012. A third records search was conducted in 2013 as an update to the records search performed by the USACE as part of their 2010 study covering Reaches 1–3. The objective of these records searches was to determine whether any prehistoric or historic period cultural resources had been recorded previously within Reaches 1-4 or within a one-mile radius. Additionally, historic period maps and ethnographic documents were consulted to gauge the potential for the Project area to contain unrecorded cultural resources.

Pedestrian Survey

Cultural resources pedestrian surveys of the Project alignments for Reaches 1-3 were conducted by USACE archaeologists in April and August 2010. The archaeologists were spaced 20 meters (66 feet) apart and 20

meters from the staked levee centerline. The archaeologists walked two transects on either side of the levee centerline; this provided for 60 meters (198 feet) of coverage on each side of the levee centerline. An additional cultural resource pedestrian survey of the Reach 4 alignment was performed on October 23, 2012. This survey consisted of 10 to 15 meters (33 to 50 feet) transect spacing within Reach 4. All identified cultural resources were recorded on California Department of Parks and Recreation (DPR) forms. A sketch map was made of each feature and for each site. The locations of each feature were recorded with a GPS unit.

A field evaluation to determine National and California Register eligibility of an identified resource in Reach 1 was conducted in July 2013. Most of the resource was evaluated on site; however, inaccessible portions were analyzed through historical maps, aerial photographs, and background research. This evaluation recommended the site as being not eligible for the National and California Registers. The State Historic Preservation Office (SHPO) sent a letter of concurrence regarding the ineligibility of this resource to the USACE on August 25, 2021 (see Appendix E).

In addition, on June 9, 2021, a pedestrian survey of the area south of Reach 4 was conducted to verify site conditions. This area will be subject to disturbance to support construction of the project and includes a concrete batch plant/marshalling yard and an area that would be used for soil deposition. The two areas were surveyed using intuitive, opportunistic transect intervals. No prehistoric or historic aged resources were identified within the concrete batch plant/marshalling yard area, or the area designated for soil deposition.

After the conclusion of the 2021 supplemental survey, the entire APE has been surveyed for cultural resources and the SHPO sent a letter to the USACE on August 25, 2021, concurring with USACE's finding of no historic properties affect by this Project (see Appendix E).

National Historic Preservation Act (NHPA) Section 106 Native American Consultation

Reaches 1-3

On September 12, 2008, the USACE contacted the Native American Heritage Commission (NAHC) requesting that they perform a search of their Sacred Lands File in order to identify any Native American cultural sites inside or within the vicinity of the APE. On April 27, 2009, the NAHC provided a list of Native American contacts that are affiliated with the Project area. The USACE sent a consultation letter and Project area map to the individuals listed on the NAHC Native American Contact list.

Two tribes responded, the Agua Caliente Band of Cahuilla Indians and the Cahuilla Band of Indians. The Agua Caliente Tribal Historical Preservation Officer (THPO) replied requesting that 100 percent of the area of potential effect (APE) be surveyed, qualified cultural resources [Native American] monitors and qualified archaeological monitors be present during all ground disturbing activities, and that any cultural resources documents produced during planning or construction stages of the Project be provided to the Tribe. The Cahuilla Band of Indians Tribal Environmental Protection Office also requested any cultural resources documents be provided to them.

Reach 4

The NAHC was contacted on October 11, 2012 for a review of the Sacred Lands File, to determine if any known Native American cultural properties (e.g., traditional use or gathering areas, places of religious or sacred activity, etc.) are present within or adjacent to Reach 4. The NAHC responded on October 12, 2012, stating that no Native American cultural resources were identified within one-half mile of the Reach 4 alignment. The NAHC requested that Native American individuals and organizations be contacted to elicit

information and/or concerns regarding cultural resource issues related to the Project. A letter describing the Project and asking these individuals and organizations for their input was sent via United States Postal Service (USPS) and electronic mail on October 25, 2012. A second attempt at correspondence was made on November 9, 2012.

Eight tribal persons/groups identified by the NAHC were contacted by letter. The Augustine Band of Cahuilla Mission Indians recommended contracting a monitor who is qualified in Native American cultural resources identification to be on site full-time during construction of the Project. The Tribe also requested to be notified if any cultural resources are discovered during development of the Project. As of March 2016, no response was received from the Agua Caliente Band of Cahuilla Indians, Cabazon Band of Mission Indians, Santa Rosa Band of Mission Indians, Torres Martinez Desert Cahuilla Indians, Morongo Band of Mission Indians, Cahuilla Band of Indians, or the Ramona Band of Mission Indians.

All Reaches

In 2021, Corps Regulatory reinitiated tribal consultation because of the shifting agency role by the USACE for this project and changes to the project that had occurred since initial consultation by Corps Planning. A similar process was followed as described above. The Agua Caliente Band of Cahuilla Indians provided the only substantive response. They requested the following:

- Formal government to government consultation [staff level] under Section 106 of the National Historic Preservation Act with the lead agency
- The presence of an approved Agua Caliente Native American Cultural Resource Monitor(s) during any ground disturbing activities (including archaeological testing and surveys). Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.

3.7.2 Regulatory Framework

Numerous laws, ordinances, regulations, and standards seek to protect and manage cultural resources and tribal cultural resources. Due to the location of the Project on private land within California, and that the Project involves federal, State, and local funding, all laws and regulations were followed. The primary federal regulation governing significant cultural resources is the NHPA. State regulations include the California Environmental Quality Act (CEQA) and Public Resources Code (PRC) Section 5097. Local regulations include the Riverside County General Plan.

Federal

Antiquities Act of 1906 (16 U.S.C. 431-433) authorizes the president to designate as national monuments historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on lands owned or controlled by the United States. The act allows the Secretaries of the Interior, Agriculture, and War (now Army) to issue permits for the examination of ruins, excavation of archaeological sites, and the gathering of objects of antiquity on lands under respective jurisdictions and identifies penalties for violations.

National Historic Preservation Act of 1966, as Amended (NHPA) (Public Law [PL] 89-665; 16 U.S.C. 470-1) requires each state to appoint a State Historic Preservation Officer (SHPO) and authorizes tribes to appoint Tribal Historic Preservation Officers (THPO) to direct and conduct a comprehensive state or reservation-wide survey of historic properties and maintain an inventory of such properties. This act also created the

Advisory Council on Historic Preservation (ACHP), which provides both national oversight and dispute resolution. Further, the act established the NRHP and charged the National Park Service with maintaining the NRHP and promulgating various policies and guidelines for identifying, documenting, nominating, protecting, preserving, and restoring historic properties that may be eligible for the NRHP. This act also has particular provisions for assuring the confidentiality of sensitive cultural resources information.

Sections 106 and 110 of this act have specific bearing on federal agency historic preservation activities and the management of historic properties. Section 106 requires federal agencies to consider the effects of their undertakings on historic properties and to afford the ACHP a reasonable opportunity to comment on those undertakings. Under Section 106, an undertaking collectively refers to all projects, activities, or programs funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency, those carried out by federal financial assistance, and those requiring a federal permit, license, or approval.

Federal agencies must meet their Section 106 responsibilities as set forth in the regulations (36 CFR Part 800). Federal agencies must conduct the necessary studies and consultations to identify cultural resources that may be affected by an undertaking, evaluate cultural resources that may be affected to determine if they are eligible for the NRHP (that is, whether identified resources constitute historic properties), and assess whether such historic properties would be adversely affected. Historic properties are resources listed on or eligible for listing on the NRHP (36 CFR 800.16[l][1]). A property may be listed in the NRHP if it meets criteria provided in the NRHP regulations (36 CFR 60.4). Typically, such properties must also be 50 years or older (36 CFR 60.4[d]).

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, or association and:

- That are associated with events that have made a significant contribution to the broad patterns of our history; or
- That are associated with the lives of persons significant in our past; or
- That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- That have yielded, or may be likely to yield, information important in prehistory or history.

Some property types do not typically qualify for the NRHP; however, these properties may qualify if they fall into one or more of the following considerations (36 CFR 60.4):

- A religious property deriving primary significance from architectural or artistic distinction or historical importance;
- A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event;
- A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with [the person's] productive life;
- A cemetery which derives its primary significance from graves of persons of transcendent importance from age, from distinctive design features, or from association with historic events;

- A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived;
- A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- A property achieving significance within the past 50 years if it is of exceptional importance.

Section 106 defines an adverse effect as an effect that alters, directly or indirectly, the qualities that make a resource eligible for listing in the NRHP (36 CFR 800.5[a][1]). Consideration must be given to the property's location, design, setting, materials, workmanship, feeling, and association, to the extent that these qualities contribute to the integrity and significance of the resource. Adverse effects may be direct and reasonably foreseeable or may be more remote in time or distance (36 CFR 8010.5[a][1]).

The federal agency is required to consult with SHPO(s)/THPO(s); Indian tribes (federally recognized) and Native Hawaiian organizations; representatives of local governments; applicants for federal assistance, permits, licenses, and other approvals; and additional interested parties (e.g., the public). These parties may participate in the entire Section 106 process, including identifying historic properties, assessing adverse effects, and resolving adverse effects. The California SHPO and the ACHP strongly suggest that Indian tribes that are not federally recognized be consulted as "other interested parties" under 36 CFR Section 800.2(c)(5) or as members of the public 800.2(d).

Section 110 of the NHPA (16 U.S.C. 470h-2) generally provides that all federal agencies assume responsibility for the preservation and use of historic properties owned or controlled by such agencies. Under Section 110, federal agencies must establish a preservation program for the identification, evaluation, and nomination to the NRHP and for protection of historic properties. The act also includes particular provisions for assuring the confidentiality of sensitive cultural resources information.

Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm) protects archaeological resources on public and Indian lands and acknowledges that archaeological resources are an irreplaceable part of America's heritage. This act applies when a project may involve archaeological resources located on federal or tribal land. The act requires that a permit be obtained before excavation of an archaeological resource on such land can take place, and that artifacts recovered during excavation are curated at an appropriate facility. The act also provides for the notification of Indian tribes when sites of cultural or religious importance could be harmed. This act establishes civil and criminal penalties for the unpermitted excavation, removal, damage, alteration, or defacement of archaeological resources on public or Indian lands. The act also has particular provisions for assuring the confidentiality of sensitive cultural resources information for archaeological excavation (PL 96-95, 16 U.S.C. 470aa-mm et seq.).

Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-13) establishes requirements for the treatment of Native American human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony on federal and tribal land. The act defines the ownership of human remains and associated and unassociated funerary objects and objects of cultural patrimony, giving priority to lineal descendants and Indian tribes (43 CFR 10). In the event of an inadvertent discovery of remains or items, work shall stop in the immediate area and the inadvertent discovery be protected. The federal agency is required to notify and consult with tribes that are, or likely to be, culturally affiliated with the remains and/or associated funerary objects.

Upon a valid repatriation request, the federal agency is required to return any such items to the lineal descendant(s) or specific tribe with whom such items are associated. The act and its implementing regu-

lations contain similar noticing, consulting, and repatriation provisions for planned archaeological excavations (25 U.S.C. 3002[3][c]; 43 CFR 10.3). The act also has particular provisions for assuring the confidentiality of sensitive cultural resources information.

Executive Order 13007 Indian Sacred Sites (1996) sets forth that in managing federal lands, executive branch agencies shall, to the extent practicable, permitted by law, and not inconsistent with essential agency functions, accommodate Indian religious practitioners' access to and ceremonial use of Indian sacred sites. Agencies are to avoid adversely affecting the physical integrity of these sites, maintain the confidentiality of such sites, and inform and consult on a government-to-government basis with tribes concerning any proposed actions or land management policies that may restrict future access to, or ceremonial use of, or adversely affect the physical integrity of sacred sites.

USACE Regulatory Program Regulations, under 33 CFR Part 325, establishes procedures for the processing of Clean Water Act Section 404 permits by USACE. Appendix C in this regulation provides procedures for the protection of historic properties within the context of the USACE's permitting program. As mentioned above, a Permit Area is defined for a permitting action and is used as a geographic basis for determining whether the issuance of a permit will adversely affect historic properties as defined under the NHPA.

State

California Environmental Quality Act (California Public Resources Code Section 21000 et seq.) (1970) establishes that historical and archaeological resources are afforded consideration and protection by the California Environmental Quality Act (CEQA) (14 CCR Section 21083.2, 14 CCR Section 15064). CEQA Guidelines define significant cultural resources under two regulatory designations: historical resources and unique archaeological resources.

A historical resource is a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR"; or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code"; or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record" (14 CCR Section 15064.5[a][3]).

Historical resources automatically listed in the California Register include California cultural resources listed in or formally determined eligible for the National Register and California Historical Landmarks list from No. 770 onward (PRC 5024.1[d]). Locally listed resources are entitled to a presumption of significance unless a preponderance of evidence in the record indicates otherwise.

Under CEQA, a resource is generally considered historically significant if it meets the criteria for listing in the CRHR. A resource must meet at least one of the following criteria (PRC 5024.1; 14 CCR Section 15064.5[a][3]):

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. Title 14, CCR Section 4852(b)(1) adds, "is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States."

- Is associated with the lives of persons important in our past. Title 14, CCR Section 4852(b)(2) adds, "is associated with the lives of persons important to local, California, or national history."
- 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. Title 14, CCR 4852(b)(3) allows a resource to be CRHR eligible if it represents the work of a master.
- Has yielded, or may be likely to yield, information important in prehistory or history. Title 14, CCR 4852(b)(4) specifies that importance in prehistory or history can be defined at the scale of "the local area, California, or the nation."

Historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (14 CCR 4852[c]).

Additionally, CEQA states that it is the responsibility of the lead agency to determine whether the project will have a significant effect on "unique" archaeological resources. An archaeological artifact, object, or site can meet CEQA's definition of a unique archaeological resource even if it does not qualify as a historical resource (PRC 21083.2[g]; 14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if "it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria (PRC 21083.2[g]):

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."
- If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts be taken to preserve these resources in place or provide mitigation measures.

Additionally, under CEQA California Code of Regulations Title 14, Section 15064.5, when an initial study identifies the existence of, or the probable likelihood of, Native American human remains within the project, a lead agency must work with the appropriate Native Americans as identified by the NAHC. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans identified as the Most Likely Descendant (MLD) by the NAHC.

Public Resources Code (PRC), Section 5097.9 et seq. (1982) establishes that both public agencies and private entities using, occupying, or operating on state property under public permit, shall not interfere with the free expression or exercise of Native American religion and shall not cause severe or irreparable damage to Native American sacred sites. This section also creates the NAHC, charged with identifying and cataloging places of special religious or social significance to Native Americans, identifying and cataloging known graves and cemeteries on private lands, and performing other duties regarding the preservation and accessibility of sacred sites and burials.

Public Resources Code 5024.1 establishes the CRHR. A resource may be listed as a historical resource in the CRHR if it meets National Register of Historic Places criteria or the following state criteria: (1) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; (2) is associated with the lives of persons important in our past; (3) embodies

the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possess high artistic values; or (4) has yielded, or may be likely to yield, information important in prehistory. The CRHR is an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify California's historical resources and to indicate what properties are to be protected from substantial adverse change.

Public Resources Code 5097.98 establishes the procedures that need to be followed upon the discovery of Native American human remains. The NAHC, upon notification of the discovery of human remains is required to contact the County Coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code and shall immediately notify those persons it believes to be most likely descended from the deceased Native American.

Health and Safety Code 7050.5 establishes that any person, who knowingly mutilates, disinters, wantonly disturbs, or willfully removes any human remains in or from any location without authority of law is guilty of a misdemeanor. It further defines procedures for the discovery and treatment of Native American human remains.

Local

County of Riverside General Plan, Multipurpose Open Space Element. This document outlines several policies for the protection and preservation of prehistoric and historic cultural resources. These include (1) establishing a cultural resources program in consultation with tribes and the professional cultural resources consulting community; (2) reviewing proposed development for the possibility of cultural resources and for compliance with the cultural resources program; (3) designating as open space and allocating resources and/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state; and (4) exercising sensitivity and respect for human remains from prehistoric and historic time periods and complying with all applicable laws concerning such remains. These policies include the following (County of Riverside, 2015):

- **Policy OS 19.1** Cultural resources (both prehistoric and historic) are a valued part of the history of the County of Riverside.
- **Policy OS 19.2** The County of Riverside shall establish a Cultural Resources Program in consultation with Tribes and the professional cultural resources consulting community that, at a minimum would address each of the following: application of the Cultural Resources Program to projects subject to environmental review; government-to-government consultation; application processing requirements; information database(s); confidentiality of site locations; content and review of technical studies; professional consultant qualifications and requirements; site monitoring; examples of preservation and mitigation techniques and methods; curation and the descendant community consultation requirements of local, state and federal law.
- **Policy OS 19.3** Review proposed development for the possibility of cultural resources and for compliance with the cultural resources program.
- **Policy OS 19.4** To the extent feasible, designate as open space and allocate resources and/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state.
- **Policy OS 19.5** Exercise sensitivity and respect for human remains from both prehistoric and historic time periods and comply with all applicable laws concerning such remains.

Consistency

Table 3.7-1 provides a list of county plans and policies that are applicable to cultural resources and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.7-1. Consistency with Applicable Plans and Policies – Cultural Resources

Plan/Policy	Consistency	Explanation
Riverside County General Plan, Multipurpose Open Space Element – Policy OS 19.1. Cultural resources are a valued part of the County's history.	Yes	The Project has demonstrated the understanding that the County of Riverside values both prehistoric and historic cultural resources.
Riverside County General Plan, Multipurpose Open Space Element – Policy OS 19.2. The County shall establish a cultural resources program.	Yes	The Project has demonstrated the understanding that the County of Riverside has established a cultural resources program in consultation with Tribes and the professional cultural resources consulting community.
Riverside County General Plan, Multipurpose Open Space Element – Policy OS 19.3. Proposed development is reviewed for the possibility of cultural resources.	Yes	The Project area has been reviewed (surveyed and records searched) for the possibility of cultural resources and for the compliance with the cultural resources program.
Riverside County General Plan, Multipurpose Open Space Element – Policy OS 19.4. Designate open space and allocate resources and/or tax credits to protect cultural resources.	Yes	The Project, to the extent feasible, has designated open space and allocated resources/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state.
Riverside County General Plan, Multipurpose Open Space Element – Policy OS 19.5. Exercise sensitivity and respect for human remains and comply with all applicable laws.	Yes	The Project has complied with all applicable laws concerning human remains from both prehistoric and historic time periods.

3.8 Land Use and Recreation

This section describes effects on land uses and recreational resources that could occur as a result of the proposed Thousand Palms Flood Control Project (proposed Project) or an alternative.

3.8.1 Environmental Baseline

The proposed Project study area is bounded by existing natural features and land uses and encompasses all areas that could be affected by the proposed Project and alternatives discussed in this section. In general, this area is bounded to the northeast by the Indio Hills, and to the southwest by Interstate 10 (I-10). This analysis considers the existing and proposed land uses that fall within this study area. However, for the purpose of policy analysis, the study area used in assessing potential policy inconsistencies is based only on the jurisdictional boundaries that would be traversed by each proposed Project alignment. The majority of this land is under the jurisdiction of the County of Riverside, and a portion is administered by the U.S. Bureau of Land Management (BLM) and U.S. Fish and Wildlife Service (USFWS). The applicable plans, policies, and land designations for each agency are identified below in Tables 3.8-1 and 3.8-2.

For potential physical land use impacts along the proposed Project alignment, existing land use GIS data was mapped to a distance of at least one-half mile of either side of the proposed Project's right-of-way (ROW), as well as the alternative alignments segments. Identified land uses within this radius were subsequently verified through field reconnaissance conducted on May 16, 2013 and in February 2019 and through review of online aerial photography.

3.8.1.1 Existing Land Uses

Maps of the County's land use designations in the study area are presented in Figures 3.8-1 through 3.8-3 (General Plan Land Use). Land uses immediately adjacent to the Project area include open space, residential, recreational, and light industrial. The land use study area is located within unincorporated Riverside County, and includes the unincorporated community of Thousand Palms. Cities near the study area include Palm Springs to the northwest, the City of Indio to the southeast, and the cities of Cathedral City, Rancho Mirage and Palm Desert, to the south across Interstate 10. The study area includes a variety of land uses. The predominant land use of the study area is natural open space, with residential, recreational, commercial, and agricultural uses concentrated in areas just north of Interstate 10. Industrial uses are scattered throughout the central portion of the study area between Interstate 10 and the base of the Indio Hills.

A portion of the 15,000-acre Coachella Valley Preserve, including the Coachella Valley National Wildlife Refuge, is located within the study area. The lands lying within the Preserve are owned and administered by the BLM, USFWS, and the California Department of Fish and Wildlife (CDFW) (See Figure 3.6-1, Land Ownership).

Shortly after becoming a State, California was granted Sections 16 and 36 (two square miles) or lands in lieu thereof, out of each township then held by the federal government. These lands, classified as "School Lands," were given to the State to help support public education. While many of the School Lands were sold off over the years, the State retains an interest in approximately 1.3 million acres of these lands, mostly in desert and forest regions. The study area includes patented School Lands and in-lieu lands where the State has reserved a 1/16th mineral interest. Additionally, adjacent to the northern boundary of the study area, the State has reserved a 100 percent interest in patented School and/or in-lieu lands. These lands are administered by the California State Lands Commission (CSLC) (USACE, 2000).

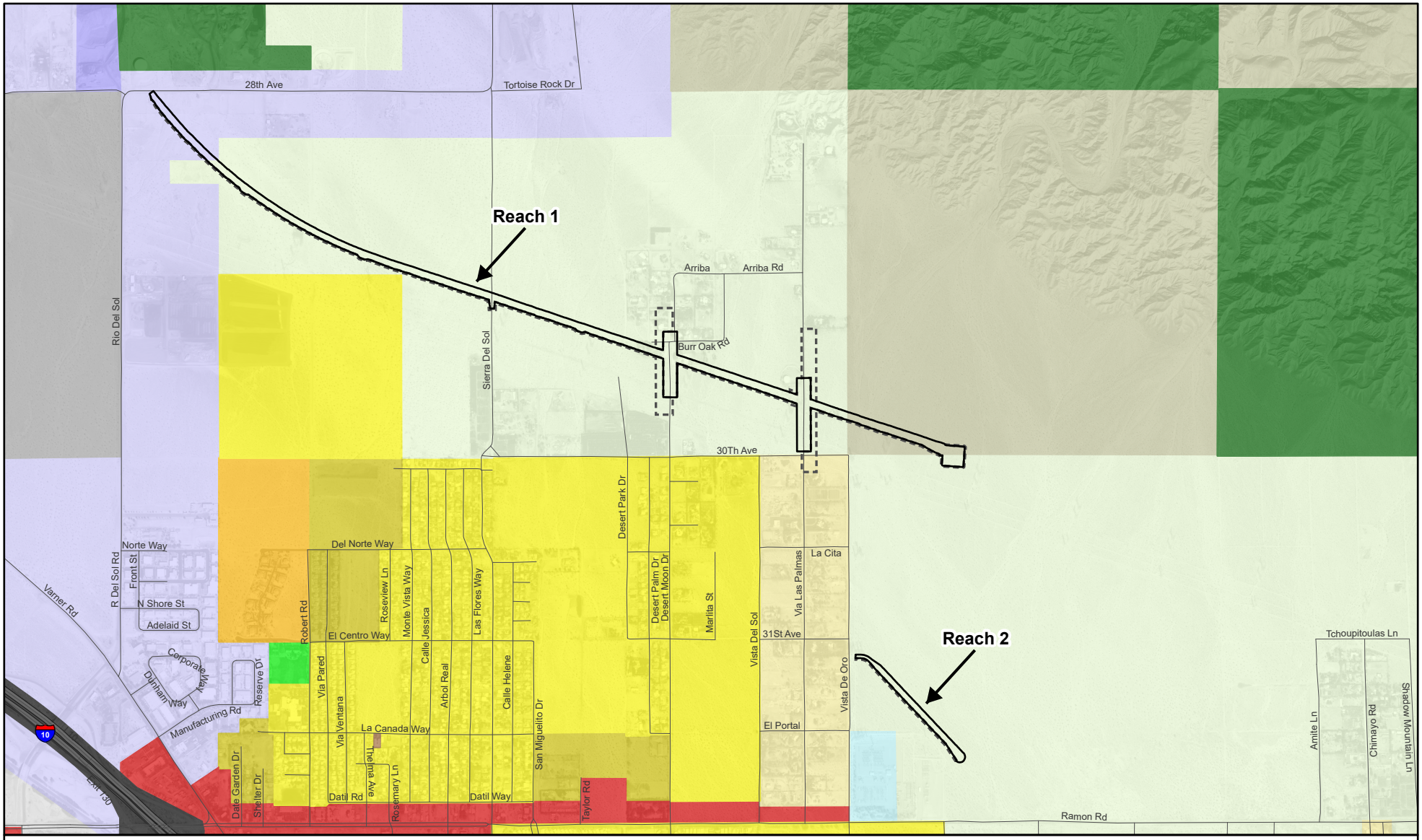


Figure 3.8-1

General Plan Land Use
Reach 1 and 2 Alignments

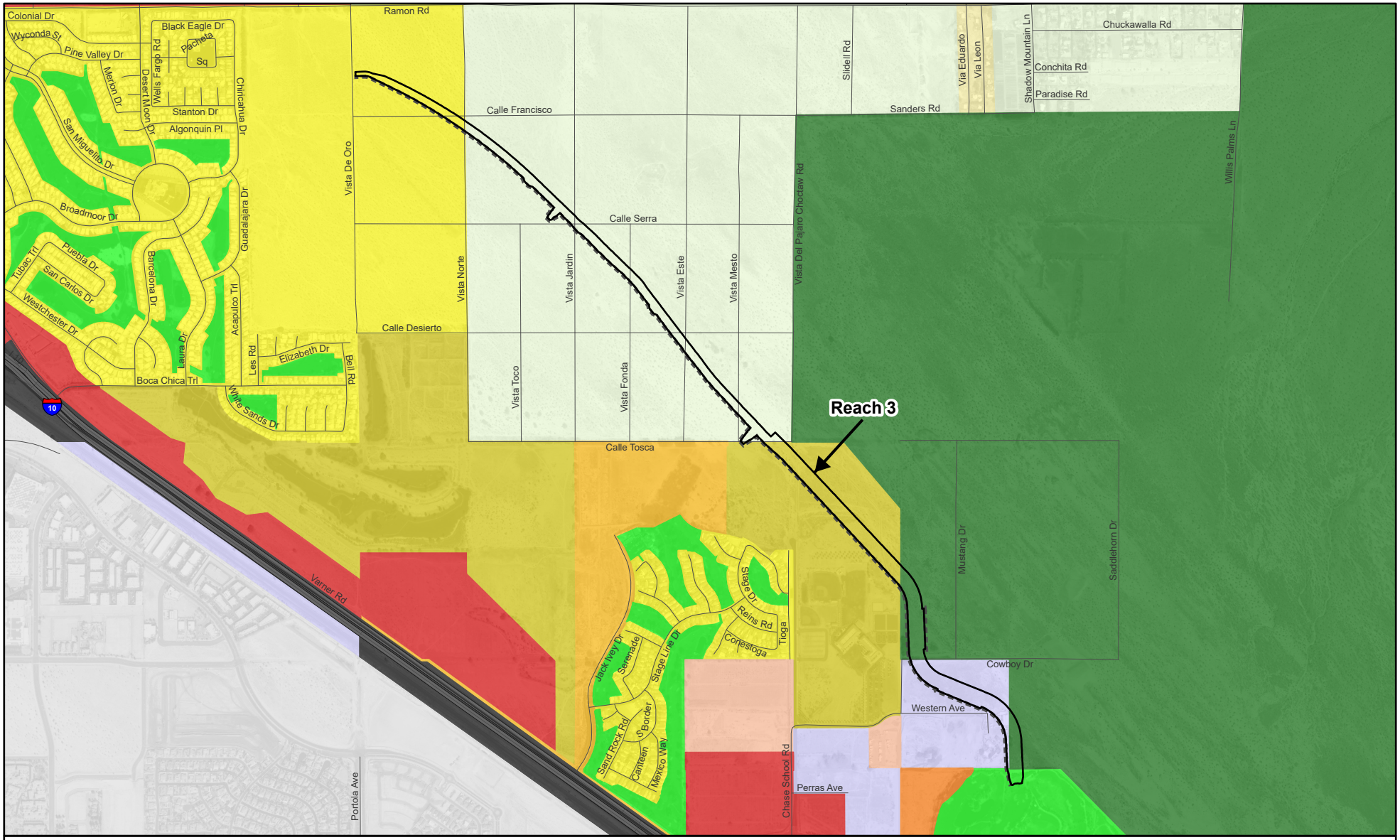


Figure 3.8-2

General Plan Land Use
Reach 3 Alignment

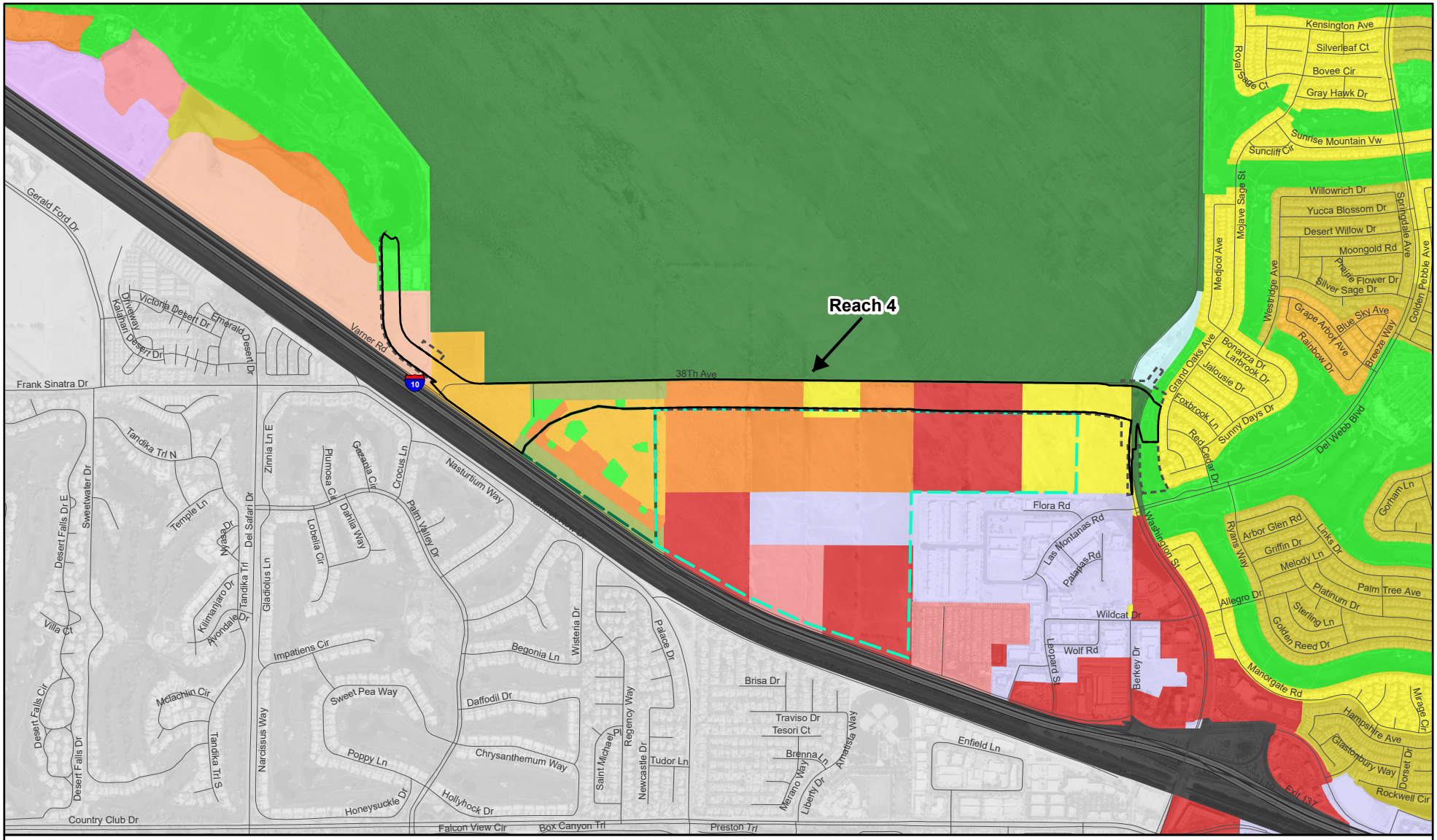


Figure 3.8-3

General Plan Land Use
Reach 4 Alignment

The Land Management Division of the CSLC is responsible for the surface management program under which all surface resources on school lands, with the exception of mineral activities, are administered. Article 2 of CSLC's Regulations states that rights-of-way, public agency uses and protective structures require a General Lease ROW, which will need to be issued by the CSLC for the proposed Project. Although, this regulation does not specifically categorize flood control projects, the proposed Project would fall under one of these three categories (right-of-way, public agency use, or protective structure). As a Responsible Agency for this EIR/EIS, the CSLC will use this document for the issuance of the General Lease ROW.

Sensitive land uses are considered those land uses which are particularly sensitive to disturbances that may occur as a result of the Project. Sensitive land uses are identified because of their sensitivity to various types of Project-related effects and the potential need for mitigation measures to offset impacts. In general, sensitive land uses include residential uses, recreational uses, educational uses, religious uses, cemeteries, health care uses, and rest homes. Sensitive receptors within the study area include the Coachella Valley Preserve (due to habitat sensitivity and recreational use), Xavier College Preparatory High School, residential developments, and golf courses.

Table 3.8-1 through 3.8-3 provides the existing land uses, general plan and zoning designations along each reach of the proposed Project. The entire Project site is within the County's jurisdiction and within the boundaries of West Coachella Valley Area Plan. See Table 3.8-3 for land use designation descriptions.

Table 3.8-1. Land Use Designations and Existing Land Uses Per Project Component

Jurisdiction	Land Use Designations	Zoning Designations	Existing Land Uses
Reach 1			
Riverside County	Rural Residential, Light Industrial, Open Space Rural	M-SC, W-2-5, R-A-2 ½, R-A-1	Mostly vacant land, would traverse three residential parcels near Desert Moon Drive and one residential parcel near Via Las Palmas
Reach 2			
Riverside County	Rural Residential	R-1, R-3-6000	Vacant land
Reach 3			
Riverside County	Rural Residential, Medium Density Residential, Medium High Density Residential, Light Industrial, Conservation Habitat	R-1, R-3-6000, R-T, W-2	Vacant land, Xavier Preparatory High School, Pegasus Therapeutic Riding, Coachella Valley Preserve
USFWS, BLM, CDFW	Conservation Habitat	N-A (conservation lands)	Coachella Valley Preserve
Reach 4			
Riverside County	Open Space Recreation, Business Park, High Density Residential, Very High Density Residential, Medium Density Residential, Commercial Retail, Public Facilities	W-2, C-P-S, W-2-10,	Classic Club Golf Course, adjacent to residential parcels along Washington Street and planned developments south of Avenue 38 (Specific Plan includes Mirasera, Valanté, and Del Webb's Sun City)
USFWS, BLM, CDFW	Conservation Habitat	N-A (conservation lands)	Coachella Valley Preserve

Source: Riverside County, 2021a.

3.8.1.2 Agricultural Land Uses

The Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status; the best quality land is called Prime Farmland. The maps are updated every two years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance (DOC, 2015).

The DOC's FMMP also provides designations for Important Farmland throughout the State. The majority of the proposed Project route would traverse land designated as Other Land. Based on the 2015 FMMP maps for the County of Riverside, the following are FMMP designations along each proposed reach:

- Reach 1 – Other Lands
- Reach 2 – Other Lands
- Reach 3 – Other Lands, Farmland of Local Importance, Urban and Built-Up Land
- Reach 4 – Other Lands, Farmland of Local Importance, Urban and Built-Up Land (DOC, 2015)

The following are the definitions for these designations:

- Other Land – Other land is land not included in any other mapping category. Common examples include low density rural developments, brush, timber, wetland, and riparian areas not suitable for livestock grazing, confined livestock, poultry, or aquaculture facilities, strip mines, borrow pits, and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded by urban development and greater than 40 acres is mapped as other land.
- Urban and Built-Up Land – Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- Farmland of Local Importance – Soils that would be classified as Prime and Statewide but lack available irrigation water. Lands planted to dryland crops of barley, oats, and wheat. Lands producing major crops for riverside county but that are not listed as unique crops. These crops are identified as returning one million or more dollars on the 1980 Riverside County agriculture crop report. Crops identified are permanent pasture (irrigated), summer squash, okra, eggplant, radishes, and watermelons. Dairylands, including corrals, pasture, milking facilities, hay and manure storage areas if accompanied with permanent pasture or hayland of 10 acres or more. Lands identified by city or county ordinance as agricultural zones or contracts, which includes Riverside city "proposition r" lands. Lands planted to jojoba which are under cultivation and are of producing age.

There are no Williamson Act contracts or County-designated agricultural preserves near the Project site.

3.8.1.3 Recreational Resources

Recreational resources in the Project area are identified in Figure 3.8-4 (Recreational Resources).

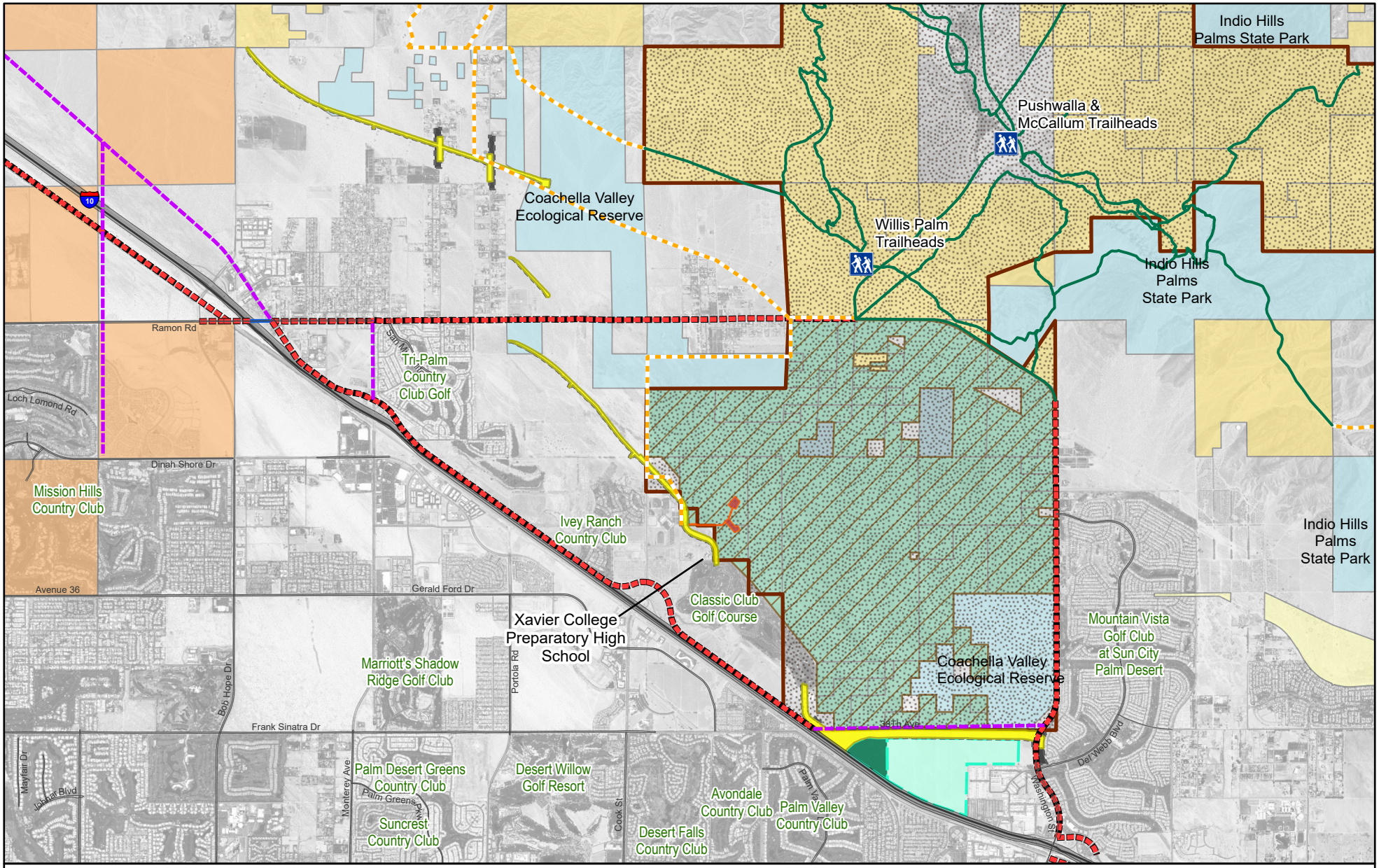


Figure 3.8-4

Recreational Resources

The public recreational resources in the vicinity of the Project site are as follows:

- Thousand Palms Community Park is located approximately one mile south of Reach 1 and 2.25 miles west of Reach 2
- Freedom Park is located approximately 0.75 mile south of Reach 4
- Indio Hills Palms Park is the closest State Park located approximately 3.5 miles east of the Project site
- Regional and community trails are also located in the Project area, as shown in Figure 3.8-4 (Riverside County, 2015). Regional trails are the primary long-distance trails within the County, and are usually designed to provide linkages between communities, regional parks, and open space areas. They are generally maintained and operated by the Riverside County Regional Parks and Open Space District. They are designed to eventually provide linkages between areas which could be quite a distant from each other. They are also designed to connect with trails in State and federal parks, forests, and recreational area trails, as well as trails within cities and other jurisdictions.

The private recreational resources near the Project site are as follows:

- Recreation areas for Xavier College Preparatory High School include two baseball/softball fields and a football field, Reach 3 would be located approximately 200 feet east of the football field
- The southeast end of Reach 3 would traverse the Pegasus Therapeutic Riding parcel
- The west end of Reach 4 would traverse the Classic Club Golf Course

Riverside County's bikeway system is included as part of the County's circulation system. The County uses three types of bike path classifications (Riverside County, 2015):

- Class I - Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross-flow minimized.
- Class II - Provides a striped lane for one-way bike travel on a street or highway.
- Class I Bike Path/Regional Trail (Combination Trail) - This functions as a regional connector to link all the major bodies of water in Western Riverside County and to provide the opportunity for long-distance users to take advantage of this system for long one-way or loop type trips. This system may also take advantage of existing or planned Class I Bike Paths, Regional Trails, and/or Community Trails for several combinations of easements, connections, or links.

  Bicycles are also allowed on regional and community trails, which allow all types of non-motorized use. However, Class I bike paths and Class II bike lanes are designed for bicycle use only. As with non-motorized trails, a connected system of bikeways is needed to encourage this alternative transportation method among County residents.

Western Coachella Valley Area Plan, Washington Street is a designated Class I Bikeway (provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross-flow minimized) (RCTLMA, 2016; Riverside County, 2021b).

The Coachella Valley Preserve would be traversed by portions of Reaches 3 and 4. This open space area provides many outdoor recreational opportunities including sightseeing, hiking, riding, bird watching, photography, and picnicking. Overnight camping and off-highway vehicle (OHV) use are restricted within the Preserve. The Preserve also contains several palm oases including the Thousand Palms Oasis, and Willis and Indian Palms Oases. Horses and bicycles are not allowed in any of the palm oases. The Preserve is open every day from sunrise to sunset (CNLM, 2021).

Golfing is a major recreational activity that occurs within the Project study area. The study area contains several golf courses adjacent to residential developments, including the Classic Golf Course which is located between Reach 3 and Reach 4 of the proposed Project. Informal and unorganized recreational activities throughout the study area include OHV use, bicycling, jogging, and horseback riding.

Joshua Tree National Park, a popular destination for outdoor recreationists and particularly rock climbers, is located to the northwest of the Project area, on the other side (north of) the Indo Hills. Due to the distance between Joshua Tree National Park and the Project area, recreational activities and opportunities within the Park would not be affected by the proposed Project. Therefore, although the Park is a significant recreational resource, it does not characterize baseline conditions for the Project study area.

3.8.2 Regulatory Framework

The following section provides the plans and policies that are applicable to land use and recreation and includes a discussion of the Project's consistency with each plan or policy.

Federal

No federal regulations pertaining to land use and recreation.

State

California State Lands Commission

As discussed in Section 3.8.1.1, above, Article 2 of CSLC's Regulations states that power lines require a General Lease ROW, which would need to be issued by the CSLC for the proposed Project.

California Code of Regulations

Title 2, Division 3, Chapter 1, Article 2 Leasing or Other Use of Public Lands

§ 2000. General.

(d) Leases or permits for school, lieu or indemnity lands shall be for value or value enhancement purposes.

§ 2002. Categories of Leases, Permits, or Agreements.

(a) General Lease: Uses may include the following:

(3) Right of Way: Uses such as roadways, power lines, pipelines, or outfall lines.

(7) Public Agency: Uses such as public roads, bridges, recreation areas or wildlife refuges having a regional or statewide public benefit.

(8) Protective Structure: Uses such as groins, jetties, sea walls, revetments, breakwaters, and bulkheads.

Local

Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan (~~CVAG~~ CVCC, 2007)

Activities in Conservation Areas

Implementation of the Plan will provide Permits for Covered Species for the Covered Activities in the Conservation Areas described in 7.3.1 and 7.3.1.1, and for the Compatible Activities in the Conservation Areas described in Section 7.3.3.

Covered Activities

Development permitted or approved by Local Permittees. Development and the associated ground disturbance, consistent with the Conservation Goals and Conservation Objectives within Conservation Areas and Species Conservation Goals and Objectives; and including the construction, operation, and maintenance of new flood control facilities and local roadways (less than 74 feet in width and no more than one through travel lane in each direction) which are either: (1) approved as part of a development proposal or (2) dedicated, or offered for dedication, for public use, are Covered Activities. As applicable, these activities are subject to the avoidance and minimization measures described in Section 4.4.

Table 3.8-2. Covered Activities – Coachella Valley Water District's Facilities in Conservation Areas

Facility	Conservation Area Where Located	Avoidance/Minimization Measures Required
(t) Whitewater River flood control levees, construction and O&M	Thousand Palms	Subject to terms and conditions of Section 7 consultation and compliance with the CVMSHCP/HCCP

Source: CVCC, 2007 (Table 7-6 from the CVMSHCP)

Joint Project Review

Coachella Valley Conservation Commission (CVCC) Consistency Determination of Proposed Project with CVMSHCP/NCCP. The proposed Project is subject to the CVMSHCP Joint Project Review process to ensure that consistent implementation and oversight of the CMVSHCP. The Joint Project Review process analyzes the Project's potential impacts to Conservation Objectives for the Conservation Area, CVMSHCP Required Measures for the Conservation Area, Covered Species' Goals and Objectives, and maintenance of Rough Step in the Conservation Area (Rough Step analysis is done to ensure that CVMSHCP objectives are met). If the analysis identifies inconsistencies between the proposed Project and CVMSHCP objectives and requirements, the permittee and CVCC staff will meet and confer to identify requirements necessary to achieve compliance (~~CVAG~~ CVCC, 2007).

In August 2021, CVCC determined the Project to be consistent with the CVMSHCP and that it constitutes a Covered Project under Section 7.3.1 (Appendix C.5). The Thousand Palms Conservation Area will be adjusted to exclude the permanent impacts of the proposed 2021 Project alignment, which will result in an approximately 301-acre (1.16 percent acreage reduction) change from the Conservation Area. Reaches 1 through 3 will represent portions of the new western boundary of the Conservation Area. Reach 4 did not previously cross into the Conservation Area but will represent the edge of the southern boundary. Temporary impacts associated with the proposed Project will occur within the Conservation Area and are therefore subject to Section 4.4 Avoidance, Minimization, and Mitigation requirements of the CVMSHCP. Refer to Appendix C.5 for a further discussion of the CVCC consistency determination.

County of Riverside

The land use plans applicable to the proposed Project site include the County's General Plan, and the following specific plans: North Star Ranch, Varner, Riverpark, Del Webb's Sun City/ Palm Springs. Based on GIS data obtained from the County, Table 3.8-1 provides the County land use and zoning designations that would be traversed by the proposed Project. Table 3.8-3 provides the descriptions of each land use designations that would be traversed.

The County's General Plan is divided into Plan Areas. The proposed Project is entirely within the Western Coachella Valley Area Plan; therefore, the Western Coachella Valley Area Goals and Policies of the Land Use Element apply to this Project.

Table 3.8-3. Land Use Designations Descriptions

Land Use Designation	Description	Associated Policy(ies)
Reach 1		
Rural Residential (RR)	The Rural Residential land use designation allows one single family residence per five acres, as well as limited animal-keeping and agricultural activities. For multi-lot developments, the minimum lot size per residential unit is 2.5 acres, though the overall density of the development must not exceed 0.2 dwelling units per acre. Limited recreational uses, compatible resource development (not including the commercial extraction of mineral resources) and associated uses, and governmental uses are also allowed within this designation.	LU 17.1 Require that grading be designed to blend with undeveloped natural contours of the site and avoid an unvaried, unnatural, or manufactured appearance. (AI 23)
Light Industrial (LI)	The Light Industrial land use designation allows for a wide variety of industrial and related uses, including assembly and light manufacturing, repair and other service facilities, warehousing, distribution centers, and supporting retail uses. Building intensity ranges from 0.25 to 0.6 FAR.	None are applicable to the proposed Project.
Open Space Rural (OS-RUR)	The Open Space-Rural land use designation is applied to remote, privately owned open space areas with limited access and a lack of public services. Single-family residential uses are permitted at a density of one dwelling unit per 20 acres. The extraction of mineral resources subject to an approved surface mining permit may be permissible, provided that a proposed project can be undertaken in a manner that is consistent with maintenance of scenic resources and views from residential neighborhoods and major roadways and that the project does not detract from efforts to protect endangered species.	LU 20.1 Require that structures be designed to maintain the environmental character in which they are located. (AI 3) LU 20.2 Require that development be designed to blend with undeveloped natural contours of the site and avoid an unvaried, unnatural, or manufactured appearance. (AI 23)
Reach 2		
RR	Same as above.	Same as above.
Reach 3		
RR	Same as above.	Same as above.
Medium Density Residential (MDR)	The Medium Density Residential land use designation provides for the development of conventional single family detached houses and suburban subdivisions. Limited agriculture and animal keeping uses, such as horses, are also allowed within this category. The density range is 2.0 to 5.0 dwelling units per acre, which allows for a lot size that typically ranges from 5,500 to 20,000 square feet.	None are applicable to the proposed Project.
Medium High Density Residential	The Medium High Density Residential land use designation provides for the development of smaller lot, single family residences. Typical allowable uses in this category include detached, small-lot single family homes, patio homes, and townhouses. The potential for clustered development is provided for in this category. The density range is 5.0 to 8.0 dwelling units per acre, with lot sizes typically ranging from 4,000 to 6,500 square feet.	None are applicable to the proposed Project.
LI	Same as above.	Same as above.

Table 3.8-3. Land Use Designations Descriptions

Land Use Designation	Description	Associated Policy(ies)
Open Space-Conservation Habitat (OS-CH)	The Open Space-Conservation Habitat land use designation applies to public and private lands conserved and managed in accordance with adopted MSHCP's and related Riverside County policies. Ancillary structures or uses may be permitted for the purpose of preserving or enjoying open space. Actual building or structure size, siting, and design will be determined on a case by case basis.	LU 18.1 Require that structures be designed to maintain the environmental character in which they are located. (AI 3)
		LU 18.2 Cooperate with the California Department of Fish and Game (CDFG), United States Fish and Wildlife Service (USFWS), and any other appropriate agencies in establishing programs for the voluntary protection, and where feasible, voluntary restoration of significant environmental habitats. (AI 10)
Reach 4		
Open Space Recreation (OS-R)	The Open Space-Recreation land use designation allows for active and passive recreational uses such as parks, trails, campgrounds, athletic fields, golf courses, and off-road vehicle parks. Ancillary structures may be permitted for recreational opportunities. Actual building or structure size, siting, and design will be determined on a case by case basis.	LU 19.4 Encourage that structures be designed to maintain the environmental character in which they are located. (AI 3)
Business Park	The Business Park land use designation allows for employee-intensive uses, including research and development, technology centers, corporate and support office uses, "clean" industry and supporting retail uses. Building intensity ranges from 0.25 to 0.6 floor area ratio (FAR).	None are applicable to the proposed Project.
High Density Residential (HDR)	The High Density Residential land use designation allows detached, small lot single family and attached single family homes, patio homes, zero lot line homes, multi-family apartments, duplexes, and townhouses. The potential for clustered development is provided for in this land use category. The density range is 8.0 to 14.0 dwelling units per acre.	None are applicable to the proposed Project.
Very High Density Residential (VHDR)	The Very High Density Residential land use designation allows for the development of multi-family apartments, duplexes, and condominiums, with a density range of 14.0 to 20.0 dwelling units per acre.	None are applicable to the proposed Project.
Medium Density Residential	Same as above.	Same as above.
Commercial Retail (CR)	The Commercial Retail land use designation allows for the development of commercial retail uses at a neighborhood, community, and regional level, as well as for professional office and tourist-oriented commercial uses. Commercial Retail uses will be permitted based on their compatibility with surrounding land uses and based on the amount of Commercial Retail acreage already developed within County unincorporated territory. The amount of land designated for Commercial Retail development within the County's land use plan exceeds that amount which is anticipated to be necessary to serve the County's population at build out. This oversupply will ensure that flexibility is preserved in site selection opportunities for future retail development within the County. Floor area ratios range from 0.2 to 0.35. (In order to more accurately project the actual potential for retail development within the County unincorporated areas, and the traffic and environmental impacts that would result from it, the statistical build out projections for the General Plan EIR assumed that 40% of the	None are applicable to the proposed Project.

Table 3.8-3. Land Use Designations Descriptions

Land Use Designation	Description	Associated Policy(ies)
	area designated Commercial Retail might ultimately develop as commercial uses. It was further assumed that the remaining 60% of the area designated CR would likely develop as residential uses within the Medium Density Residential range.)	
Public Facilities	The Public Facilities area plan land use designation provides for the development of various public, quasi-public, and private uses with similar characteristics, such as governmental facilities, utility facilities including public and private electric generating stations and corridors, landfills, airports, educational facilities, and maintenance yards. Privately held uses with public facility characteristics are not required to be designated as Public Facilities but are eligible to be so designated based on site-specific reviews of the characteristics of the use in question. Due to the varied nature of this category, building intensity and design criteria for uses with January 5, 2004 in this designation shall generally comply with those standards and policies most similar to the intended use. Airports, utility facilities, other than electric generating stations, and landfills generally have low FARs. Building intensities for civic uses such as County administrative buildings and schools, however, are comparable to other employment generating land use designations. The maximum intensity allowed for civic uses within the Public Facilities designation is 0.60 FAR. Actual FAR will vary for other uses and the appropriate FAR will, therefore, be determined in the zoning ordinance.	LU 25.1 Accommodate the development of public facilities in areas appropriately designated by the General Plan and area plan land use maps. (AI 1, 2, 6)
		LU 25.3 Require that new public facilities protect sensitive uses, such as schools and residences, from the impacts of noise, light, fumes, odors, vehicular traffic, parking, and operational hazards. (AI 3)
		LU 25.5 Require that public facilities be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding area. (AI 3)
		LU 25.6 Ensure that development and conservation land uses do not infringe upon existing public utility corridors, including fee owned rights-of-way and permanent easements, whose true land use is that of Public Facilities. This policy will ensure that the "public facilities" designation governs over what otherwise may be inferred by the large-scale general plan maps. (AI 3)
		LU 25.7 Due to the scale of General Plan and Area Plan maps and the size of the County, utility easements and linear rights-of-way that are narrow in width are not depicted on General Plan and Area Plan maps. These features need to be taken into consideration in the review of applications to develop land and proposals to preserve land for conservation.
Open Space-Conservation Habitat (OS-CH)	Same as above.	Same as above.

Specific Plans

Reach 4 of the proposed Project would traverse the Mirasera Specific Plan, Valanté Specific Plan, and Del Webb's Sun City Specific Plan. Each of these plans provide zoning regulations within each planning area; however, flood control facilities are not included in the zoning regulations under these specific plans. As such, the applicable zoning ordinances are discussed below.

Zoning Ordinance

Table 3.8-1, above, provides the County's zoning designations that would be traversed by each reach of the proposed Project. Based on a review of the Zoning Ordinance, flood control infrastructure is not included on the lists of permitted and conditionally permitted uses. However, the Zoning Ordinance does

provide the following ordinance for public use permits. As stated in Article V (Rural Residential Zone), public utility uses include structures and installations necessary to the conservation and development of water such as dams, pipelines, water conduits, tanks, canals, reservoirs, wells, and the necessary pumping and water production facilities. As such, the proposed Project qualifies as a "public use" and requires a Public Use Permit from the County.

SECTION 18.29. PUBLIC USE PERMITS.

A. Notwithstanding any other provisions of this ordinance, the following uses may be permitted in any zone classification provided that a public use permit is granted pursuant to the provisions of this section:

7. Public utilities.

B. APPLICATION.

An application for a public use permit shall be made in writing to the Planning Director on the forms provided by the Planning Department, shall be accompanied by an initial payment of the deposit based fee as set forth in Ordinance No. 671.

C. PUBLIC HEARING.

A public hearing shall be held on the application for a public use permit in accordance with the provisions of Section 18.26. of this ordinance and all of the procedural requirements and rights of appeal as set forth therein shall govern the hearing.

D. CONDITIONS.

A public use permit shall not be granted unless the applicant demonstrates that the proposed use will not be detrimental to the health, safety or general welfare of the community. Any permit that is granted shall be subject to such conditions as shall be necessary to protect the health, safety or general welfare of the community.

Consistency

The proposed Project would be consistent with the county's plans and policies (see Table 3.8-3) as it would provide flood protection to the area, protecting sensitive uses, and would be designed to maintain the environmental character of the area (use of soil cement), and has been designed to minimize impacts to aeolian transport in the Project area (see Section 4.5, Sand Migration).

3.9 Noise

This section provides information on ambient noise conditions near the Thousand Palms Flood Control Project (Project) and alternatives. Section 3.9.1 provides the existing setting, including background information on noise, the noise environment of the Project area, and sensitive receptors.

3.9.1 Fundamentals of Environmental Acoustics

The assessment of noise impacts uses specific terminology and descriptors not commonly used in everyday conversation. Therefore, to assist in a thorough understanding of the subsequent analysis, Table 3.9-1 provides definitions for technical terminology utilized.

Table 3.9-1. Summary of Acoustical Terms

Term	Definition
Decibel (dB)	A unit to measure the intensity of sound or a degree of loudness. The ear can detect changes in pressure which displace the eardrum. The ear responds to pressure changes over a range of 1 to 10^{14}. To deal with the extreme range of pressures the ear can detect, the amount of acoustical energy of a sound is expressed by comparing the measured sound pressure to a reference pressure, then taking the logarithm (base 10) of the square of that number.
A-Weighted Sound Level (dBA)	The sound level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Ambient Noise Level	The composite noise from all sources resulting in the existing normal level of environmental noise at a given location. The Leq, as defined below, typically defines the ambient level.
Equivalent Noise Level (Leq)	The average A-weighted dB level (dBA), on an equal energy basis, during the measurement period.
Maximum Noise Level (Lmax)	The maximum noise level during a sound measurement period.
Minimum Noise Level (Lmin)	The minimum noise level during a sound measurement period.
Community Noise Equivalent Level (CNEL)	The average sound level over a 24-hour period, with a penalty of 5 dB added between 7 p.m. and 10 p.m. and a penalty of 10 dB added for the nighttime hours of 10 p.m. and 7 a.m.

The effects of noise on people can be grouped into three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, learning
- Physiological effects such as startling and hearing loss

In most cases, typical noise produces effects in the first two categories, being subjective effects and interference with activities. An example of physiological effects of noise may include workers in industrial plants that might experience physiological effects of noise. No satisfactory way exists to measure the subjective effects of noise, or to measure the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard is due primarily to the wide variation in each individual's thresholds of annoyance and habituation to noise. Thus, an important way of determining a person's subjective reaction to a new noise is by comparison with the existing or "ambient" environment to which that person has adapted.

Community noise levels are usually closely related to the intensity of nearby human activity. Noise levels are generally considered low when ambient levels are below 50 dBA, moderate in the 50-65 dBA range, and high above 65 dBA (FTA, 2006). Figure 3.9-1 (Noise Levels of Common Sounds) illustrates typical noise

levels for common sounds. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, high noise levels are nevertheless considered to be adverse to public health. In general, the more the level or the tonal (frequency) variations of a noise exceed the existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual. When comparing sound levels from similar sources (for example, changes in traffic noise levels), a 3 dBA increase is considered to be a just-perceivable difference, 5 dBA is clearly perceivable, and 10 dBA is considered a doubling in perceived loudness.

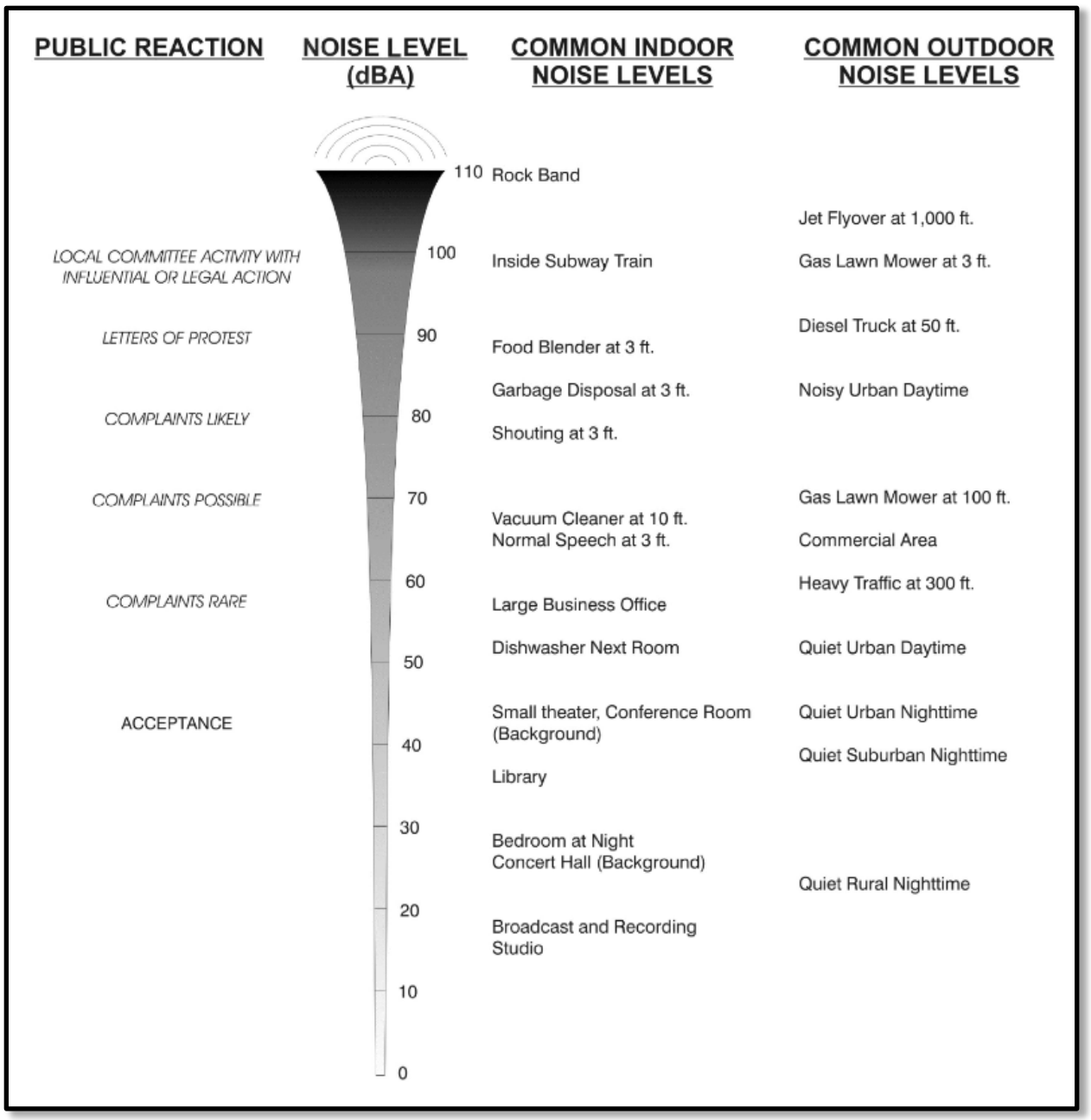


Figure 3.9-1. Noise Levels of Common Sounds
Source: Derived from USEPA, 1974 and 1978.

3.9.2 Fundamentals of Environmental Vibration

Vibration is a phenomenon related to noise, where common sources include trains, large vehicles on rough roads, and construction activities such as blasting, pile-driving, and operating heavy earth-moving equipment (FTA, 2006). Vibration is defined as the mechanical motion of earth or ground, building, or other type of structure, induced by the operation of any mechanical device or equipment located upon or affixed thereto. Vibration generally results in an oscillatory motion in terms of the displacement, velocity, or acceleration of the ground or structure(s) that causes a normal person to be aware of the vibration by means such as, but not limited to, sensation by touch or visual observation of moving objects.

The groundborne energy of vibration has the potential to cause structural damage and annoyance; it can be felt outdoors, but the perceived intensity of vibration effects are much greater indoors due to the shaking of structures. Several land uses are sensitive to vibrations, and include hospitals, libraries, residential areas, schools, and churches. There are several different methods that are used to quantify vibration levels. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is most frequently used to describe vibration impacts to buildings. The PPV velocity is normally described in inches per second. Table 3.9-2 summarizes typical human response to transient (infrequent) vibration.

Table 3.9-2. Typical Human Response to Transient Vibration, PPV

Human Response	Vibration (Inches/Second)
Severe	2.00
Strongly Perceptible	0.90
Distinctly Perceptible	0.24
Barely Perceptible	0.035

Source: Caltrans, 2004 – Table 6.

Table 3.9-3 presents maximum vibration levels for preventing damage to various structure types and conditions.

Table 3.9-3. Maximum Vibration Levels for Preventing Damage, PPV

Structure and Condition	Limiting Vibration (Inches/Second)
Engineered Structures	1.0 – 1.5
Residential Structures in Good Repair with Gypsum Board Walls	0.4 – 0.5
Residential Structures, Plastered Walls	0.2 – 0.3

Source: Caltrans, 2004 – Table 15.

3.9.3 Environmental Baseline

The study area for potential noise and vibration effects are areas proximate to construction locations and those along local access routes to the work areas. The principal source of existing noise in the Project area is motor vehicle traffic along local roadways, as well as distant traffic noise from Interstate 10 (I-10) to the south. Other sources of noise in the area include but are not limited to construction of new housing and other structure improvements, open-pit mine operations along Vista Chino Road, Xavier College Preparatory High School use near Cook Street, auto salvage yard operations near Sierra Del Sol Road, impulse train noise from the Union Pacific Railway Company operated railway located south of I-10, and aircraft accessing local airports (e.g., Palm Springs Regional Airport and Bermuda Dunes Airport). Open pit mine operations along Vista Chino Road, as well as auto salvage operations on Sierra Del Sol Road,

generate noise from heavy-duty construction equipment and from trucks transporting product to and from the gravel pit and salvage yard. Except for aircraft and train noise, these noise levels are typically restricted to daytime hours.

Recorded ambient noise conditions were conducted at two sensitive receptor locations within the Project area and are presented within Table 3.9-4 (Ambient Noise Measurement Results). Each noise measurement is provided only as a likely representation of daytime ambient noise conditions. In addition to presenting the recorded ambient noise levels, Table 3.9-4 provides an overview description of the existing noise sources observed at these locations. While ambient noise measurements were taken in 2012, ongoing field reconnaissance and satellite imagery indicates only minor changes in land use patterns occurring. Additionally, if traffic volumes have increased, ambient noise levels could be greater than those shown in Table 3.9-4. Therefore, the ambient levels shown in Table 3.9-4 are considered representative, or conservative, to existing 2020 conditions.

Table 3.9-4. Ambient Noise Measurement Results

No.	Description	Measurement				
		Time	Lmin	Leq	Lmax	Notes
1	Reach 3: Xavier College Preparatory High School, Palm Desert, CA	11:00 – 11:15 a.m.	45.3	56.4	65.0	Measurement was conducted on the northeast side of the campus. Primary noise sources were traffic from Cook Street to the west, Cowboy Drive to the south, and outdoor school activities. Also present were distant dog barks and construction noise.
2	Reach 4: Washington Street at 38th Avenue, Palm Desert, CA	11:30 – 11:45 a.m.	41.1	52.0	56.2	Measurement was conducted on the northwest side of the intersection at Coachella Valley National Wildlife Refuge entrance. Primary noise source was traffic on Washington Street. Should be noted that traffic volumes on Washington Street decrease greatly north of Del Webb Boulevard. Concentrated commercial and residential uses are located south of Del Webb Boulevard.

Notes: All measurements are in dBA and were taken on October 4, 2012 using a Quest Technologies Model 2800 Impulse Integrating Sound Level Meter. During each measurement, the sound meter microphone was covered with a windscreen to eliminate wind noise as part of the ambient condition measurements. Due to regular strong gusts, wind noise generally exceeded the measured Leq presented.

Noise Sensitive Receptors

A land use survey was conducted to identify any potentially sensitive receptors (e.g., schools, residences, and recreational facilities) in the general vicinity of the proposed Project. Sensitive noise receptors along Reaches 1 through 4 include single-family residential units, as well as church, recreation, and school uses. The Coachella Valley National Wildlife Refuge, located north of Reaches 3 and 4, is also considered a sensitive noise receptor, primarily due to recreational purposes. An additional description of surrounding land uses is provided in Section 3.8, Land Use and Recreation.

3.9.4 Regulatory Framework

Federal

There are no federal noise standards that directly regulate environmental noise. Table 3.9-5 provides a summary of recommended noise levels from the U.S. Environmental Protection Agency (USEPA) for

protecting public health and welfare with an adequate margin of safety. With regard to noise exposure and workers, the federal Occupational Safety and Health Administration (OSHA) establishes regulations to safeguard the hearing of workers exposed to occupational noise (29 CFR Section 1910.95, Code of Federal Regulations).

Table 3.9-5. Examples of Protective Noise Levels Recommended by USEPA

Effect	Maximum Level 24-hour Leq	Exterior or Interior Area
Hearing loss	70 dBA	All areas.
Outdoor activity interference and annoyance	55 dBA	Outdoors in residential areas and farms and other outside areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	55 dBA	Outdoor areas where people spend limited amounts of time, such as schoolyards, playgrounds, etc.
Indoor activity interference and annoyance	45 dBA	Indoor residential areas.
	45 dBA	Other indoor areas with human activities such as schools, etc.

Source: USEPA, 1974.

State

The California Office of Safety and Health Administration (Cal/OSHA) also regulates employee noise exposure, as mandated by Title 8 of the California Code of Regulations, Group 15, Article 105 Sections 5095-5100. Additionally, a Hearing Conservation Program must be instituted when employees are exposed to noise levels of an 8-hour, time-weighted average at or greater than 85 dBA.

The California Office of Planning and Research has developed guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. These CNEL noise recommendations are listed in Table 3.9-6 but are not regulation. Instead, they are provided as a reference for local jurisdictions when creating General Plan and local noise policy (OPR, 2003).

Local

Most of the study area is located within unincorporated Riverside County and includes the community of Thousand Palms. Cities near the study area include Cathedral City to the northwest, the City of Indio to the southeast, and the cities of Rancho Mirage and Palm Desert, to the south across the I-10 freeway. However, as Project noise is primarily limited to activities occurring within Reaches 1 through 4 and along roadways north of I-10, noise generated during construction and O&M is expected to be limited to areas within unincorporated Riverside County. The Riverside County General Plan and Noise Ordinance regulate the community of Thousand Palms. As such, the local noise regulatory framework discussion is limited to Riverside County.

Table 3.9-6. Land Use Compatibility for Community Noise Environment Local Regulations and Standards

Land Use Category	Community Noise Exposure – CNEL (dBA)													
	50		55		60		65		70		75		80	
Residential – Low Density Single Family, Duplex, Mobile Homes														
Schools, Libraries, Churches, Hospitals, Nursing Homes														
Playgrounds, Neighborhood Parks														

	Normally Acceptable. Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.
	Normally Unacceptable. New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable. New construction or development generally should not be undertaken.

Source: OPR, 2003.

Riverside County General Plan

The County of Riverside General Plan Noise Element describes the acceptable community noise standards or levels for various types of land uses and sensitive noise receptors within County territory. In addition, the General Plan provides direction on mitigating noise levels that are not compatible with the acceptable community noise standards. The county's standards are very similar to the State community noise exposure levels listed above in Table 3.9-6. Policies for mobile noise sources are as follows (Riverside County, 2015a):

- ***Policy N 6.3.*** *Require commercial or industrial truck delivery hours to be limited when adjacent to noise-sensitive land uses unless there is no feasible alternative or there are overriding transportation benefits.*

The policies for temporary construction noise identified as part of the Riverside County Noise Element are presented in the most recent version of the General Plan (Riverside County, 2015a), as listed below:

- ***Policy N 13.1****. Minimize the impacts of construction noise on adjacent uses within acceptable practices.*
- ***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 utilizes noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.*

Riverside County Noise Ordinance

The County noise ordinance regulates noise sources on one property that may impact adjacent properties. The noise ordinance sets general noise standards that limit noise levels according to the land use

designation of the affected property. However, per Riverside County Code, Ordinance No. 847 Section 2, sound emanating from the following sources is exempt from the performance standards identified within the County's noise ordinance (Riverside County, 2015b):

- Facilities owned or operated by or for a governmental agency.
- Capital improvement projects of a governmental agency.
- Private construction projects located within one-quarter (1/4) of a mile from an inhabited dwelling, provided that: (1) construction does not occur between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September; and (2) Construction does not occur between the hours of 6:00 p.m. and 7:00 a.m. during the months of October through May.
- The maintenance or repair of properties, provided such maintenance occurs between the hours of 7:00 a.m. and 8:00 p.m.

Consistency

Table 3.9-7 provides a list of county plans and policies that are applicable to noise and includes a discussion of the Project's consistency with each plan or policy.

Table 3.9-7. Consistency with Applicable Plans and Policies – Noise

Plan/Policy	Consistency	Explanation
Riverside County General Plan Noise Element – Policy N 13.1: Minimize construction noise on adjacent uses.	Yes	EC N-1, EC N-2, and proposed Mitigation Measure N-1 ensure that best management practices are implemented to reduce construction noise and minimize impacts.
Riverside County General Plan Noise Element – Policy N 13.2: Limit construction activities to established hours.	Yes	Construction work would be performed Monday through Friday between 7:00 a.m. and 3:30 p.m. No work would occur on Saturday, Sunday, holidays, or during identified schedule constraints without CVWD's written consent.
Riverside County General Plan Noise Element – Policy N 13.4: Require construction equipment to have noise reduction features.	Yes	EC N-1, EC N-2, and proposed Mitigation Measure N-1 ensure that best management practices (including, proper mufflers) are implemented to reduce construction noise and minimize impacts.

3.10 Paleontological Resources

This section describes baseline environmental conditions in the Project study area relative to paleontological resources. This information is generally derived from the *Paleontological Resource Assessment for the Proposed Thousand Palms Flood Control Project, Riverside County, California* prepared by Applied EarthWorks, Inc. (see Appendix G).

3.10.1 Environmental Baseline

A paleontological investigation was completed to identify the geologic units within the proposed Project area and assess their paleontological resource potential. Paleontological resources are the evidence of once-living organisms as preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (trackways, imprints, burrows, etc.). In general, fossils are greater than 5,000 years old (older than Middle Holocene) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks formed under certain conditions.

Significant paleontological resources are defined as "identifiable" vertebrate fossils, uncommon invertebrate, plant, and trace fossils that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, or biochronological data. These data are important because they are used to examine evolutionary relationships, provide insight on the development of and interaction between biological communities, and establish time scales for geologic studies, and for many other scientific purposes.

Paleontological resources are not found in "soil" but are contained within the geologic deposits or bedrock that underlies the soil layer. In order to ascertain whether a particular project area has the potential to contain significant fossil resources at the subsurface, it is necessary to review relevant scientific literature and geologic mapping to determine the underlying geology and stratigraphy of the area. Further, in order to delineate the boundaries of an area of paleontological sensitivity, it is necessary to determine the extent of the entire geologic unit because paleontological sensitivity is not limited to surface exposures of fossil material.

3.10.1.1 Regional Geology

The Project area in the Coachella Valley within the Colorado Desert geomorphic province in California. The Colorado Desert extends from the Mojave Desert to the north, the Colorado River on the east, the Peninsular Ranges on the west, and south into Mexico. Dominant features within the Colorado Desert include the Salton Trough; the Colorado River; and the Orocopia, Chocolate, Palo Verde, and Chuckwalla mountains (Applied Earthworks, Inc., 2016; Appendix G). The Coachella Valley is located within the Salton Trough, a large structural depression that extends from the San Gorgonio Pass in the north to the Gulf of Mexico in the south. The Salton Trough is a graben structure, bounded by roughly parallel northwest-trending faults, including the San Andreas Fault zone, which is directly north of the Project area, and the San Jacinto and Elsinore faults to the southeast (Alles, 2011; Applied Earthworks, Inc., 2016; Appendix G). During the Pliocene, the Salton Trough formed due to spreading and subsidence associated with the rift system that opened the Gulf of California, which continues to undergo approximately 48 millimeters per year of spreading. The Salton Trough would currently be under water as part of the Gulf of California if not for millions of years of sedimentation from the Colorado River (Alles, 2011). During the Pliocene to Early Pleistocene, sedimentation along the Colorado River resulted in the build-up of a substantial delta, which eventually separated the marine waters of the Gulf of California from the brackish and fresh waters of the Salton Trough (Jefferson, 2019). Since the Late Pleistocene, the Salton

Trough was periodically occupied by the freshwater Lake Cahuilla. The lake formed, drained, and reformed between approximately 37,000 to 300 years before present as a result of fluctuations in the course of the Colorado River and the subsequent diversion of the river's mouth from the Gulf of California to the Salton Trough (Deméré, 2002; Applied Earthworks, Inc., 2016; Appendix G).

3.10.1.2 Geology and Paleontology of the Project Area

The Project area is immediately underlain by Quaternary surficial deposits of Holocene age. These Holocene deposits may be underlain at an unknown depth by older Pleistocene alluvium and/or the late Pliocene to early Pleistocene Ocotillo Conglomerate, which are exposed nearby. The geology and paleontology of these units is described below.

The Project area is immediately underlain by Quaternary alluvial fan (Qyf) and valley (Qya) deposits, ephemeral wash (Qw) deposits, and significant eolian (Qe) accumulation. The Quaternary alluvial fan deposits exposed near Reaches 1 and 2 consist of unconsolidated to moderately consolidated, boulder, cobble, gravel, sand, and silt deposits derived from the erosion of rock units in the Indio Hills. The alluvial fan unit is moderately dissected by recent alluvial wash deposits composed of unconsolidated sand and gravel deposited in ephemeral channels. Quaternary alluvial valley sediments are exposed along Reaches 3 and 4, further south from the Indio Hills, toward the center of the Coachella Valley. These sediments are characterized by unconsolidated to moderately consolidated, undissected, clay, silt, sand, and gravel. Eolian deposits composed of unconsolidated, well-sorted, wind-blown sand are widespread along Reaches 3 and 4 (Bedrossian, et al., 2012).

According to Dibblee and Minch (2008), the Project area is located approximately two miles northwest of the northernmost shoreline of ancient Lake Cahuilla; therefore, fine-grained Quaternary lacustrine Lake Cahuilla sediments, though common throughout the central Salton Trough, are not expected to be present within the Project area. However, the Holocene age surficial deposits mapped in the Project area may be underlain at moderate depth by older Pleistocene alluvial deposits, which have proven to yield scientifically significant Ice Age vertebrate fossils throughout Southern California and Riverside County (Springer et al., 2009). Furthermore, the Ocotillo Conglomerate is exposed less than 500 feet northwest of Reach 1 and may underlie a portion the Quaternary surficial deposits in the Project area at moderate depth. Several localities have been previously identified within the Ocotillo Conglomerate, which have yielded numerous fossil specimens belonging to the Borrego Local Fauna (LF) (Applied Earthworks, Inc., 2016; Appendix G). Recovered fossil specimens include horse, camel, pronghorn, elk, deer, zebra, oxen, ground sloth, badger, bear, dire, wolf, coyote, mountain lion, saber tooth cat, rabbit, gopher, squirrel, rat, sucker fish, hawk, eagle, duck, vulture, owl, flamingo, tortoise, and pond turtle.

To determine whether fossil localities have been previously discovered within a project area or a particular rock unit, a search of pertinent local and regional museum repositories for paleontological localities within and nearby the project area should be performed. For the Thousand Palms Flood Control Project, a museum records search was conducted using the University of California Museum of Paleontology's (UCMP's) online database (2016) and PaleoBiology Database (2016), which contain paleontological records for Riverside County. In addition, a review of Natural History Museum of Los Angeles County (LACM) locality records for the Coachella Valley was also performed. No previously recorded fossils have been documented from within Quaternary surficial deposits in the Project area or vicinity. However, at least one vertebrate locality (LACM 5832) was previously recorded within the Ocotillo Conglomerate, east of the Project area within the Indio Hills, which yielded a fossil specimen of camel (Applied Earthworks, Inc., 2016; Appendix G).

3.10.1.3 Paleontological Resource Potential Based on Geologic Units

Using baseline information gathered during a paleontological resource assessment, the paleontological resource potential of the geologic unit(s) (or members thereof) underlying a project area can be assigned to one of four categories defined by the Society of Vertebrate Paleontology (SVP) (2010). These categories include high, undetermined, low, and no potential. The criteria for each sensitivity classification and the corresponding mitigation recommendations are summarized in Table 3.10-1.

Table 3.10-1. Paleontological Sensitivity Categories

Resource Potential*	Criteria	Mitigation Recommendations
No Potential	Rock units that are formed under or exposed to immense heat and pressure, such as high-grade metamorphic rocks and plutonic igneous rocks.	No mitigation required.
Low Potential	Rock units that have yielded few fossils in the past, based upon review of available literature and museum collections records. Geologic units of low potential also include those that yield fossils only on rare occasion and under unusual circumstances.	Mitigation is not typically required.
Undetermined Potential	In some cases, available literature on a particular geologic unit will be scarce and a determination of whether or not it is fossiliferous or potentially fossiliferous will be difficult to make. Under these circumstances, further study is needed to determine the unit's paleontological resource potential (i.e., field survey).	A field survey is required to further assess the unit's paleontological potential.
High Potential	Geologic units with high potential for paleontological resources are those that have proven to yield vertebrate or significant invertebrate, plant or trace fossils in the past or are likely to contain new vertebrate materials, traces, or trackways. Rock units with high potential also may include those that contain datable organic remains older than late Holocene (e.g., animal nests or middens).	Typically, a field survey as well as on-site construction monitoring will be required. Any significant specimens discovered will need to be prepared, identified, and curated into a museum. A final report documenting the significance of the finds will also be required.

Source: Adapted from SVP, 2010.

Based on the literature review and museum records search results (see Section 3.10.1.2), the geologic deposits underlying the Project area would have a low paleontological sensitivity in accordance with criteria set forth by SVP (2010), as they are generally too young to preserve fossil material. However, these deposits may be underlain at moderate depth by older Pleistocene alluvium or the Pliocene-Pleistocene Ocotillo Conglomerate, which have proven to yield an abundant and diverse vertebrate fauna from exposures within the Riverside County and the Coachella Valley. Consequently, the likelihood of impacts to scientifically significant vertebrate fossils as a result of Project development is low, unless excavations disturb older underlying sensitive units.

The paleontological sensitivity ratings of the geologic units in the Project area are shown in Table 3.10-2.

Table 3.10-2. Geologic Units in Project Area and Recommended Paleontological Sensitivity

Geologic Unit	Abbreviation	Age	Typical Fossils	Paleontological Resource Potential
Quarternary surficial deposits	Qya, Qyf, Qw, Qe	Holocene	None	Low (but may overlie older sensitive units at moderate depth).

Source: Geology taken from Lancaster et al., 2012.

3.10.2 Regulatory Framework

Paleontological resources (i.e., fossils) are considered nonrenewable scientific resources because once destroyed, they cannot be replaced. As such, paleontological resources are afforded protection under various federal, State, and local laws and regulations.

Federal

The National Environmental Policy Act of 1969 (NEPA)

This law requires that all federal agencies "utilize a systematic, interdisciplinary approach" to make informed, publicly supported decisions regarding environmental issues (Section 102 [2] [A]). NEPA was enacted to promote "efforts which will prevent or eliminate damage to the environment…. and will preserve important historic, cultural, and natural aspects of our national heritage" (42 U.S.C. 4321 and 4331-4335).

Antiquities Act of 1906

This law establishes a penalty for the unlawful appropriation, excavation, or injury to any "historic or prehistoric ruin or monument, or any object of antiquity" that is situated on federal lands or federally-controlled lands (16 U.S.C. 431-433).

The National Historic Preservation Act of 1966 (NHPA)

This law provides leadership and financial and technical assistance to foster prehistoric and historic preservation in partnership with States, Indian tribes, Native Hawaiians, and local governments. Specifically, the Section 106 of the NHPA is relevant because it provides for the survey, recovery, and preservation of paleontological resources when they are found in culturally related contexts, and when they may be destroyed or lost due to a federal, federally licensed, or federally funded project (Public Law 89-665; 80 Stat. 915; 16 United States Code 470 et seq.

Federal Land Policy and Management Act of 1976 (FLPMA)

This law (P.L. 94-579; 90 Statute 2743, U.S.C. 1701-1782) requires that public lands be managed in a manner that will protect the quality of their scientific values. Specifically, FLPMA was established as a public land policy to "provide for the management, protection, development, and enhancement of the public lands." FLPMA requires federal agencies to manage public lands so that environmental, historic, archeological, and scientific resources are preserved and protected, where appropriate. Though FLPMA does not refer specifically to fossils, the law does protect scientific resources, which includes significant fossils, including vertebrate remains. FLPMA regulates the "use and development of public lands and resources through easements, licenses, and permits." The law requires the public lands to be inventoried so that the data can be used to make informed land-use decisions, and requires permits for the use, occupancy, and development of certain public lands, including the collection of significant fossils for scientific purposes (43 U.S.C. 1701 Section 102, 302).

Code of Federal Regulations, Title 43.

Under the Title 43, Code of Federal Regulations, Section 8365.1–5, the collection of scientific and paleontological resources, including vertebrate fossils, on federal land is prohibited. The collection of a "reasonable amount" of common invertebrate or plant fossils for non-commercial purposes is permissible (43 CFR 8365.1-5).

State

The California Environmental Quality Act (CEQA)

This law encourages the protection of all aspects of the environment by requiring State and local agencies to prepare multidisciplinary analyses of the environmental impacts of a proposed project, and to make decisions based on the findings of those analyses. CEQA also considers the laws and procedures of local California jurisdictions.

CEQA includes in its definition of historical resources, "any object [or] site …that has yielded or may be likely to yield information important in prehistory" (14 CCR 15064.5[3]), which is typically interpreted as including fossil materials and other paleontological resources. More specifically, destruction of a "unique paleontological resource or site or unique geologic feature" constitutes a significant impact under CEQA (State CEQA Guidelines Appendix G). CEQA does not provide an explicit definition of a "unique paleontological resource," but a definition is implied by comparable language within the act relating to archeological resources: "The procedures, types of activities, persons, and public agencies required to comply with CEQA are defined in: Guidelines for the Implementation of CEQA, as amended March 29, 1999" (Title 14, Chapter 3, California Code of Regulations: 15000 et seq.).

Treatment of paleontological resources under CEQA is generally similar to treatment of cultural resources, requiring evaluation of resources in the project area; assessment of potential impacts on significant or unique resources; and development of mitigation measures for potentially significant impacts, which may include avoidance, monitoring, or data recovery excavation.

The California Public Resources Code 5097.5

This law affirms that no person shall willingly or knowingly excavate, remove, or otherwise destroy a vertebrate paleontological site or paleontological feature without the express permission of the overseeing public land agency. It further states under Code 30244 that any development that would adversely impact paleontological resources shall require reasonable mitigation. These regulations apply to projects located on land owned by or under the jurisdiction of the State or any city, county, district, or other public agency (Cal. Pub. Res. Code § 5097.5).

Local

Riverside County

Paleontological resources are addressed under the Multipurpose Open Space Element of the Riverside County General Plan (Riverside County, 2015), which states the following:

- **Policy OS 19.7** When existing information indicates that a site proposed for development has low paleontological sensitivity as shown on Figure OS-8 of the Multipurpose Open Space Element of the Riverside County General Plan, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified, and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.
- **Policy OS 19.8** Whenever existing information indicates that a site proposed for development may contain biological, paleontological, or other scientific resources, a report shall be filed stating the extent and potential significance of the resources that may exist within the proposed development and appropriate measures through which the impacts of development may be mitigated;

- **Policy OS 19.9** Whenever paleontological resources are found, the County Geologist shall direct them to a facility within Riverside County for their curation, including the Western Science Center in the City of Hemet.

The SABER Policy (Safeguard Artifacts Being Excavated in Riverside County) enacted in October 2011 by the Riverside County Board of Supervisors mandates that any paleontological resources found or unearthed in the County of Riverside be curated at the Western Science Center in the city of Hemet. This new policy was included as an amendment to the Multipurpose Element of the General Plan Update in 2015.

Consistency

Table 3.10-3 provides a list of county plans and policies that are applicable to paleontological resources and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.10-3. Consistency with Applicable Plans and Policies – Paleontological Resources

Plan/ Policy	Consistency	Explanation
Riverside County General Plan Multipurpose Open Space Element - Policy OS 19.7: When a site may have low paleontological sensitivity, no direct mitigation is required unless a fossil is encountered.	Yes	With implementation of Mitigation Measures PR-1 and PR-2, the Project would be consistent.
Riverside County General Plan Multipurpose Open Space Element - Policy OS 19.8: File a report stating extent and potential significance of biological, paleontological, or other scientific resources for development projects and mitigation.	Yes	This EIR/EIS shall be filed with the County of Riverside; Mitigation measure are proposed to reduce impacts to the extent feasible.
Riverside County General Plan Multipurpose Open Space Element - Policy OS 19.9: Whenever Paleontological resources are found the County Geologist will direct them to curation.	Yes	With implementation of Mitigation Measures PR-1 and PR-2, the Project would be consistent.

3.11 Public Safety

This section describes baseline environmental conditions in the Project study area relative to public safety, focusing on hazardous materials and environmental contamination and hazards related to airports and wildland fires. Flood hazards are addressed in Section 3.14 (Water Resources). This information is generally derived from the Whitewater River Basin (Thousand Palms) Flood Control Project Final Environmental Impact Statement/Environmental Impact Report (USACE, 2000).

3.11.1 Environmental Baseline

3.11.1.1 Environmental Contamination

A Limited Phase I Environmental Site Assessment (ESA) was completed for the Project area in July 1997 to identify properties in the study area where releases of hazardous materials or petroleum hydrocarbons are known or suspected. The ESA included a review of historic aerial photographs of the study area, a search of databases listing known or suspected sites of contamination, and field reconnaissance of the area. A revised Phase I ESA was not repeated in 2020; conditions relevant to environmental contamination are considered comparable, except for illegal dumping occurring throughout the Project area. A search of the United States Environmental Protection Agency (USEPA) website confirmed there are no hazardous waste cleanup locations or grant areas within 15 miles of Thousand Palms, California. The closest listed site is the Bureau of Land Management-Coachella Landfill (EPA ID: CA0000094482), which is stated to not qualify for the National Priorities List (NPL), or Superfund list based on existing information (USEPA, 2016).

Following is a summary of the Phase I ESA findings and existing conditions in the study area (USACE, 2000).

- No properties on the CERCLIS list, CalSites list, or the list for hazardous waste treatment, storage, or disposal (TSD) facilities were identified in the Project area. However, the database search identified seven spill incidents, eight leaking underground storage tank (UST) properties, two solid waste landfills, 13 registered UST properties, two large quantity generators of hazardous waste, and two small quantity generators of hazardous waste.
- No evidence of chemical dumping or staining was observed in the study area. However, dumping of wastes is a concern throughout the undeveloped and unprotected portions of the study area, particularly where convenient road access is present. Materials observed to have been dumped include trash, wood, tires, concrete, piping, metal, construction debris, empty drums, and palm trees.
- Many residential and commercial structures in the area are old, dating back to at least 1950. Asbestos and lead paint may be issues of concern for houses removed during Project construction, and appropriate precautions would be necessary.
- Former agricultural areas, farmed from at least 1950 to the 1980s, have the potential to be affected by historical pesticide and herbicide use.
- The Rio Del Sol Road area, including Vista Chino and Sierra Del Sol Road, contains numerous commercial and industrial businesses, some of which contain a solid waste landfill, automobile junkyards, truck repair operations, areas of fill soil with various construction debris, and/or asphalt batch operations that have the potential to cause contamination of soils.
- The downtown area of Thousand Palms and a few portions of Myoma contain properties of potential concern, particularly facilities with underground storage tanks (USTs) or leaking USTs, generators of hazardous waste, locations of spill incidents, and locations of illegal dumping. The leaking UST and spill cases have been removed from agency databases, presumably after successful clean-up.

- An unofficial shooting range is located at the north end of Shadow Mountain Road, west of an existing quarry/mining operation. Approximately six adjacent shooting ranges have been carved into the hillside and are filled with spent bullet casings of all sizes, and target objects including glass, wood, refrigerators, and automobile parts. Lead shot is also present in the hillsides. Soils concentrated with lead and other heavy metals have the potential to be classified as regulated, hazardous waste requiring proper removal and disposal.

3.11.1.2 Hazards

Airports. Other hazards associated with existing environmental conditions, include airports and the associated hazards inherent with airport operations. There are two airports near the Project area. The Palm Springs International Airport (FAA Identifier: PSP) is located near the junction of Vista Chino Road and Gene Autry Trail (State Route 111), approximately 5.4 miles west of the nearest Project feature. Approximately 157 aircraft operate out of this airport daily (based on a 12-month period ending December 31, 2018), utilizing two parallel runways (AirNav, 2021a). The Bermuda Dunes Airport (FAA Identifier: UDD) is located on Avenue 42 near the intersection of Country Club Drive, approximately 2.2 miles southeast of Reach 4, and is used primarily by small fixed-winged planes. Approximately 38 aircraft operate out of this airport daily (based on a 12-month period ending December 31, 2019) utilizing one runway (AirNav, 2021b).

Wildland Fires. A substantial portion of Riverside County is undeveloped and consists of rugged topography and highly flammable native vegetation. Fire potential for the County is typically greatest in the months of August, September, and October, when dry vegetation coexists with hot, dry Santa Ana winds. There is a long history of wildfires in Riverside County, with over 80 large fires (300 acres or more) occurring between 2001 and 2017 (Riverside County, 2018 – Table 20: Riverside County Large Fires 300 Acres and Greater [2001-2017]). The wildfire susceptibility risk of proposed Project is shown in the County of Riverside Multi-Jurisdictional Local Hazard Mitigation Plan as being in an area having little or no threat to moderate (Riverside County, 2018 –Map 9). Per the County of Riverside General Plan Safety Element, the proposed Project is in a low wildfire zone (Riverside County, 2021a). And per the California Department of Forestry and Fire Protection (CAL FIRE), the proposed Project is in a non-Very High Fire Hazard Severity Zone (CAL FIRE, 2021).

Emergency Response. The Project would be served by the Riverside County Fire Department from Station 35, Roy Wilson, located at 31920 Robert Road, Thousand Palms and Station 81, North Bermuda Dunes, located at 37955 Washington Street, Riverside County (RCFD, 2021). These fire stations are located within two miles from the closest Project features. The Riverside County Sheriff's Department, Palm Desert Station, covers the western half of the Coachella Valley's unincorporated areas. The Sheriff's Department contracts with the unincorporated cities of Thousand Palms to provide police services (RCSD, 2021). The Riverside County Sheriff's office is located at 72248 Northshore Street, Suite 101, Thousand Palms, which is within one mile of the proposed Project.

3.11.2 Regulatory Framework

Federal

U.S. Environmental Protection Agency (USEPA)

The USEPA was established in 1970 in response to the growing public demand for cleaner water, air and land. The USEPA was established to consolidate in one agency a variety of federal research, monitoring, standard-setting, and enforcement activities to ensure environmental protection. USEPA's mission is to

protect human health and to safeguard the natural environment — air, water, and land — upon which life depends. USEPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Where national standards are not met, USEPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the USEPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. The Resource Conservation and Recovery Act of 1976 was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law (US Code Title 42, Chapter 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, and establishes a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enables the revision of the National Contingency Plan. The National Contingency Plan (Title 40, Code of Federal Regulation [CFR], Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The National Contingency Plan also established the National Priorities List (NPL), which is a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the U.S. and its territories. The NPL is intended primarily to guide the USEPA in determining which sites warrant further investigation and remediation. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

Other federal regulations overseen by the USEPA relevant to hazardous materials and environmental contamination include Title 40 CFR Chapter I, Subchapter D – Water Programs and Subchapter I – Solid Wastes. Title 40 CFR Chapter I, Subchapter D Parts 116 and 117 designate hazardous substances under the Federal Water Pollution Control Act and set forth a determination of the reportable quantity for each substance that is designated as hazardous in Title 40 CFR Part 116. Title 40 CFR Part 117 applies to quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States. Title 40 CFR Part 112 (Oil Pollution Prevention) and associated Spill Prevention, Countermeasure, and Control (SPCC) rule help facilities prevent oil discharges from reaching navigable waters of the U.S. or adjoining shorelines. SPCC plans must be prepared, certified (by a professional engineer), and implemented by facilities that store, process, transfer, distribute, use, drill, produce, or refine oil or oil production.

Occupational Safety and Health Administration (OSHA), U.S. Department of Labor

OSHA's mission is to assure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. OSHA staff establishes protective standards, enforces those standards, and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in Title 29 CFR Part 1910.

Hazardous Materials Transportation Act

The United States Department of Transportation (USDOT) has the regulatory responsibility for the safe transportation of hazardous materials under the Hazardous Materials Transportation Act (HMTA), as amended and codified in 49 C.F.R. 171–180. These regulations identify the required shipping papers, package marking, labeling, transport vehicle placarding, training, and registrations applicable to the shipment and transportation of hazardous materials in 49 U.S.C. 5101 et seq.

Federal Aviation Administration (FAA)

The FAA regulates aviation at regional, public, private, and military airports. The FAA regulates objects affecting navigable airspace and structures taller than 200 feet. The U.S. and California Departments of Transportation require applicants to submit FAA Form 7460-1, Notice of Proposed Construction or Alteration, if structures meet the requirements. Notification allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing any adverse impacts on the safe and efficient use of navigable airspace. Any structure that would constitute a hazard to air navigation, as defined in Title 14 Part 77, requires issuance of a permit from the California Department of Transportation's Aeronautics Program. The permit is not required if the FAA aeronautical study determines that the structure has no impact on air navigation.

Due to the distance of the nearest airport (Bermuda Dunes Airport, located approximately 2.5 miles southeast of the nearest Project element) and the maximum levee height of 14 feet above grade (refer to Section 2.2.1), the proposed Project does not require FAA Form 7460-1 be filed.

State

California Environmental Protection Agency (Cal-EPA)

The Cal-EPA was created in 1991. It centralized California's environmental authority, consolidating the California Air Resources Board (CARB), State Water Resources Control Board (SWRCB), Department of Resources, Recycling and Recovery (CalRecycle), Department of Toxic Substances Control (DTSC), Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation under one agency. These agencies were placed within the Cal-EPA "umbrella" to create a cabinet-level advocate for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Its mission is to restore, protect and enhance the environment, and to ensure public health, environmental quality, and economic vitality. The DTSC, CalRecycle, and SWRCB regulate hazardous materials and hazardous waste that have the potential to cause soil, water, and groundwater contamination, and their missions are summarized below.

- *Department of Toxic Substances Control.* The DTSC mission is to restore, protect, and enhance the environment, and to ensure public health, environmental quality, and economic vitality by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.
- *Department of Resources Recycling and Recovery (CalRecycle).* The mission of CalRecycle is to protect the public health and safety and the environment through waste prevention, waste diversion, and safe waste processing and disposal.
- *State Water Resources Control Board.* The SWRCB mission is to preserve and enhance the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations.

Californians are protected from hazardous waste and materials by a Unified Program that ensures consistency throughout the State in regard to administrative requirements, permits, inspections, and enforcement. Cal-EPA oversees the program as a whole, and certifies local government agencies, known as Certified Unified Program Agencies (CUPA), to implement the hazardous waste and materials standards set by five different state agencies.

California Hazardous Waste Control Law (HWCL). The HWCL is administered by CalEPA to regulate hazardous wastes. While the HWCL is generally more stringent than RCRA, until the EPA approves the California program, both the State and federal laws apply in California. The HWCL lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

Department of Toxic Substances Control (DTSC)

DTSC is a department of Cal-EPA and is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code, primarily Division 20, Chapters 6.5 through 10.6, and Title 22 (Social Security), Division 4.5. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Government Code Section 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, California Department of Public Health lists of contaminated drinking water wells, sites listed by the SWRCB as having underground storage tank leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

California Office of Emergency Services

In order to protect public health and safety and the environment, the California Office of Emergency Services is in charge of establishing and managing statewide standards for business and area plans relating to the handling and release or threatened release of hazardous materials. Basic information on the location, type, quantity, and the health risks of hazardous materials handled, used, stored, or disposed of in the State, which could be accidentally released into the environment, needs to be made available to firefighters, health officials, planners, public safety officers, health care providers, regulatory agencies, and other interested parties. The information provided by business and area plans is necessary in order to prevent or mitigate the damage to the health and safety of persons and the environment from the release or threatened release of hazardous materials into the workplace and environment. These regulations are covered under Chapter 6.95 of the California Health and Safety Code Article 1 – Hazardous Materials Release Response and Inventory Program (Sections 25500-25520), and Article 2 – Hazardous Materials Management (Sections 25531-25543.3).

Code of California Regulations (CCR) Title 19, Public Safety, Division 2, Office of Emergency Services, Chapter 4 – Hazardous Material Release Reporting, Inventory, And Response Plans, Article 4 (Minimum Standards for Business Plans) establishes minimum statewide standards for Hazardous Materials Business Plans. These plans shall include the following: (1) a hazardous material inventory in accordance with Sections 2729.2 - 2729.7, (2) emergency response plans and procedures in accordance with Section 2731,

and (3) training program information in accordance with Section 2732. Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the State. Each business shall prepare a Hazardous Materials Business Plan if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

- 500 pounds of a solid substance
- 55 gallons of a liquid
- 200 cubic feet of compressed gas
- hazardous compressed gas in any amount
- hazardous waste in any quantity

California Occupational Safety and Health Administration (Cal-OSHA)

Cal-OSHA is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal-OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (Title 8 CCR Sections 337-340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

Title 8 CCR, Chapter 4, Subchapter 7, Group 14 and 15, and Group 16, Articles 107, 109, and 110 sets forth the Permissible Exposure Limit, the exposure, inhalation, or dermal permissible exposure limit for numerous chemicals. Included are chemicals, mixture of chemicals, or pathogens for which there is statistically significant evidence, based on at least one study conducted in accordance with established scientific principles, that acute or chronic health effects may occur in exposed employees.

It is the responsibility of Cal-OSHA to ensure compliance with the provisions of the Hazard Communication Standard. California Labor Code Sections 6360 through 6399.7 and Title 8 CCR Sections 5191 and 5194 are intended to ensure that both employers and employees understand how to identify potentially hazardous substances in the workplace, understand the health hazards associated with these chemicals, and follow safe work practices. This is accomplished by preparation of a Hazard Communication Plan.

Office of Environmental Health Hazard Assessment

Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, was enacted as a ballot initiative in November 1986. Proposition 65 was intended by its authors to protect California citizens and the State's drinking water sources from chemicals known to cause cancer, birth defects, or other reproductive harm, and to inform citizens about exposures to such chemicals. Proposition 65 requires the Governor to publish, at least annually, a list of chemicals known to the State to cause cancer or reproductive toxicity. The Office of Environmental Health Hazard Assessment has established safe harbor levels (levels of exposure that trigger the warning requirement) for some, but not all, listed chemicals. Businesses that cause exposures greater than the safe harbor level must provide Proposition 65 warnings. These safe harbor levels are available in the December 2020 Status Report available at https://oehha.ca.gov/media/downloads/proposition-65//safeharborlist032519.pdf. If there is no safe harbor level for a chemical, businesses that knowingly expose individuals to that chemical would generally be required to provide a Proposition 65 warning, unless the business could show that risks of cancer or reproductive harm resulting from the exposure would be below levels specified in Proposition 65 and its accompanying regulations.

Local

Riverside County

Cal-EPA designated the County of Riverside, Department of Environmental Health Hazardous Materials Branch as the CUPA for Riverside County. The role of the CUPA is to assure consolidation, consistency, and coordination of the hazardous materials programs within the County. The CUPA also oversees the two Participating Agencies (Corona Fire and Riverside Fire) that implement hazardous materials programs within the County. The Hazardous Materials Branch is responsible for overseeing six hazardous materials programs in the County, including inspecting the 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 Hazardous Materials Branch maintains an emergency response team that responds to hazardous materials and other environmental health emergencies 24 hours a day, 7 days a week.

Riverside County Hazardous Waste Management Plan (CHWMP). The CHWMP serves as the County's primary planning document for the management of hazardous substances. The CHWMP is a comprehensive document containing all the County programs for managing both hazardous materials and waste.

County of Riverside General Plan Safety Element

As required by State law, the Safety Elements of county and city General Plans contain policies for protection against hazards. The County of Riverside General Plan Safety Element has the following hazards-related policies (Riverside County, 2021a).

- **Policy S 4.1** All development and construction within Fire Hazard Severity Zones shall be reviewed by the Riverside County Fire Department and Building and Safety Department for consistency with the following requirements before the issuance of any building permits:

  a) All proposed development and construction shall meet minimum state, county, and local standards, and other legal requirements for fire safety, as defined in the Riverside County Building or Fire Codes, or by County zoning, or as dictated by the Building Official or the Transportation Land Management Agency, based on building type, design, occupancy, and use.

  b) In addition to the standards and guidelines of the California Building Code, California Fire Code, the Riverside County Code of Ordinances, Title 14 of the California Code of Regulations, and other appropriate fire safety provisions, developments shall incorporate additional standards for high-risk, high-occupancy, and dependent facilities where appropriate under the Riverside County Fire Code (Ordinance No. 787) Ordinance. These shall include assurance that structural and nonstructural architectural elements of the building will not impede emergency egress for fire safety staffing/personnel, equipment, and apparatus; nor hinder evacuation from fire, including potential blockage of stairways or fire doors.

  c) Proposed development and construction in Fire Hazard Severity Zones shall provide secondary public access, in accordance with Riverside County ordinances, where required. There shall be multiple points of ingress and egress that allow for emergency response vehicle access. Points of access shall also include visible street addresses and signs and sufficient water supplies, infrastructure for structural fire suppression, and other applicable local and state requirements.

d) Proposed development and construction in Fire Hazard Severity Zones shall use single loaded roads to enhance fuel modification areas, unless otherwise determined by the Riverside County Fire Chief.

e) Proposed development and construction in Fire Hazard Severity Zones shall provide a defensible space or fuel modification zones to be located, designed, constructed, and maintained to provide adequate defensibility from wildfires.

f) Prior to the approval of all parcel maps and tentative maps, the County shall require, as a condition of approval and as feasible and appropriate, the developer meet or exceed the State Responsibility Area Fire Safe Regulations and the Fire Hazard Reduction Around Buildings and Structures Regulations, particularly those regarding road standards for ingress, egress, and fire equipment access (see Gov. Code, Section 66474.02.)

g) Proposed development and construction of more than four residential units or more than 10,000 square feet of nonresidential space located in Very High Fire Hazard Severity Zones, or other appropriate zones as determined by the Riverside County Fire Department, shall submit and implement a fire protection plan as feasible and appropriate. This plan shall include provisions for roadways and access, firefighting infrastructure, signage, vegetation management, construction materials, and evacuations

- **Policy S 5.1** Enforce land use policies and existing criteria related to hazardous materials and waste through ongoing implementation of the programs identified in the County's Hazardous Waste Management Plan (CHWMP).
- **Policy S 5.2** Review all proposed development projects that manufacture, use, or transport hazardous materials for compliance with the CHWMP. Such projects shall provide a buffer zone, to be determined by the County, between the installation and property boundaries sufficient to protect public safety.
- **Policy S 5.8** Ensure that the use and disposal of hazardous materials in the County complies with local, state, and federal safety standards.

County of Riverside General Plan Western Coachella Valley Area Plan

Local hazard policies of the Western Coachella Valley Area Plan include (Riverside County, 2021b):

- **Policy WCVAP 23.3** Create flood control projects that maximize multi-recreational use and water recharge when possible.

Riverside County Airport Land Use Compatibility Plan

The County of Riverside has adopted an Airport Land Use Compatibility Plan (RCALUC, 2004) to govern land use issues involving airports. The nearest airport to the proposed Project is the Bermuda Dunes Airport, approximately 2.5 miles to the southeast. The influence area is depicted through compatibility zones, which for this airport extend into the proposed Project area. Reach 4 and the sand disposal area south of Avenue 38 fall within Compatibility Zones C, D, and E (RCALUC, 2004 – Map BD-1). The sand disposal area south of Avenue 38 also falls within the 55 CNEL (community noise equivalent level) noise compatibility contour (RCALUC, 2004 – Map BD-3). The proposed Project is not located within the Airspace Plan for the Bermuda Dunes Airport (RCALUC, 2004 – Map BD-2). The next closest airport is the Palm Springs International Airport. The proposed Project is located beyond the Palm Springs International Airport Compatibility Plan zones and noise compatibility contours (RCALUC, 2004).

The Riverside County Airport Land Use Commission's policy is to review only *major land use actions* as listed in Section 1.5.3. The proposed Project would not qualify as a major land use action, such that review by the Commission is not required.

Consistency

Table 3.11-1 provides a list of county plans and policies that are applicable to public safety and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.11-1. Consistency with Applicable Plans and Policies – Public Safety

Plan/Policy	Consistency	Explanation
Riverside County Hazardous Waste Management Plan (CHWMP)	Yes	The Project would not generate excessive amounts of hazardous materials or wastes.
County of Riverside General Plan Safety Element		
Policy S 4.1: Develop and enforce construction and design standards that ensure that proposed development incorporates fire prevention features.	Yes	The Project includes construction of levees and channels. Fire prevention would be relevant during construction, where standard best management practices and mitigation would apply (Mitigation Measure PS-1).
Policy S 5.1: Enforce the policies and siting criteria and implement the programs identified in the CHWMP.	Yes	The Project would not generate excessive amounts of hazardous materials or wastes. All laws related to hazardous materials use, transport, and disposal would be adhered to and required in the construction contracts.
Policy S 5.2 Review all development projects for compliance with the CHWMP.	Yes	The Project would not generate excessive amounts of hazardous materials or wastes. All laws related to hazardous materials use, transport, and disposal would be adhered to and required in the construction contracts.
Policy S 5.8 Use and disposal of hazardous waste will be compliant with local, state, and federal laws.	Yes	The Project would not generate excessive amounts of hazardous materials or wastes. All laws related to hazardous materials use, transport, and disposal would be adhered to and required in the construction contracts.
County of Riverside General Plan Western Coachella Valley Area Plan		
Policy WCVAP 23.3: Create flood control projects that maximize multi-recreational use and water recharge when possible.	Yes	The Project includes construction of levees and channels. The Project is not located in an area with existing recreational trails to connect to and does not lend itself to multi-recreational use or water recharge opportunities due to its location adjacent to a protected preserve area.
Riverside County Airport Land Use Compatibility Plan	Yes	The nearest airport to the Project location is the Bermuda Dunes Airport, approximately 2.5 miles to the southeast. The maximum levee height of 14 feet above grade (refer to Section 2.2.1) would be compatible with airport use.

3.12 Socioeconomics and Environmental Justice

This section describes affected environment for the issue area of socioeconomics, as characterized by population, housing, and employment. Also presented are baseline environmental justice data, which are characterized by the percentage of minority and low-income population within the overall population in the vicinity of the Thousand Palms Flood Control Project.

3.12.1 Environmental Baseline – Socioeconomics

The proposed Project is in the unincorporated community of Thousand Palms, in the Coachella Valley area of eastern Riverside County. Thousand Palms is a Census Designated Place (CDP), or an area where a population is concentrated but where a separate municipal government is not present, recognized by the U.S. Census Bureau for statistical purposes. Because the proposed Project would protect the community of Thousand Palms from flooding hazards, the socioeconomics study area is therefore defined as the community of Thousand Palms. Socioeconomic data is, however, presented for the entire Thousand Palms CDP, as that is the smallest geography available. For comparative purposes, this section also provides baseline socioeconomics conditions for Riverside County. Not all survey data is currently available for the year 2020, and therefore data from 2019 was used to supplement it.

3.12.1.1 Population

Table 3.12-1 shows recent population trends for the Thousand Palms CDP and Riverside County. As shown in Table 3.12-1, total population in the community of Thousand Palms decreased between 2011 and 2013, increased between 2013 and 2015, and then generally declined until 2020. Meanwhile, the growth rate has steady increased in Riverside County between 2010 and 2020.

Table 3.12-1. Population Trends

Year	Thousand Palms CDP	Riverside County
2011	7,578	2,154,844
2012	7,558	2,192,982
2013	7,453	2,228,528
2014	7,956	2,266,899
2015	8,222	2,298,032
2016	7,875	2,323,892
2017	7,356	2,355,002
2018	7,814	2,383,286
2019	6,794	2,411,439
2020	7,967	2,418,185

Source: U.S. Census Bureau, 2021.

3.12.1.2 Housing

Table 3.12-2 shows recent housing trends. Table 3.12-2 indicates that the Thousand Palms CDP has a vacancy rate greatly exceeding that of Riverside County (Unincorporated and Incorporated). Both the Thousand Palms CDP and Riverside County have seen an increase in the total number of housing units between 2011 and 2020, but a decrease in the median property values.

Table 3.12-2. Housing Characteristics and Trends

Category	Thousand Palms CDP			Riverside County		
	2011	2014	2020	2011	2014	2020
Total Housing Units	3,853	3,972	3,728	794,478	810,426	848,549
Occupied Housing Units	2,818	2,895	2,866	672,896	690,388	763,283
Vacant Housing Units	1,035	1,077	862	121,582	120,038	85,266
Vacancy Rate*	26.9%	27.1%	30.3%	15.3%	14.8%	2.1%
Median Home Value*	$157,500	$138,300	$181,600	$284,100	$236,400	$384,400

Source: U.S. Census Bureau, 2021.
Note:
* - Vacancy Rate and Median Home Value were calculated based on 2019 American Community Survey Data as 2020 survey data is not currently available at the time of this analysis.

3.12.1.3 Employment

Table 3.12-3 shows labor force data for the Thousand Palms CDP and Riverside County. The total workforce within the Thousand Palms CDP has decreased between 2011 and 2019, while increasing within Riverside County during the same period. As relevant to the proposed Project, Table 3.12-3 shows that in the Thousand Palms CDP, 11.4 percent of the workforce is in construction and maintenance occupations, compared to 10.9 percent in Riverside County as of 2019. Table 3.12-3 indicates that the unemployment rate in both Riverside County and the Thousand Palms CDP has generally declined between 2011 and 2019, despite an increase in 2014 for both areas.

Table 3.12-3. Labor Force Trends

Category	Thousand Palms CDP			Riverside County		
	2011	2014	2019	2011	2014	2019
Total Employed	2,933	2,764	2,738	868,898	895,237	1,074,894
Workforce in natural resources, construction, and maintenance occupations (percent of total workforce)	263 (9.0%)	396 (14.3%)	312 (11.4%)	103,204 (11.9%)	100,744 (11.3%)	117,421 (10.9%)
Unemployment Rate	9.0%	14.2%	6.1%	12.9%	14.3%	5.8%

Source: U.S. Census Bureau, 2021.

Table 3.12-4 shows household income data for the Thousand Palms CDP and Riverside County. As shown, the median income in the Thousand Palms CDP is less than Riverside County, despite increasing by approximately $10,000 between 2011 and 2020 for both areas.

Table 3.12-4. Household Income Trends

Category	Thousand Palms CDP			Riverside County		
	2011	2014	2020	2011	2014	2020
Median Income	$43,435	$43,813	$52,697	$58,365	$56,592	$73,260

Source: U.S. Census Bureau, 2021.

3.12.2 Environmental Baseline – Environmental Justice

Defining Environmental Justice Populations

According to the U.S. Council on Environmental Quality (CEQ) environmental justice guidelines, an environmental justice population would be identified if:

- A minority or low-income population percentage either exceeds 50 percent of the population of the affected area, or
- If the minority or low-income population percentage of the affected area is meaningfully greater than the minority or low-income population percentage in the general population or other appropriate unit of geographic analysis (e.g., a governing body's jurisdiction, the county or city in which the affected area is located within, neighborhood census tract, or another applicable unit).

The CEQ Environmental Justice Guidance defines "minorities" as individuals who are members of the following population groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black not of Hispanic origin, or Hispanic (CEQ, 1997). The total minority population has been calculated by subtracting the white alone, not Hispanic or Latino, population from the total population. For this analysis, an environmental justice minority population is identified when the minority population of the potentially affected area is greater than 50 percent.

The CEQ Environmental Justice Guidance defines "low-income populations" as populations with mean annual incomes below the annual statistical poverty level. For this analysis, low-income population was determined by utilizing the U.S. Census data for persons "below poverty level." The CEQ and United States Environmental Protection Agency (USEPA) guidance do not provide a discrete threshold for determining when a low-income population should be identified for environmental justice. For this analysis, an environmental justice low-income population is identified when the percentage of low-income population of the potentially affected area is equal to or greater than the low-income population of the greater geography.

Study Area Minority and Low-Income Populations

The localized study area for environmental justice is the Thousand Palms CDP. When reviewing the boundaries of U.S. Census tracts that contain the proposed Project, tract 445.20 contains the majority of Project area and has a matching population as that of the Thousand Palms CDP. Therefore, a smaller geography could not be identified where environmental justice data could be determined.

With respect to environmental justice and minority populations, Table 3.12-5 shows that both the Thousand Palms CDP and Riverside County as a whole are considered to have a disproportionate minority population (greater than 50 percent). As shown, the minority population of Thousand Palms is slightly lower than that of Riverside County.

With respect to environmental justice and low-income populations, Table 3.12-5 shows that the percent of the population living below the poverty level within the Thousand Palms CDP is less than that living within Riverside County as a whole.

Table 3.12-5. Minority and Low-Income Populations (2019)

Category	Thousand Palms CDP	Riverside County
Total Population	6,794	2,411,439
Minority Population	3,624 (51.3%)	1,559,737 (64.7%)
Percent Below Poverty Level	9.9%	10.4%

Source: U.S. Census Bureau, 2021.

3.12.3 Regulatory Framework

Federal

Executive Order 12898

In 1994 President Clinton issued the Executive Order (EO), Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, to focus federal attention on environmental and human health conditions in minority and low-income communities. EO 12898 promotes nondiscrimination in federal programs that substantially affect human health and the environment, and it provides information access and public participation relating to these matters. This order requires federal agencies (and state agencies receiving federal funds) to identify and address any disproportionately high or adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations. The CEQ oversees federal compliance with EO 12898.

Council on Environmental Quality's Environmental Justice Guidance Under the National Environmental Policy Act

To ensure that environmental justice concerns are effectively identified and addressed according to EO 12898, the CEQ, in consultation with the USEPA, has developed guidance to assist all federal agencies with implementing procedures. According to the CEQ's "Environmental Justice Guidance Under NEPA," agencies should consider the composition of affected areas to determine whether minority or low-income populations are affected by a proposed action, and, if so, whether those environmental effects may be disproportionately high or adverse (CEQ, 1997).

State

There are no State-level policies or regulations relevant to socioeconomics or environmental justice and this Project.

Local

Riverside County General Plan Housing Element

The Housing Element of the Riverside County General Plan identifies and establishes the County's policies with respect to meeting the needs of existing and future residents in Riverside County. Policies relevant to socioeconomics and this Project are listed below (Riverside County, 2021):

- **Goal 3, Affordable Housing:** Encourage construction, maintenance, improvement, and preservation of safe, decent, and sound affordable housing in unincorporated Riverside County.

Consistency

Table 3.12-6 provides a list of county plans and policies that are applicable to socioeconomics (only housing) and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.12-6. Consistency with Applicable Goals – Socioeconomics (Housing Only)

Plan/Policy	Consistency	Explanation
Riverside County General Plan Housing Element – Goal 3: Ensure safe and affordable housing.	Yes	The proposed Project would construct levees and channels to remove existing housing and areas with approved housing projects from the flood hazard zone.

3.13 Transportation

Presented within this section is information on existing transportation conditions in the vicinity of the Thousand Palms Flood Control Project (Project) and alternatives. Section 3.13.1 provides the existing setting, including background information on roadway traffic, rail, public transportation, and bicycle/ pedestrian transportation facilities. Airport information is provided in Section 3.11 (Public Safety).

3.13.1 Environmental Baseline

The affected environment for the Project includes public roadways disrupted by construction, those utilized by construction-related vehicles, and those utilized by maintenance-related vehicles. Figures 2-1, 2-2, and 2-3 (Reach Alignments) depict roadways that provide local and regional access to the Project area. A description of these roadways is provided below.

Regional Access Roadways

Interstate 10 (I-10) provides regional east-west access throughout Riverside County, including the Thousand Palms area. Near the Project site, I-10 is a six- to eight-lane highway that extends in a northwest-southeast direction from Date Palm Drive to Washington Street. Five interchanges provide access to the Project area off of I-10: Date Palm Drive, Ramon Road, Monterey Avenue, Cook Street, and Washington Street. Table 3.13-1 provides 2019 average daily traffic (ADT) and peak hour volumes at each segment of I-10 where there is an interchange providing access to the Project site. This represents the most currently available data.

Table 3.13-1. 2019 I-10 ADT and Peak Hour Volumes

I-10 Segment	ADT	Peak Hour
Date Palm Drive	101,000	9,000
Ramon Road	106,000	9,500
Monterey Avenue	107,000	9,700
Cook Street	105,000	9,400
Washington Street	93,000	8,400

Source: Caltrans, 2021a.

Notes: 2020 ADT and peak hour volumes at each segment of the I-10 were also investigated. However, these values are significantly lower than in 2019, likely due to decreased travel by the public because of the 2020 pandemic restrictions. Therefore, the 2019 data were considered more descriptive of the Project site and the 2020 data were not considered further in this analysis.

Local Access Roadways

Roadways near the Project site that provide local access include: Adams Street, Avenue 38, Bob Hope Drive/Rio Del Sol Road, Cook Street, Desert Mood Drive, Ramon Road, Sierra Del Sol, Thousand Palms Canyon Road, Varner Road, Via Las Palmas, Vista De Oro, and Washington Street. Figures 2-1, 2-2, and 2-3 illustrate these local roadways, which characterize the local study area relevant to this analysis. Due to expanding development in the Project area over the past decade, average daily traffic volumes and peak hour volumes for local roads have increased substantially. Table 3.13-2 lists the most currently published ADT volumes for some of the local study area roadways. ADT volumes are not available for all affected local roadways.

Table 3.13-2. Study Area Roadway ADT Estimated 2022 Volumes		
Roadway	**Segment**	**ADT Volumes**
Adams Street	Northbound, at 42nd Avenue	3,872
Cook Street	Northbound, at Frank Sinatra Drive	26,102
Frank Sinatra Drive	Westbound, at Cook Street	10,412
Frank Sinatra Drive	Eastbound, at Cook Street	6,747
Ramon Road	Eastbound, at Varner Road	12, 319
Ramon Road	Westbound, at Thousand Palms Canyon Rd.	3,591
Thousand Palms Canyon Road	Northbound, at Ramon Road	4,385
Varner Road	Northbound, at Rio Del Sol Road	4,197
Varner Road	Southbound, at Ramon Road	9,268
Varner Road	Westbound, at Jefferson Street	25,902
Washington Street	Northbound, at I-10	19,414
Washington Street	Northbound, at Wildcat Drive	14,799
Washington Street	Southbound at 38th Avenue	6,590

Source: Riverside County, 2020a.
Notes: Because baseline traffic counts were conducted during different years, an annual one percent growth rate was applied to present estimated 2022 ADT volumes.

Public Transportation

The SunLine Transit Agency provides public transportation services to Thousand Palms, with all routes primarily located south of I-10. The nearest bus routes to the proposed Project that utilize local study area roadways include (SunLine, 2020):

- Bus Line 32 travels east on Ramon Road between I-10 and Sierra Del Sol, then travelling south on Monterey Avenue.
- Bus Line 53 travels north on Cook Street, terminating at Xavier College Preparatory High School.

Pedestrian and Bicycle Facilities

While limited pedestrian movements occur within most residential streets, the proposed Project would traverse several key local roadways: Ramon Road, Monterey Avenue, Varner Road, Cook Street, and Washington Street, which may have existing sidewalks at locations crossed by the proposed Project. Based on a review of the Western Coachella Valley Area Plan, Washington Street is a designated Class I Bikeway (provides a completely separated right-of-way (ROW) for the exclusive use of bicycles and pedestrians with cross-flow minimized) (Riverside County, 2021).

3.13.2 Regulatory Framework

Federal

CFR, Title 49, Subtitle B. This regulation includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials program procedures) and provides safety measures for motor carriers and motor vehicles that operate on public highways.

State

California Department of Transportation (Caltrans)

California Vehicle Code (CVC). The CVC includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials.

California Department of Transportation (Caltrans) Local Development-Intergovernmental Review (LD-IGR). The Caltrans LD-IGR program uses the Transportation Impact Study Guide (TISG) during environmental review of land use projects and plans (Caltrans, 2020). The Caltrans LD-IGR program works with local jurisdictions early and throughout their land use planning and decision making processes, consistent with the requirements of CEQA and state planning law. Caltrans seeks to reduce single occupancy vehicle trips, provide a safe transportation system, reduce per capita VMT, increase accessibility to destinations via cycling, walking, carpooling, and transit, and reduce greenhouse gas (GHG) emissions. Those goals along with standard CEQA practice create the foundation of Caltrans review of proposed new land use projects.

The TISG replaces Caltrans' previous Traffic Impact Study Guidelines from 2002, which were based on vehicle delay and congestion. Based on the May 2020 TISG, for land use projects and plans, automobile delay is no longer considered a significant impact on the environment under CEQA per Senate Bill 743. Caltrans review of land use projects and plans is now based on a vehicle miles travelled (VMT) metric, consistent with changes to the CEQA Guidelines (California Code of Regulations Section 15064.3(b)(1)). This 2020 VMT-focused TISG provides a foundation for review of how lead agencies apply the VMT metric to CEQA project analysis. The analysis provided in Section 4.13 is consistent with Caltrans' 2020 TIGS.

Local

County of Riverside

Regional Comprehensive Plan and Regional Transportation Plan. Southern California Association of Governments' (SCAG) Intergovernmental Review section, part of the Environmental Planning Division of Planning and Policy, is responsible for performing consistency review of regionally significant local plans, projects, and programs. Regionally significant projects are required to be consistent with SCAG's adopted regional plans and policies, such as the Regional Comprehensive Plan and the Regional Transportation Plan. The criteria for projects of regional significance are outlined in CEQA Guidelines Sections 15125 and 15206. According to the SCAG Intergovernmental Review Procedures Handbook, "new or expanded electrical generating facilities and transmission lines" qualify as regionally significant projects.

Riverside County General Plan – Circulation Element. The Riverside County General Plan Circulation Element contains the following policies applicable to the proposed Projects (Riverside County, 2020b):

- **Policy C2.3**: Traffic studies prepared for development entitlements (tracts, plot plans, public use permits, conditional use permits, etc.) shall identify project related traffic impacts and determine the "significance" of such impacts in compliance with CEQA and the Riverside County Congestion Management Program Requirements.
- **Policy C3.8**: Restrict heavy duty truck through-traffic in residential and community center areas and plan land uses so that trucks do not need to traverse these areas.
- **Policy C6.2**: Require all-weather access to all new development.

Riverside County Municipal Code Title 10, Chapter 10.08, Sections 10.08.010–10.08.180. These regulations establish requirements and permits for oversize and overweight vehicles.

Riverside County Ordinance No. 499. Ordinance No. 499 gives the Riverside County Transportation Department the authority to require that permits be obtained for any type of work conducted within a County Road ROW, which in many cases extends beyond the paved road to the adjacent private property boundary. This requirement extends to excavation, placement of structures, and any other work within a County ROW (Riverside County, 2015).

Consistency

Table 3.13-3 provides a list of county plans and policies that are applicable to transportation and traffic and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.13-3. Consistency with Applicable Plans and Policies – Transportation

Plan/Policy	Consistency	Explanation
Riverside County General Plan Circulation Element - Policy C2.3: Traffic studies prepared for development entitlements (tracts, plot plans, public use permits, conditional use permits, etc.) shall identify project related traffic impacts and determine the "significance" of such impacts in compliance with CEQA and the Riverside County Congestion Management Program Requirements.	Yes	Section 4.13 provides a detailed analysis to determine potential impacts of the proposed Project on the affected circulation system.
Riverside County General Plan Circulation Element - Policy C3.8: Restrict heavy duty truck through-traffic in residential and community center areas and plan land uses so that trucks do not need to traverse these areas.	Yes	Proposed Mitigation Measure TR-1 and EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage), as presented in Section 4.13, would ensure that heavy duty truck traffic associated with the Project would avoid residential and community center areas to the greatest extent feasible.
Riverside County General Plan Circulation Element - Policy C6.2: Require all-weather access to all new development.	Yes	Design of the Project includes all weather access to the proposed facilities.
Riverside County Ordinance No. 499: Obtain permits for any type of work conducted within a county road right-of-way.	Yes	All required encroachment or other roadway-related permits would be obtained to support construction of the Project.

3.14 Water Resources

This section describes the existing environmental conditions in the Project area relevant to water resources, including surface water, groundwater, and water supply.

3.14.1 Environmental Baseline

The proposed flood control improvements are located within the Whitewater Hydrologic Unit, under the jurisdiction of the Colorado River Basin Regional Water Quality Control Board (RWQCB), and subject to management direction of the Water Quality Control Plan (Basin Plan) for the Colorado River Region. This section describes the environmental baseline conditions relevant to water resources, including surface water and associated flooding conditions, groundwater, and water supply.

3.14.1.1 Regional Setting

As discussed in Section 2 (Project Description), the proposed Project is located in the Thousand Palms area of the Coachella Valley in Riverside County, California. The proposed Project is located near the center of the valley and in an area characterized by extreme heat and dryness. Annual rainfall averages only four inches but varies greatly from year to year. The area also includes several desert fan palm oases, which are sustained by groundwater welling up along fault fractures (USACE, 2000).

Surface Water

During most of the year, there is little or no surface water flow in the Study Area, largely due to extremely limited rainfall. During large storm events, flash floods with sharp peaks and short durations are common. Most of these flows eventually percolate into the ground on alluvial fans and along mainstream channels.

Surface water bodies in the Study Area are limited to the springs associated with the fan palm oases distributed among the Indio Hills. These springs are formed from groundwater which wells up to the surface along fault lines. Small ponds and marsh areas can be found within the larger of these oases. Fan palm oases within the Study Area include Willis Palms, Hidden Palms, and a portion of Thousand Palms Oasis. Pushawalla Palms, Macomber Palms, and Biskra Palms are located along the edges of the Study Area (USACE, 2000).

The Study Area receives runoff from six distinct watersheds (hydrologic subunits), which drain a total area of 421 square miles (USACE, 1997). Following is a summary list of the six watersheds relevant to the Study Area.

Surface Water Features

Morongo Wash. This watershed, located at the western edge of the Study Area, drains an area of approximately 157.8 square miles north of I-10 (USACE, 1997). During normal storm events/conditions, water from the Morongo Wash watershed discharges through three highway bridges at I-10 to the mid-valley area and/or to Whitewater River.

Long Canyon/Willow Hole. This basin is located in the western part of the Study Area and drains an area of approximately 51 square miles (USACE, 1997). The Long Canyon stream system has its headwaters in the Little San Bernardino Mountains and discharges onto an alluvial fan in western Sky Valley. On the alluvial fan, these streams are joined by flows diverted from East-West Wide Canyons and exits Sky Valley at Willow Hole into the Edom Hill area.

East and West Wide Canyons. This watershed is approximately 31.5 square miles in size and drains a portion of the Little San Bernardino Mountains (USACE, 1997). The streams are intercepted at the canyon mouth by Wide Canyon Dam and diverted to the Willow Hole area.

Thousand Palms Canyon. This watershed encompasses about 81.5 square miles of both mountain and valley areas (USACE, 1997). The stream system originates in the Little San Bernardino Mountains, branches through eastern Sky Valley, enters the Indio Hills, and emerges into the Coachella Valley through Thousand Palms Canyon.

Pushawalla Canyon. This watershed is 35.5 square miles in size and originates in the Little San Bernardino Mountains (USACE, 1997). Streams flow in a southerly direction across Sky Valley and pass through the Indio Hills via Pushawalla Canyon, generally parallel to Thousand Palms Canyon.

Indio Hills/Coachella Valley. This watershed is approximately 63.5 square miles in size and is generally bounded by the Indio Hills on the north, I-10 on the south, Flat Top Mountain on the west, and Whitewater River on the east (USACE, 1997). Flood waters from all of the watersheds described above drain into this area. All of these flows ultimately discharge eastward to the Whitewater River.

Whitewater River. The Whitewater River is the main drainage course in the Coachella Valley, where it flows in the Whitewater River Stormwater Channel north and northwest of Washington Street (the downstream end of the proposed Project's Reach 4), and in the Coachella Valley Stormwater Channel to the south and southeast of Washington Street. Collectively this drainage system is referred to as the Whitewater River and Coachella Valley Stormwater Channel. This drainage system originates on the southerly slopes of the San Bernardino Mountains and flows in a southeasterly direction through the Coachella Valley and terminates at the Salton Sea.

The Whitewater River is not listed on the 2006 Clean Water Act section 303(d) List of Water Quality Limited Segments (Colorado River Basin RWQCB, 2006a). The Coachella Valley Stormwater Channel, which conveys the flows of the Whitewater River through the community, is on the 2006 section 303 (d) list where it conveys wastewater discharge. The federal Clean Water Act requires all states to identify waters (stream/river segments, lakes) where required pollution controls are not sufficient to attain or maintain applicable water quality standards and establish priorities for development of Total Maximum Daily Loads (TMDLs) based on the severity of the pollution and the sensitivity of the uses to be made of the waters, among other factors (USEPA, 2015). Water bodies may be removed from the 303(d) List after they have developed a TMDL or after other changes to correct water quality problems have been made (USEPA, 2015). The Clean Water Act is further discussed in Section 6 (Compliance with Environmental Requirements). The fact that Whitewater River is not on the current 303(d) List maintained by the Colorado River Basin RWQCB indicates that the river is not affected by water quality problems which require the development of TMDLs.

Designated Beneficial Uses for Whitewater River, as described in the Basin Plan, include the following: MUN (Municipal and Domestic Supply), AGR (Agricultural Supply), GWR (Groundwater Recharge), REC-I (Contact Water Recreation), REC-II (Non-Contact Water Recreation), WARM (Warm Freshwater Habitat), and WILD (Wildlife Habitat) (Colorado River Basin RWQCB, 2006b).

Waters of the United States and State Jurisdictional Waters. A delineation of potentially jurisdictional waters and wetlands was conducted in March 2019, using pre-2015 rules and guidance regarding geographic jurisdiction (33 CFR 328.3 [1986] as informed by the 2003 SWANCC and 2008 Rapanos Guidance documents). The Project Area was evaluated for the presence of federal non-wetland waters, federal wetland waters, Waters of the State, and CDFW jurisdictional waters. See the *Preliminary*

Jurisdictional Waters/Wetlands Delineation Report (Appendix D) for a detailed description of delineation methodology and results.

All the potentially jurisdictional features mapped within the Project Area are characterized as ephemeral desert dry washes. These include non-wetland waters of the United States, State waters, and CDFW jurisdictional waters. In total there are approximately 19.88 acres (21,568 linear feet) of CDFW jurisdictional waters and 15.12 acres (20,398 linear feet) of Waters of the U.S. and State waters within the Project Area (see Figure 3.6-11, Federal and State Jurisdictional Waters, and Table 3.6-7).

Flood History

Average annual precipitation is generally low in the Coachella Valley, but intense storms frequently produce precipitation in a single month which exceeds the normal annual value, and sometimes average annual precipitation is exceeded by more than 100 percent by a single summer thunderstorm. These episodes of intense rainfall, combined with the steep terrain of the surrounding mountains and relatively little vegetation to impede runoff, have historically caused flash floods along the water courses and alluvial fans of the Whitewater River basin.

Historical references to flooding in the Coachella Valley go back as far as 1825 and indicate the occurrence of a number of large winter floods throughout the 19th century, with moderate to large winter floods occurring in 1909, 1927, 1938, 1940, 1943, 1965, 1969, 1978, 1980, 1983, and 1993. In addition, numerous local thunderstorms have caused flooding in the Valley, although these storms typically affect a very limited area. Because of their localized nature and short duration, information on thunderstorm occurrences in the region is incomplete; however, flash flooding from these storms represents the greatest flood hazard to properties in the region.

Due to expanding development throughout the Coachella Valley over the past decade, a larger population of residents is now subject to public safety issues associated with flood hazards increasing the need for flood control and flood hazard protection in the Project area. The portion of the valley north of I-10 is designated as a Special Flood Hazard Area by the Federal Emergency Management Agency (FEMA), indicating that the area would be inundated during the 100-year storm event.

In addition, south of the proposed Project footprint, I-10 acts as a partial barrier to flood flows emanating from the Indio Hills. As a result, interior drainage problems can occur in the southeastern corner of the Thousand Palms area, adjacent to the Coachella Valley Preserve. Flooding can be a problem in this area and along the northern side of I-10, as far north as the Long Canyon drainage.

FEMA publishes Flood Insurance Rate Maps (FIRMs) to identify areas subject to flooding during different flood events, such as 100-year floods. A 100-year flood has a 1/100 or one percent chance of occurring in any given year. The practice is to avoid or restrict construction within the 100-year flood zones, or to engage in flood proofing techniques such as elevating building pads or by constructing flood walls and levees.

3.14.1.2 Groundwater

The Project area is underlain by the Coachella Valley Groundwater Basin, which is generally bounded on the north and east by the San Bernardino and Little San Bernardino Mountains and on the south and west by the Santa Rosa and San Jacinto Mountains. There is some flow of groundwater throughout the basin; however, movement of water between sub-basins is limited by fault barriers, basin constrictions, and areas of low permeability. Depth to groundwater varies across the basin, with the depth of domestic, municipal, and irrigation wells ranging from 47 to 1,420 feet (DWR, 2004). Surface runoff and subsurface

inflow are significant sources of recharge to local groundwater (DWR, 2004). Following are summary descriptions of the four sub-basins that make up the Coachella Valley Groundwater Basin.

Mission Creek Subbasin. This subbasin is approximately 76 square miles in size and underlies the north-western portion of the Coachella Valley, north of the proposed Project site. This sub-basin is bounded on the north and east by the Mission Creek Fault (North Branch San Andreas Fault) and on the south by the Banning Fault (South Branch San Andreas Fault), with the San Bernardino Mountains to the west. Both the Mission Creek Fault and the Banning Fault are barriers to groundwater movement. Water level differences across the Banning Fault, between the Mission Creek Subbasin and Garnet Hill Subarea, are approximately 200 to 250 feet (CVWD, 2012).

Whitewater River (Indio) Subbasin. This sub-basin is approximately 525 square miles in size and encompasses a major portion of the Coachella Valley floor. The proposed flood control facilities are located within the Thousand Palms Sub-area of the Whitewater River Subbasin. This sub-area is peripheral, with unconfined groundwater conditions. Unlike the other aquifers in the Whitewater River Subbasin, which have a calcium bicarbonate chemical characteristic, groundwater in the Thousand Palms sub-area is sodium sulfate in character. The chemical differences suggest that recharge to the Thousand Palms sub-area comes primarily from the Indio Hills and is limited in supply. The Whitewater River Subbasin includes five Subareas: Palm Springs, Garnet Hill, Thermal, Thousand Palms, and Oasis Subareas. (CVWD, 2012). This subbasin is drained by the Whitewater River and its tributaries. The Whitewater River rarely flows throughout the year and flow in its tributaries is intermittent.

San Gorgonio Pass Subbasin. This sub-basin is located northeast of the Garnet Hill Fault and the Whitewater River Subbasin. It is considered a distinct sub-basin because the Banning and Garnet Hill Faults are effective barriers to groundwater movement. The main source of recharge to the sub-basin is the Whitewater River through the permeable deposits which underlie Whitewater Hill (CVWD, 2012).

Desert Hot Springs Subbasin. This sub-basin is located in the alluvial fan area between the Little San Bernardino Mountains and the Indio Hills. The San Andreas and Mission Creek Faults form the south-westerly boundary of the sub-basin. This subarea is not extensively developed except in the Desert Hot Springs area (CVWD, 2012).

Designated Beneficial Uses of groundwater within the Whitewater Hydrologic Unit include: MUN (Municipal and Domestic Supply), IND (Industrial Supply), and AGR (Agricultural Supply) (Colorado River Basin RWQCB, 2006b).

3.14.1.3 Water Supply

The Coachella Valley Water District (CVWD) provides water-related services for most of the Coachella Valley, including the Thousand Palms area. The CVWD's sources of water supply include local groundwater, Colorado River water, and the State Water Project. Water from the Colorado River is delivered to the Coachella Valley by the Coachella Canal, which is a branch of the All-American Canal. The Coachella Canal is 122 miles long and branches out from the All-American Canal 37 miles downstream from the All-American Canal's origin at Imperial Dam on the Colorado River. Lake Cahuilla is the terminal reservoir for the Coachella Canal and provides storage for a reserve supply of water. In addition, the CVWD exchanges its allocation of water from the State Water Project with the Metropolitan Water District (MWD) for water from the Colorado River. The water exchanged with MWD is delivered from MWD's Colorado River Aqueduct, which crosses the Coachella Valley (USACE, 2000).

3.14.2 Regulatory Framework

3.14.2.1 Federal

The National Flood Insurance Act of 1968, as amended, and The Flood Disaster Protection Act of 1973, as amended, 42 U.S.C. 4001 et. seq

The purpose of these Acts is to "substantially increase the limits of coverage authorized under the National Flood Insurance Program; to provide for the expeditious identification of, and the dissemination of information concerning, flood-prone areas; to require states or local communities, as a condition of future federal financial assistance, to participate in the flood insurance program and to adopt adequate flood plain ordinances with effective enforcement provisions consistent with federal standards to reduce or avoid future flood losses; and to require the purchase of flood insurance by property owners who are being assisted by federal programs or by federally supervised, regulated, or insured agencies or institutions in the acquisition or improvement of land or facilities located or to be located in identified areas having special flood hazards."

The National Flood Insurance Act of 1968 implemented the National Flood Insurance Program (NFIP), and The Flood Disaster Protection Act of 1973 made the purchase of flood insurance mandatory for property owners within a Special Flood Hazard Area (SFHA).

Since the passage of the 1968 and 1973 acts, several laws have been passed that have revised or amended the NFIP. These laws include:

- The National Flood Insurance Act of 1994 – strengthened mandatory purchase requirements, created mitigation insurance, and developed a mitigation assistance program.
- The Flood Insurance Reform Act of 2004 – focused on reducing losses to properties for which repetitive flood insurance claim payments have been made.
- The Biggert-Waters Flood Insurance Reform Act of 2012 – authorized and funded the national mapping program and implemented NFIP rate increases by removing subsidies.
- The Consolidated Appropriations Act of 2014 – prohibited implementation of certain rate increases under the Biggert-Waters Act.
- Homeowner Flood Insurance Affordability Act of 2014 – repealed portions of the Biggert-Waters Act, restored grandfathering, put limits on certain rate increases, and applied an annual surcharge to all policyholders to ensure the financial health of the NFIP.

44 CFR §65.10 – Mapping of areas protected by levee systems

This section of the National Flood Insurance Act describes the type of information FEMA needs to recognize, on NFIP maps, for a levee system to provide protection from base flood levels. For levees to be recognized by FEMA, evidence must be provided demonstrating that adequate design and O&M systems are in place to provide reasonable assurance that protection from the base flood exists. Design criteria include requirements for freeboard, closures, embankment protection, embankment and foundation stability, settlement, interior drainage, and other design criteria. Operation plans and criteria include requirements for closures, interior drainage systems, and other operation plans and criteria. This section also includes requirements for maintenance plans and criteria and certification requirements.

Executive Orders 11988 and 13690

Executive Order 11988 requires a federal agency, when taking an action, to avoid short- and long-term adverse effects associated with the occupancy and the modification of a floodplain, and to avoid direct and indirect support of floodplain development whenever there is a reasonable and feasible alternative. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains in carrying out its responsibilities." Executive Order 13690 revises Executive Order 11988 and includes more protective standards for floodplain protection. Although the proposed Project is not a federally owned or operated levee, these executive orders would apply because the issuance of a Clean Water Act (CWA) Section 404 permit by the USACE would be required and would qualify as a federal action under these orders.

Executive Order 11990, Protection of Wetlands

Executive Order 11990 requires federal governmental agencies, in carrying out their duties, to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands.

Executive Order 11988, Floodplain Management

Executive Order 11988 requires that governmental agencies, in carrying out their responsibilities, provide leadership and take action to restore and preserve the natural and beneficial values served by floodplains.

Clean Water Act (CWA)

The CWA (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States (U.S.) and has given the United States Environmental Protection Agency (USEPA) the authority to implement pollution control programs. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine RWQCBs. The proposed Project is within the Colorado River Basin RWQCB jurisdiction (Region 7).

Section 402 of the CWA authorizes the State Water Resources Control Board (SWRCB) to issue NPDES Stormwater General Construction Permit (Water Quality Order 99 08 DWQ), referred to as the "General Construction Permit." Construction activities can comply with and be covered under the General Construction Permit if they meet the following requirements:

1) *Develop and implement a Stormwater Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters.*
2) *Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.*
3) *Perform inspections of all BMPs.*

Projects that disturb one or more acres are required to obtain NPDES coverage under the Construction General Permits.

Section 401 of the CWA, as implemented in California, requires that any activity involving placement of dredged or fill material into waters of the U.S. that are subject to a Section 404 permit must be certified by the RWQCB to ensure that the proposed activity does not violate State and/or federal water quality standards.

Section 404 of the CWA requires a permit for activities involving placement of dredged or fill material into waters of the U.S., including wetlands. Non-tidal aquatic resources subject to Section 404 permitting may include rivers, streams, lakes, and wetlands. When an application for a Section 404 permit is made the Applicant must show it has:

1) Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable;
2) Minimized unavoidable impacts on waters of the U.S. and wetlands; and
3) Provided mitigation for unavoidable impacts.

Section 303(d) of the CWA (CWA, 33 USC 1250, et seq., at 1313(d)) requires states to identify "impaired" waterbodies as those which do not meet water quality standards. States are required to compile this information in a list and submit the list to the USEPA for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, states are required to prioritize waters and watersheds for future development of TMDL requirements. The SWRCB and RWQCBs have ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to develop TMDL requirements.

3.14.2.2 State

Porter-Cologne Water Quality Control Act

The SWRCB regulates water quality through the Porter-Cologne Water Quality Act of 1969, which contains a complete framework for the regulation of waste discharges to both surface waters and groundwater of the State. On the regional level, the proposed Project falls under the jurisdiction of the Colorado River Basin RWQCB, which is responsible for the implementation of State and federal water quality protection statutes, regulations, and guidelines. The Colorado River Basin Region has developed a Water Quality Control Plan (Basin Plan) to show how the quality of the surface and groundwaters should be managed to protect beneficial uses. The Basin Plan lists the various beneficial uses of water within the region, describes the water quality which must be maintained to allow those uses, describes the programs, projects, and other actions which are necessary to achieve the standards established in this plan, and summarizes plans and policies to protect water quality (Colorado River Basin RWQCB, 2006b).

California Fish and Game Code

Section 1602 of the California Fish and Game Code protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the California Department of Fish and Wildlife (CDFW) in which there is, at any time, any existing fish or wildlife resources, or benefit for the resources. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State, and requires any person, State, or local governmental agency, or public utility to notify the CDFW before beginning any activity that will:

- 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 or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

If it is determined that any Project-related actions would have the potential to necessitate a Lake or Streambed Alteration Agreement, then such an agreement would be prepared and implemented prior to construction to maintain compliance with Section 1602 of the California Fish and Game Code. A Lake and Streambed Alteration Agreement is required if the CDFW determines the activity could substantially adversely affect an existing fish and wildlife resource. The agreement includes measures to protect fish and wildlife resources while conducting the project. The CDFW must comply with CEQA before it may issue a final Lake or Streambed Alteration Agreement; therefore, the CDFW must wait for the lead agency to fully comply with CEQA before it may sign the draft Lake or Streambed Alteration Agreement, thereby making it final.

California Water Code Section 13260

California Water Code Section 13260 requires that any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the State, other than into a community sewer system, must submit a report of waste discharge to the applicable RWQCB. Any actions related to the Project that would be applicable to California Water Code Section 13260 would be reported to the Colorado River RWQCB.

3.14.2.3 Local

Riverside County General Plan, Multipurpose Open Space Element

The Multipurpose Open Space Element of the Riverside County General Plan includes policies which address protecting and preserving natural resources, agriculture, and open space areas, managing mineral resources, preserving, and enhancing cultural resources, and providing recreational opportunities through-out the county (Riverside County, 2015). Policies are categorized into those that seek to conserve, or manage the use of resources, and those that seek to preserve resources for the purpose of sustaining their stocks in perpetuity. Policies relevant to water resources and this Project are listed below.

- **Policy OS 3.3** Minimize pollutant discharge into storm drainage systems and natural drainage and aquifers.
- **Policy OS 5.1** Substantially alter floodways or implement other channelization only as a "last resort," and limit the alteration to:
  a) That necessary for the protection of public health and safety only after all other options are exhausted;
  b) Essential public service projects where no other feasible construction method or alternative project location exists; or
  c) Projects where the primary function is improvement of fish and wildlife habitat.
- **Policy OS 5.2** If substantial modification to a floodway is proposed, design it to reduce adverse environmental effects to the maximum extent feasible, considering the following factors:
  a) Stream scour;
  b) Erosion protection and sedimentation;
  c) Wildlife habitat and linkages;
  d) Groundwater recharge capability;
  e) Adjacent property; and
  f) Design (a natural effect, examples could include soft riparian bottoms and gentle bank slopes, wide and shallow floodways, minimization of visible use of concrete, and landscaping with native plants to the maximum extent possible). A site-specific hydrologic study may be required.

Riverside County General Plan, Safety Element

The Safety Element of the Riverside County General Plan includes policies which address seismic hazards, slope and soil instability, flood and inundation hazards, fire hazards, hazardous waste, and disaster preparedness (Riverside County, 2021a). Policies relevant to water resources and this Project are listed below.

- **Policy S 1.1** Mitigate hazard impacts through adoption and strict enforcement of current building codes, which will be amended as necessary when local deficiencies are identified.
- **Policy S 3.1** All residential, commercial, and industrial structures should be flood-proofed, to the maximum extent possible and as required by law, from the mapped 100-year storm flow, or to an appropriate level determined by site-specific hydrological studies for areas not mapped by the Federal Emergency Management Agency. This may require that the finished floor elevation be constructed at such a height as to meet this requirement. Nonresidential (commercial or industrial) structures may be allowed with a "flood-proofed" finished floor below the Base Flood Elevation (i.e., 100- year flood surface) to the extent permitted by state, federal, and local regulations. New critical facilities should be constructed above-grade to the satisfaction of the Building Official, based on federal, state, or other reliable hydrologic studies. Residential commercial, and industrial structures shall meet these standards as a condition of approval.
- **Policy S 3.3** Prohibit alteration of floodways and channelization unless alternative methods of flood control are not technically feasible or unless alternative methods are utilized to the maximum extent practicable. The intent is to balance the need for protection with prudent land use solutions, recreation needs, and habitat requirements, and as applicable to provide incentives for natural watercourse preservation, including density transfer programs as may be adopted.
  a) Prohibit the construction, location, or substantial improvement of structures in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.
  b) Prohibit the filling or grading of land for nonagricultural purposes and for non-authorized flood control purposes in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.
- **Policy S 3.4** Prohibit substantial modification to watercourses, unless the modification does not adversely affect adjacent wetlands or riparian habitat or become detrimental to adjacent property as a result of increased erosion, sedimentation, or water velocity. Substantial modifications to watercourses shall be done in the least environmentally damaging manner practicable and shall restore natural conditions to the greatest extent possible, to maintain adequate wildlife corridors and linkages and maximize groundwater recharge.
- **Policy S 3.5** Development within the floodway fringe should only be allowed if the proposed structures can be adequately flood-proofed and will not contribute to property damage or risks to public safety, as required by law. Such developments shall be required to be capable of withstanding flooding and minimize the use of fill. Compatible uses shall not, however, obstruct flows or adversely affect upstream or downstream properties with increased velocities, erosion backwater effects, or concentrations of flows.
- **Policy S 3.6** All projects in unincorporated Riverside County should address and mitigate where applicable, adverse impacts to the carrying capacity of local and regional storm drain systems.

Riverside County Ordinance No. 458 (as amended)

Riverside County adopted Ordinance No. 458 in accordance with the requirements of the NFIP. The ordinance regulates development within flood hazard areas. The ordinance prohibits construction in flood hazard areas unless it can be demonstrated that the construction will not increase flood levels. Specific construction standards are set forth in the ordinance which are intended to make building sites safe from flooding and to minimize flood damage to structures.

Western Coachella Valley Area Plan (County of Riverside General Plan)

The Western Coachella Valley Area Plan (WCVAP) contains policies that guide the physical development and land uses in the unincorporated western portion of the Coachella Valley (Riverside County, 2021b). This plan is not a stand-alone document, but rather an extension of the County of Riverside General Plan General Plan. The following policies relevant to water resources and the Project provide additional direction for relevant issues specific to the Western Coachella Valley.

- **WCVAP 9.1** Notwithstanding the mapped Area Plan designation of Rural Residential in this area, any proposal to amend the Area Plan designation of lands that will be removed from the 100-year flood plain as a result of the construction of the planned levee system from the Rural foundation component to either the Community Development or Rural Community foundation component shall be exempt from the eight-year limit and other procedural requirements applicable to Foundation Component amendments, as described in the Administration Element. Such amendments shall be deemed Entitlement/Policy amendments and be subject to the procedural requirements applicable to that category of amendments.
- **WCVAP 23.1** Adhere to the flood proofing, flood protection requirements, and Flood Management Review requirements of Riverside County Ordinance No. 458 Regulating Flood Hazard Areas.
- **WCVAP 23.2** 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 or the Riverside County Flood Control and Water Conservation District for review.
- **WCVAP 23.3** Create flood control projects that maximize multi-recreational use and water recharge when possible.
- **WCVAP 23.4** 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.

Consistency

Table 3.14-1 provides a list of county plans and policies that are applicable to Water Resources and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.14-1. Consistency with Applicable Plans and Policies – Water Resources

Plan/Policy	Consistency	Explanation
Riverside County General Plan Open Space Element – Policy OS 3.3: Minimize pollutant discharges.	Yes	Implementation of Mitigation Measures and compliance with permitting requirements will minimize pollutant discharges to the maximum level feasible.
Riverside County General Plan Open Space Element – Policy OS 5.1: Substantially alter floodways only for the protection of public health, public service projects, or improvement of habitat.	Yes	The proposed Project will alter floodways for the protection of public health, and the improvement of habitat.

Table 3.14-1. Consistency with Applicable Plans and Policies – Water Resources

Plan/Policy	Consistency	Explanation
Riverside County General Plan Open Space Element – Policy OS 5.2: Design flow modifications to reduce adverse environmental effects.	Yes	Implementation of mitigation measures and compliance with permitting requirements will minimize adverse environmental effects.
Riverside County General Plan Safety Element – Policy S 1.1: Mitigate hazard impacts through enforcement of building codes	Yes	All project features will be designed in compliance with applicable building codes as part of the permit process.
Riverside County General Plan Safety Element – Policy S 3.1: All structures should be flood proofed from the 100-year flood event	Yes	All project features will be designed in compliance with applicable building codes as part of the permit process.
Riverside County General Plan Safety Element – Policy S-3.3: Floodway and Channelization.	Yes	The proposed Project is an authorized flood control project.
Riverside County General Plan Safety Element – Policy S-3.4: Substantial Modification to Water Courses and Maximize groundwater recharge	Yes	The proposed Project would reduce erosion and sedimentation, as well as benefit adjacent property through flood protection. The proposed Project will be constructed to maximize groundwater recharge.
Riverside County General Plan Safety Element – Policy S-3.5: Floodway fringe developments should be flood proof	Yes	The proposed Project will be flood-proofed and provide flood protection for surrounding areas. The proposed Project will be capable of withstanding flooding.
Riverside County General Plan Safety Element – Policy S-3.6: Mitigate adverse impacts on drain systems	Yes	Implementation of Mitigation Measures and compliance with permitting requirements will minimize impacts on drain systems.

3.15 Tribal Cultural Resources

This section provides information on existing, Tribal cultural resources in the vicinity of the Thousand Palms Flood Control Project (Project) and alternatives. This Project area is defined as Reaches 1 through 4, including levees, channels, and energy dissipating structures as described in Section 2.2.1 (Project Elements), as well as a one-mile buffer surrounding these components for the purposes of baseline data. The primary focus is on the Tribal cultural resources present, and those that could potentially be encountered within Reaches 1 through 4 of the Project.

Tribal cultural resources (TCR) are a newly defined class of resources under Assembly Bill 52 (AB 52). TCRs include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. To qualify as a TCR, the resource must either: 1) be listed on, or be eligible for listing on, the California Register of Historical Resources or other local historic register; or 2) constitute a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC § 21074). AB 52 establishes that California Native American tribes that are traditionally and culturally affiliated with a geographic area can provide expert knowledge of TCRs. The information about TCRs provided in this section was gathered during AB 52 government-to-government tribal consultation between CVWD and consulting tribes. These tribes included the Agua Caliente Band of Cahuilla Indians and Twenty-Nine Palms Band of Mission Indians.

3.15.1 Environmental Baseline

This section describes the prehistoric and ethnographic cultural setting of the Project area in order to better understand the nature and significance of Tribal cultural resources identified within the Coachella Valley region. The availability of water and biological (plant and animal) food resources, as well as topography and climate patterns throughout time have influenced the nature and distribution of human activities in the region. A brief discussion of the environmental setting is included in order to foster a more meaningful discussion about the cultural setting of the Project area.

3.15.1.1 Regional Cultural Resources Setting and Background

The Project area is situated east of the Peninsular Ranges in the northern portion of the Coachella Valley, which is bordered to the southwest by the San Jacinto and Santa Rosa mountains and to the northeast by the low, rolling Indio Hills and Mecca Hills. From the steep slopes of the San Jacinto mountains, surmounted by San Jacinto Peak (3,274 meters [10,804 feet] above mean sea level (amsl)), the desert floor descends sharply eastward in less than three kilometers (km) (two miles) to sea level. To the south, elevations gradually drop to 90 meters (300 feet) below mean sea level (bmsl) at the Salton Sea Basin. This basin has filled periodically throughout the Pleistocene and Holocene when the Colorado River shifted its course near its mouth at the Gulf of California, flowing north into the basin, forming a large freshwater lake commonly known as Lake Cahuilla (see below). A major water source flowing through the central valley is the Whitewater River, which, prior to the development of the Coachella Valley, drained the southern slope of the San Bernardino Mountains for thousands of years. Prior to the mid-1900s, the climate of the Project area was characterized by low relative humidity, very low precipitation, high summer temperatures of up to 52° Celsius (125° Fahrenheit), and mild winters. Three primary life zones that were exploited by prehistoric inhabitants of the Project area, known ethnographically to have occupied the Coachella Valley, include: Lower Sonoran (up to 1,067 meters elevation), Upper Sonoran (from 1,067 to 1,524 meters), and Transitional (1,524 to 2,134 meters). Important differences in the types of plant and food resources occur in each zone and are reflected in the locations and types of human activities throughout these diverse zones.

Human occupation of the Project area can be classified into three types of cultural resources: prehistoric, ethnographic, and historic period. Prehistoric archaeological resources are associated with the human occupation and use of California prior to European contact. In California, the prehistoric period began over 12,000 years ago and extended through the 18th century until around 1769, with the establishment of the first Spanish mission in San Diego. Ethnographic resources represent the heritage of a particular ethnic or cultural group, such as Native Americans or immigrant groups such as African, European, Latino, or Chinese. Historic period resources, both archaeological and architectural, are associated with non-Native American exploration and settlement of the area and the beginning of a written historical record after the arrival of European colonists. The following prehistoric, ethnographic, and historical background provides the context for the evaluation of the National Register of Historic Places (National Register or NRHP) and California Register of Historical Resources (California Register or CRHR) eligibility of any identified cultural resources within the Project study area.

Lake Cahuilla

The most important physiographic feature in the study of the prehistory of the Coachella Valley is Lake Cahuilla; the modern iteration of which is the Salton Sea. As a rare source of fresh water in the desert, human populations were attracted to live and gather plant and animal resources near the lake. This enormous lake periodically formed when flooding in the Colorado River broke through low-lying areas and flooded the Salton Trough, inundating up to an average elevation of about 40 feet amsl. Based on modern data regarding the flow of water in the lower Colorado River and Salton Trough rate of evaporation, a full cycle of inundation and desiccation would have taken about three-quarters of a century. This includes a minimum of about 18 years for the river to fill the basin and a minimum of 56 years for the lake to dry up after it was isolated from the Colorado River (Schaefer and Laylander, 2007). Early researchers thought Lake Cahuilla had been a single episode lake existing for at least five centuries, between 1000 and 500 years before present (BP) (Laylander, 2005). However, studies have indicated that there were repeated lake formations with at least four cycles since 1300 years BP and an unknown number prior to 2000 years BP (Waters, 1983). Laylander (1995) established the existence of a substantial stand for the lake in the 17th century AD. Radiocarbon dating, stratigraphic deposits, and observations over the last 150 years show that the rise and fall of the lake were cyclical events that occurred perhaps every 200 to 300 years. Human occupation sites mark the ancient shorelines both above the high stand mark and along the lower, retreating shorelines (Waters, 1983; Laylander, 2005).

The ancient shoreline of Lake Cahuilla nearly surrounds the Salton Trough. On the surface, the Salton Trough exhibits ancient lakebed sediments, alluvial channels, and dune sands. The central portion (Coachella and Imperial Valleys, Salton Sink) is covered by clay and silt deposits from the prehistoric lakestands. Shoreline deposits circumscribe the central lakebed deposits and consist mostly of unconsolidated sand and gravel, grading into silts and clays. During the Late Prehistoric period, Lake Cahuilla stretched from north of Indio to south of Mexicali (Laylander, 1995).

Prehistory

Human populations have occupied the Coachella Valley for at least 12,000 years. However, little is known about the prehistory of the region compared to other parts of California. In part, this is the result of fewer research projects and because of natural processes that have buried or eroded many sites. Human action through agricultural and other developments has also played a part in this destruction.

The cultural-historical chronology of the Colorado Desert can be divided into five cultural periods: San Dieguito (ca. 12,000–7000 BP); Pinto (ca. 7000–4000 BP); Amargosa (ca. 4000–1200 BP); and, the Late Prehistoric Period (ca. 1200–200 BP), which ended in the ethnographic period. Due to the nature and

temporal assignment of archaeological sites identified within a one-mile radius of the Project area, the prehistoric cultural setting discussed below begins at the Late Prehistoric period.

Late Prehistoric Period

The Late Prehistoric period in the Colorado Desert is marked by the introduction of new artifact types and technological innovations of the previous Amargosa Period of the Late Archaic and is defined as the Patayan Pattern. This period is characterized by the introduction of ceramics, including Tizon Brown Ware from the Peninsular Ranges, Colorado Buff Wares from the Colorado River region, and the Salton Buff Ware from the Lake Cahuilla shoreline. New projectile point types, including Desert Side-notched and Cottonwood Triangular points, signify the introduction of the bow and arrow hunting technology, marking a pre-ceramic phase of the expansion of the earlier Amargosa assemblages perhaps as early as 1500 BP. Techniques of floodplain horticultural practices were also introduced to the inhabitants along the Colorado River at the same time as ceramics. Additionally, burial practices changed from extended inhumations to cremated remains, sometimes buried in ceramic vessels. Typical of the Hohokam culture from southern Arizona, these traits were introduced to the Colorado River inhabitants and gradually spread west to the Peninsular Ranges and Coastal Plains of southern California.

The Patayan Pattern is typified by several differing settlement and subsistence systems. Along the Colorado River, dispersed seasonal settlements were composed of jacal (i.e., adobe style) structures, semi-subterranean pit houses, ramadas, or brush huts, depending on the season and types of settlement. Larger rancherias or villages would disperse to upper terraces of the Colorado River and to special collection areas during the summer months, coinciding with the flood phase of the river, and then return to the lower terraces for plant harvesting. At the eastern base of the Peninsular Ranges, the settlement pattern was typified by dispersed rancherias situated at the mouths of canyons supporting perennial streams, at the base of alluvial fans near springs, or down on the valley floor where a shallow water table allowed wells to be dug (e.g., at Indian Wells). In addition to these sites, specialized sites were located in all of the micro-environmental zones that were exploited seasonally. Archaeologically, these specialized sites can range in characteristics from bedrock milling features and pot-drops along trails, to chipping stations and quarries, to temporary camps containing bone, shell, ceramics, flaked and ground stone tools, and ornamental items such as beads and pendants, as well as other occupational debris.

Three phases of the Patayan Pattern are generally recognized in addition to the pre-ceramic phase. These phases are defined by changes in pottery frequencies and by the cultural and demographic effects of the infilling and subsequent desiccation of Lake Cahuilla. The Patayan I phase appears to have been confined to the Colorado River region and began approximately 1,200 years ago with the introduction of pottery; the artifact assemblage of this phase bears the closest similarity to that of the Hohokam. The Patayan II phase began about 950 years ago. Attracted to highly productive microenvironments along the Lake Cahuilla shoreline, people on both its eastern and western shores were producing pottery by the time the lake was fully formed. New ceramic types indicate that sedimentary, non-marine clays from the Peninsular Ranges were being utilized. The final Patayan III phase began approximately 500 years ago. This phase is characterized by new pottery types that reflect changes in settlement patterns, as well as with intensified communication between the Colorado River and Peninsular Ranges tribes as people living around the former Lake Cahuilla shoreline dispersed to their base territories, and the Imperial and Coachella valleys dried up, facilitating long distance travel. By approximately 250 years ago, with the final desiccation of Lake Cahuilla prior to the 20th century, the native inhabitants occupying its shores began moving westward into areas such as Anza-Borrego, Coyote Canyon, the Upper Coachella Valley, the Little San Bernardino Mountains, the San Jacinto Valley, and Perris Plain.

Ethnographic Period

The Patayan III phase continued into the ethnographic period, ending in the late 19th century when Euro-American intrusions disrupted the traditional culture. Although the Patayan III peoples include the Takic-speaking Cahuilla, who occupied the western Colorado Desert region, as well as the Quechan, Mojave, and Cocopa of the Colorado River region, the following discussion of the ethnographic setting focuses on the Cahuilla, as they are known to have occupied the Project region encompassed by the Coachella Valley.

Ethnographic History

At the time of European contact, the Coachella Valley and surrounding mountains were occupied by an ethnolinguistic group now referred to as the Cahuilla. The Cahuilla language belongs to the Takic branch of the Shoshonean family, part of the larger Uto-Aztecan language stock. The Cahuilla are generally divided by anthropologists into subgroups defined by the topographical settings in which they lived: Pass, Mountain, and Desert. The Coachella Valley was within the area occupied by the Desert Cahuilla, although the Pass Cahuilla, primarily living in the San Gorgonio Pass, likely used parts of the northwestern valley.

The Cahuilla people were, for the most part, hunting, collecting, harvesting, and protoagricultural peoples. They were noted by the early Spanish missionaries for already having developed agricultural practices for species of native corn, beans, and squash. These agricultural practices reflect methods used by other groups from the American Southwest. As in most of California, acorns were a major staple, but the roots, leaves, seeds, and fruit of many other plants also were used. Sources of protein were generally fish, birds, insects, and mammals. The mammals included rabbits and hares, mountain sheep, deer, and antelope.

Cahuilla society was not organized into territory-holding tribe or tribelet political groups, rather into clans of related lineages. These clans were the focus of political, social, and ceremonial activities. Clans owned a large territory that generally included valley, foothill, and mountain areas, providing them with the resources of many different ecological niches. Individual lineages or families owned specific resource areas within the clan territory, including a village site with specific resource areas and a ceremonial house. Clan lineages cooperated in defense, in large communal subsistence activities, and in performing rituals. Although any given village had access to a wide array of necessary resources, briskly flourishing systems of trade and exchange gave them access to the resources of their neighboring villages and of distant peoples.

European contact with the Cahuilla was first initiated by the Juan Bautista de Anza expedition, which passed through the region in 1774. Initially, the Indians were hostile to the Europeans. Subsequently, the Europeans used sea routes to populate California because the land route had been closed by the Quechan Indians in 1781. The Cahuilla, therefore, had little direct contact with Europeans. In 1819, several Mission outposts were established near the Cahuilla area; Cahuillas became partially involved with the Spanish and adopted some Spanish economic practices, such as cattle raising, trade, and wage labor, as well as cultural traits such as clothing styles, language, and religion. Some Cahuillas worked seasonally for the Spaniards, and lived for the remainder of the year in their villages. At the time of the American annexation of California, the Cahuilla still maintained their political and economic autonomy. The first official United States land survey in southern California in the mid-1850's noted eight Indian villages or rancherias within the Eastern Coachella Valley region, presumably occupied by the Desert Cahuilla people.

History

The history of the region is generally divided into the Spanish (1769-1821), Mexican (1821-1846), and American (post-1846) periods. The historic period began in the 1790s with Spanish and Mexican expeditions moving through the Coachella Valley, but little actual settlement began until the Southern Pacific

Railroad line was finished in 1876. With the coming of the railroad, non-native settlements began to flourish across the Coachella Valley as new federal laws, including the Homestead Act and Desert Land Act, opened up lands for new settlers. The discovery of underground water sources began to increase farming activities throughout the Valley in the early 20th century.

The community of Thousand Palms traces its roots back to the Southern Pacific Railroad depot at Edom, founded in 1876. A handful of homesteaders arrived in the area around 1904 and drilled water wells for their agricultural pursuits, which were primarily citrus and dates. Around the 1910s, the predecessor to U.S. Highway 60/70/99 was graded past Edom, providing a quicker route between Los Angeles, San Bernardino, and points east. The town soon prospered, and development expanded to both sides of the highway. A school was built, and after World War II, the community of Thousand Palms began to take shape, with restaurants, motels, service stations, and local produce shops emerging. The first subdivision development at Thousand Palms, known as Shangri La Palms, was built a short distance to the east of town around 1948. Interest in the area after World War II (WWII) resulted in the formation of numerous southern California desert communities, such as nearby Palm Desert, Rancho Mirage, and Borrego Springs, while the already formed communities of Desert Hot Springs, Palm Springs, and La Quinta experienced a boom in the desert resort and golf club development. As in other parts of the Coachella Valley after WWII, the warm, dry climate of the region during winter months lured people in from the colder northern states and Canada. Guest ranches and winter resorts were popular at that time and became ubiquitous in the northern Coachella Valley landscape.

In 1957, U.S. Highway 60/70/99 was rerouted a short distance to the south and became Interstate 10, while the old highway route became Varner Road. Businesses that had once depended on the highway traffic suffered a decline in sales and began to deteriorate. However, an emergence of light industry in Thousand Palms around that same time saved the community, although it continued to grow at a very slow pace in the decades to follow. In recent decades, development of the Thousand Palms area has moved westward toward Rio Del Sol Road.

3.15.1.2 Baseline Data Collection Methodology

This section provides a description of the methodology used to assess Tribal cultural resources in the study area. To assess the effect of a project on Tribal cultural resources, an agency defines an Area of Potential Effect (APE), which is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties or Tribal cultural resources. Section 3.15.2 below provides additional explanation of the regulatory framework. Information on Tribal cultural resources was gathered during tribal consultation that occurred between CVWD and tribal groups who expressed interest in consulting about the Project.

AB 52 Tribal Consultation

On October 4, 2016, the CVWD mailed formal AB 52 Project Notification letters to invite seven tribes to consult on the Project. These tribes had previously requested to be notified of projects occurring with their traditionally and culturally affiliated areas. These seven tribes included the:

- Agua Caliente Band of Cahuilla Indians;
- Augustine Band of Cahuilla Mission Indians;
- Cabazon Band of Mission Indians;
- Morongo Band of Mission Indians;
- Soboba Band of Luiseño Indians;

- Torres Martinez Desert Cahuilla Indians; and
- Twenty-Nine Palms Band of Mission Indians.

Of these tribes, the Agua Caliente Band of Cahuilla Indians and the Twenty-Nine Palms Band of Mission Indians, responded as discussed below.

Agua Caliente Band of Cahuilla Indians

The Agua Caliente Tribal Historic Preservation Office (THPO) replied to CVWD's invitation on October 11, 2016 and stated that the area was within the Tribe's Traditional Use Area. The THPO requested to be included in formal government-to-government consultation under AB 52. The THPO also requested copies of GIS shapefiles for the Project area. On November 1, 2016, the THPO sent a second letter to CVWD. In this letter the THPO determined that previous surveys had identified the presence of cultural resources in the area. The Agua Caliente Band of Cahuilla Indians thus requested:

> *The presence of an approved Native American Cultural Resource Monitor(s) during any ground disturbing activities (including archaeological testing and surveys). Should buried deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.*

A third letter was sent by the THPO on December 20, 2016 requesting to continue consultation. The THPO also stated that the tribe had no comments at that time, but desired to be kept informed of changes to the scope of the Project. The THPO requested to be sent a copy of the Draft Environmental Impact Report for review. Instructions and a Monitoring Request Form were provided to CVWD to facilitate tribal monitoring during construction.

Twenty-Nine Palms Band of Mission Indians

On October 7, 2016, the Twenty-Nine Palms Band of Mission Indians THPO responded to CVWD's invitation to consult. The THPO stated that no known archaeological, cultural sites, or tribal properties were in the Project area; however, the Project area is located within the Chemehuevi's Traditional Use Area. In addition, the THPO stated that the Project area is located approximately seven miles from a culturally sensitive area. The Tribe requested a copy of existing cultural resources reports related to the Project.

After reviewing cultural resources information provided by CVWD, the THPO responded on November 18, 2016 with a letter acknowledging that archaeological surveys of the Project area had not identified any cultural resources within the Project area. However, the THPO reiterated that the Project is within the Tribe's Traditional Use Area. The THPO expressed concern about inadvertent discoveries of sensitive cultural resources during Project construction. The Twenty-Nine Palms Band of Mission Indians therefore requested that "an approved Native American Monitor(s) be present during any ground disturbing activities during the project, especially in Reaches 1-3."

3.15.2 Regulatory Framework

Numerous laws, ordinances, regulations, and standards seek to protect and manage cultural resources and Tribal cultural resources. Due to the location of the Project on private land within California, and that the Project involves federal, State, and local funding, all laws and regulations were followed. The primary federal regulation governing significant cultural resources is the NHPA. State regulations include the

California Environmental Quality Act (CEQA) and Public Resources Code (PRC) Section 5097. Local regulations include the Riverside County General Plan.

Federal

Antiquities Act of 1906 (16 U.S.C. 431-433) authorizes the president to designate as national monuments historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on lands owned or controlled by the United States. The act allows the Secretaries of the Interior, Agriculture, and War (now Army) to issue permits for the examination of ruins, excavation of archaeological sites, and the gathering of objects of antiquity on lands under respective jurisdictions and identifies penalties for violations.

National Historic Preservation Act of 1966, as Amended (NHPA) (Public Law [PL] 89-665; 16 U.S.C. 470-1) requires each state to appoint a State Historic Preservation Officer (SHPO) and authorizes tribes to appoint Tribal Historic Preservation Officers (THPO) to direct and conduct a comprehensive state or reservation-wide survey of historic properties and maintain an inventory of such properties. This act also created the Advisory Council on Historic Preservation (ACHP), which provides both national oversight and dispute resolution. Further, the act established the NRHP and charged the National Park Service with maintaining the NRHP and promulgating various policies and guidelines for identifying, documenting, nominating, protecting, preserving, and restoring historic properties that may be eligible for the NRHP. This act also has particular provisions for assuring the confidentiality of sensitive cultural resources information.

Sections 106 and 110 of this act have specific bearing on federal agency historic preservation activities and the management of historic properties. Section 106 requires federal agencies to consider the effects of their undertakings on historic properties and to afford the ACHP a reasonable opportunity to comment on those undertakings. Under Section 106, an undertaking collectively refers to all projects, activities, or programs funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency, those carried out by federal financial assistance, and those requiring a federal permit, license, or approval.

Federal agencies must meet their Section 106 responsibilities as set forth in the regulations (36 CFR Part 800). Federal agencies must conduct the necessary studies and consultations to identify cultural resources that may be affected by an undertaking, evaluate cultural resources that may be affected to determine if they are eligible for the NRHP (that is, whether identified resources constitute historic properties), and assess whether such historic properties would be adversely affected. Historic properties are resources listed on or eligible for listing on the NRHP (36 CFR 800.16[l][1]). A property may be listed in the NRHP if it meets criteria provided in the NRHP regulations (36 CFR 60.4). Typically, such properties must also be 50 years or older (36 CFR 60.4[d]).

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, or association and:

- *That are associated with events that have made a significant contribution to the broad patterns of our history; or*
- *That are associated with the lives of persons significant in our past; or*
- *That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
- *That have yielded, or may be likely to yield, information important in prehistory or history.*

Some property types do not typically qualify for the NRHP; however, these properties may qualify if they fall into one or more of the following considerations (36 CFR 60.4):

- *A religious property deriving primary significance from architectural or artistic distinction or historical importance;*
- *A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event;*
- *A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with [the person's] productive life;*
- *A cemetery which derives its primary significance from graves of persons of transcendent importance from age, from distinctive design features, or from association with historic events;*
- *A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived;*
- *A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or*
- *A property achieving significance within the past 50 years if it is of exceptional importance.*

Section 106 defines an adverse effect as an effect that alters, directly or indirectly, the qualities that make a resource eligible for listing in the NRHP (36 CFR 800.5[a][1]). Consideration must be given to the property's location, design, setting, materials, workmanship, feeling, and association, to the extent that these qualities contribute to the integrity and significance of the resource. Adverse effects may be direct and reasonably foreseeable or may be more remote in time or distance (36 CFR 8010.5[a][1]).

The federal agency is required to consult with SHPO(s)/THPO(s); Indian tribes (federally recognized) and Native Hawaiian organizations; representatives of local governments; applicants for federal assistance, permits, licenses, and other approvals; and additional interested parties (e.g., the public). These parties may participate in the entire Section 106 process, including identifying historic properties, assessing adverse effects, and resolving adverse effects. The California SHPO and the ACHP strongly suggest that Indian tribes that are not federally recognized be consulted as "other interested parties" under 36 CFR Section 800.2(c)(5) or as members of the public 800.2(d).

Section 110 of the NHPA (16 U.S.C. 470h-2) generally provides that all federal agencies assume responsibility for the preservation and use of historic properties owned or controlled by such agencies. Under Section 110, federal agencies must establish a preservation program for the identification, evaluation, and nomination to the NRHP and for protection of historic properties. The act also includes particular provisions for assuring the confidentiality of sensitive cultural resources information.

Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm) protects archaeological resources on public and Indian lands and acknowledges that archaeological resources are an irreplaceable part of America's heritage. This act applies when a project may involve archaeological resources located on federal or tribal land. The act requires that a permit be obtained before excavation of an archaeological resource on such land can take place, and that artifacts recovered during excavation are curated at an appropriate facility. The act also provides for the notification of Indian tribes when sites of cultural or religious importance could be harmed. This act establishes civil and criminal penalties for the unpermitted excavation, removal, damage, alteration, or defacement of archaeological resources on public or Indian lands. The act also has particular provisions for assuring the confidentiality of sensitive cultural resources information for archaeological excavation (PL 96-95, 16 U.S.C. 470aa-mm et seq.).

Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-13) establishes requirements for the treatment of Native American human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony on federal and tribal land. The act defines the ownership of human remains and associated and unassociated funerary objects and objects of cultural patrimony, giving priority to lineal descendants and Indian tribes (43 CFR 10). In the event of an inadvertent discovery of remains or items, work shall stop in the immediate area and the inadvertent discovery be protected. The federal agency is required to notify and consult with tribes that are, or likely to be, culturally affiliated with the remains and/or associated funerary objects.

Upon a valid repatriation request, the federal agency is required to return any such items to the lineal descendant(s) or specific tribe with whom such items are associated. The act and its implementing regulations contain similar noticing, consulting, and repatriation provisions for planned archaeological excavations (25 U.S.C. 3002[3][c]; 43 CFR 10.3). The act also has particular provisions for assuring the confidentiality of sensitive cultural resources information.

Executive Order 13007 Indian Sacred Sites (1996) sets forth that in managing federal lands, executive branch agencies shall, to the extent practicable, permitted by law, and not inconsistent with essential agency functions, accommodate Indian religious practitioners' access to and ceremonial use of Indian sacred sites. Agencies are to avoid adversely affecting the physical integrity of these sites, maintain the confidentiality of such sites, and inform and consult on a government-to-government basis with tribes concerning any proposed actions or land management policies that may restrict future access to, or ceremonial use of, or adversely affect the physical integrity of sacred sites.

USACE Regulatory Program Regulations, under 33 CFR Part 325, establishes procedures for the processing of Clean Water Act Section 404 permits by USACE. Appendix C in this regulation provides procedures for the protection of historic properties within the context of the USACE's permitting program. As mentioned above, a Permit Area is defined for a permitting action and is used as a geographic basis for determining whether the issuance of a permit will adversely affect historic properties as defined under the NHPA.

State

California Environmental Quality Act (California Public Resources Code Section 21000 et seq.) (1970) establishes that historical and archaeological resources are afforded consideration and protection by the California Environmental Quality Act (CEQA) (14 CCR Section 21083.2, 14 CCR Section 15064). CEQA Guidelines define significant cultural resources under two regulatory designations: historical resources and unique archaeological resources.

A historical resource is a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR"; or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code"; or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record" (14 CCR Section 15064.5[a][3]).

Historical resources automatically listed in the California Register include California cultural resources listed in or formally determined eligible for the National Register and California Historical Landmarks list

from No. 770 onward (PRC 5024.1[d]). Locally listed resources are entitled to a presumption of significance unless a preponderance of evidence in the record indicates otherwise.

Under CEQA, a resource is generally considered historically significant if it meets the criteria for listing in the CRHR. A resource must meet at least one of the following criteria (PRC 5024.1; 14 CCR Section 15064.5[a][3]):

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. Title 14, CCR Section 4852(b)(1) adds, "is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States."
- Is associated with the lives of persons important in our past. Title 14, CCR Section 4852(b)(2) adds, "is associated with the lives of persons important to local, California, or national history."
- 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. Title 14, CCR 4852(b)(3) allows a resource to be CRHR eligible if it represents the work of a master.
- Has yielded, or may be likely to yield, information important in prehistory or history. Title 14, CCR 4852(b)(4) specifies that importance in prehistory or history can be defined at the scale of "the local area, California, or the nation."

Historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (14 CCR 4852[c]).

Additionally, CEQA states that it is the responsibility of the lead agency to determine whether the project will have a significant effect on "unique" archaeological resources. An archaeological artifact, object, or site can meet CEQA's definition of a unique archaeological resource even if it does not qualify as a historical resource (PRC 21083.2[g]; 14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if "it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria (PRC 21083.2[g]):

- *Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.*
- *Has a special and particular quality such as being the oldest of its type or the best available example of its type.*
- *Is directly associated with a scientifically recognized important prehistoric or historic event or person."*
- *If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts be taken to preserve these resources in place or provide mitigation measures.*

Additionally, under CEQA California Code of Regulations Title 14, Section 15064.5, when an initial study identifies the existence of, or the probable likelihood of, Native American human remains within the project, a lead agency must work with the appropriate Native Americans as identified by the NAHC. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans identified as the Most Likely Descendant (MLD) by the NAHC.

CEQA Assembly Bill 52 (California Public Resources Code Sections 21073, 21074, 21080.3, 21082.3, 21083.09, 21084.2, and 5097.94) (2014). CEQA requires that impacts to TCRs be identified and, if impacts

will be significant, that mitigation measures be implemented to reduce those impacts to the extent feasible (PRC § 21081). In the protection and management of the cultural environment, both the statute and the CEQA Guidelines (14 California Code of Regulations Section 15000 et seq.) provide definitions and standards for management of TCRs.

The Public Resources Code section 21074 defines a TCR as "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." TCRs also include "non-unique archaeological resources" that may not be scientifically significant, but still hold sacred or cultural value to a consulting tribe.

A resource shall be considered significant if it is: 1) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PCR § 5020.1(k) (discussed in detail above); or 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 of PCR § 5024.1(c). In applying these criteria, the lead agency must consider the significance of the resource to a California Native American tribe.

A project may have substantial adverse change in the significance of a TCR if:

- *The adverse change is identified through consultation with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project* (PCR § 21084.2).
- *The resource is listed, or eligible for listing, in the California Register of Historical Resources or in a local register of historical resources, and it is demolished as described in detail above* (State CEQA Guidelines section 15064.5 (b)).

The fact that a TCR is not listed in, or determined to be ineligible for listing in, the CRHR, is not included in a local register of historical resources or is not identified in a historical resources survey does not preclude a lead agency from determining that the resource may be a historical resource. (Please refer to Section 5.5 for a detailed discussion of the term "historical resource" pursuant to Guideline 15064.5(a)).

Section 15064.5(b)(1) of the CEQA Guidelines explains that effect on historical resources (or TCRs) would be considered adverse if it involves physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired. Adverse effects on historical resources may result in a project having a significant effect on the environment. Section 15064.5(c)(3) requires that TCRs receive treatment under PRC Section 21083.2, which requires that these resources be preserved in place or left in an undisturbed state. If these treatments are not possible, then mitigation for significant effects is required, as outlined in PRC Section 21082.2(c). The statutes and guidelines cited above specify how TCRs are to be analyzed for projects subject to CEQA.

Public Resources Code (PRC), Section 5097.9 et seq. (1982) establishes that both public agencies and private entities using, occupying, or operating on state property under public permit, shall not interfere with the free expression or exercise of Native American religion and shall not cause severe or irreparable damage to Native American sacred sites. This section also creates the NAHC, charged with identifying and cataloging places of special religious or social significance to Native Americans, identifying and cataloging known graves and cemeteries on private lands, and performing other duties regarding the preservation and accessibility of sacred sites and burials.

Public Resources Code 5024.1 establishes the CRHR. A resource may be listed as a historical resource in the CRHR if it meets National Register of Historic Places criteria or the following state criteria: (1) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; (2) is associated with the lives of persons important in our past; (3) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possess high artistic values; or (4) has yielded, or may be likely to yield, information important in prehistory. The CRHR is an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify California's historical resources and to indicate what properties are to be protected from substantial adverse change.

Public Resources Code 5097.98 establishes the procedures that need to be followed upon the discovery of Native American human remains. The NAHC, upon notification of the discovery of human remains is required to contact the County Coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code and shall immediately notify those persons it believes to be most likely descended from the deceased Native American.

Health and Safety Code 7050.5 establishes that any person, who knowingly mutilates, disinters, wantonly disturbs, or willfully removes any human remains in or from any location without authority of law is guilty of a misdemeanor. It further defines procedures for the discovery and treatment of Native American human remains.

Local

County of Riverside General Plan, Multipurpose Open Space Element. This document outlines several policies for the protection and preservation of prehistoric and historic cultural resources. These include (1) establishing a cultural resources program in consultation with tribes and the professional cultural resources consulting community; (2) reviewing proposed development for the possibility of cultural resources and for compliance with the cultural resources program; (3) designating as open space and allocating resources and/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state; and (4) exercising sensitivity and respect for human remains from prehistoric and historic time periods and complying with all applicable laws concerning such remains. These policies include the following (County of Riverside, 2015):

- **Policy OS 19.1** Cultural resources (both prehistoric and historic) are a valued part of the history of the County of Riverside.
- **Policy OS 19.2** The County of Riverside shall establish a cultural resources program in consultation with Tribes and the professional cultural resources consulting community. Such a program shall, at a minimum, address each of the following: application processing requirements; information database(s); confidentiality of site locations; content and review of technical studies; professional consultant qualifications and requirements; site monitoring; examples of preservation and mitigation techniques and methods; and the descendant community consultation requirements of local, state and federal law.
- **Policy OS 19.3** Review proposed development for the possibility of cultural resources and for compliance with the cultural resources program.
- **Policy OS 19.4** To the extent feasible, designate as open space and allocate resources and/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state.
- **Policy OS 19.5** Exercise sensitivity and respect for human remains from both prehistoric and historic time periods and comply with all applicable laws concerning such remains.

Consistency

Table 3.15-1 provides a list of county plans and policies that are applicable to cultural resources and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.15-1. Consistency with Applicable Plans and Policies – Cultural Resources

Plan/Policy	Consistency	Explanation
Riverside County General Plan Multipurpose Open Space Element – Policy OS 19.1. Cultural resources are a valued part of the County's history.	Yes	The Project has demonstrated the understanding that the County of Riverside values both prehistoric and historic cultural resources.
Riverside County General Plan Multipurpose Open Space Element – Policy OS 19.2. The County shall establish a cultural resources program.	Yes	The Project has demonstrated the understanding that the County of Riverside has established a cultural resources program in consultation with Tribes and the professional cultural resources consulting community.
Riverside County General Plan Multipurpose Open Space Element – Policy OS 19.3. Proposed development is reviewed for the possibility of cultural resources.	Yes	The Project area has been reviewed (surveyed and records searched) for the possibility of cultural resources and for the compliance with the cultural resources program.
Riverside County General Plan Multipurpose Open Space Element – Policy OS 19.4. Designate open space and allocate resources and/or tax credits to protect cultural resources.	Yes	The Project, to the extent feasible, has designated open space and allocated resources/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state.
Riverside County General Plan Multipurpose Open Space Element – Policy OS 19.5. Exercise sensitivity and respect for human remains and comply with all applicable laws.	Yes	The Project has complied with all applicable laws concerning human remains from both prehistoric and historic time periods.

3.16 Energy

This section describes the existing environmental conditions in the Project area relevant to energy, including providing an environmental baseline for the energy type most relevant to the Project, motor fuels (diesel and gasoline), and provides discussion on regulations and policies related to energy consumption, energy efficiency, and renewable energy.

3.16.1 Environmental Baseline

Estimated motor vehicle retail fuel sales in Riverside County from 2015 to 2020 is shown in Table 3.16-1.

Table 3.16-1. Riverside County Fuel Retail Sales 2015–2020

Year	Diesel Fuel (Million gallons/year)	Gasoline (Million gallons/year)
2015	152	1,039
2016	145	1,035
2017	148	1,052
2018	132	1,052
2019	122	1,046
2020	144	876

Source: CEC, 2021.

As indicated in Table 3.16-1, Riverside County diesel fuel retail sales have dropped by approximately 20 percent and gasoline retail sales have remained relatively constant in the five years from 2015 to 2020.

The project site, due to biological resource considerations, would not be suitable for the develop of renewable energy and the project would not include substantial use of electrical energy or the long-term use of electrical energy during operation. Therefore, an environmental baseline for electrical energy/renewable energy production and use has not been presented.

3.16.2 Regulatory Framework

Flood control infrastructure construction projects, which do not include the construction of inhabited structures, stationary emissions sources, commercial or industrial uses, etc., do not have a substantial number of directly applicable energy related regulations or planning policies. The following includes a short description of the regulations and planning policies that would directly or indirectly apply to the proposed Project's construction or operation.

3.16.2.1 Federal

The United States Environmental Protection Agency (USEPA) regulates on-road vehicle fuel efficiency, and the United States Department of Energy (DOE) regulates energy conservation standards for appliances and equipment. However, while the fuel efficiency standards would indirectly apply to any out of state on-road vehicles used during project construction or operation, there are no federal regulations or policies related to energy conservation or efficiency that would directly apply to the proposed Project. Additionally, there are no applicable federal regulations or plans related to renewable energy. Please see the Section 3.3 for a description of regulations and policies that apply more directly to air pollution or greenhouse gas emissions reduction.

3.16.2.2 State

The State of California has several regulations and plans that relate to energy consumption, energy efficiency, or renewable energy, including but not limited to:

- Renewable Portfolio Standard
- Green Building Standards (Title 24)
- Appliance Efficiency Standards (Title 20)

While several state regulations or planning policies would indirectly apply to the proposed Project, such as vehicle efficiency standards; there are no state energy related regulations or policies that directly apply to the construction or operation of the proposed Project.

3.16.2.3 Local

Riverside County has several planning documents that have policies related to energy consumption, energy efficiency, or renewable energy planning, including the General Plan, the Western Coachella Valley Area Plan, and the Climate Action Plan.

County of Riverside General Plan

The General Plan does not include a separate energy or sustainability element, but it does include several elements that include energy consumption and efficiency and renewable energy related policies (County of Riverside, 2021). These include the following project relevant policies:

- **Multipurpose Open Space Element Policy OS 16.4.** Undertake proper maintenance of County physical facilities to ensure that optimum energy conservation is achieved (Riverside County, 2015).
- **Air Quality Element Policy AQ 5.1.** Utilize source reduction, recycling, and other appropriate measures to reduce the amount of solid waste disposed of in landfills (Riverside County, 2018).

There are other non-Project specific General Plan policies that indirectly affect energy consumption or efficiency or are related to renewable energy planning, such as policies related to County procurement of efficiency vehicles, and policies that encourage the development of renewable energy.

Western Coachella Valley Area Plan

The Western Coachella Valley Area Plan (WCVAP) contains policies that guide the physical development and land uses in the unincorporated western portion of the Coachella Valley (County of Riverside, 2021). None of the policies in this plan include energy consumption, energy efficiency, or renewable energy planning within the Thousand Palms unincorporated area.

County of Riverside Climate Action Plan

The County's Climate Action Plan includes several measures for GHG emissions reduction related to energy efficiency (County of Riverside, 2019). Most of these measures relate to building construction efficiency issues or efficiency education, and none of these measures apply to the construction of a flood control project.

3.17 Wildfire

This section describes baseline conditions and regulations pertaining to wildfire resources that could be affected as a result of the proposed Thousand Palms Flood Control Project (proposed Project) or an alternative.

3.17.1 Environmental Baseline

The landscape of the immediate and surrounding areas consists of varying elevation, from 400 feet above mean sea level (amsl) at Reach 1 to 200 feet amsl at Reach 4. Vegetation communities in the Project area are generally limited to creosote bush scrub and desert dry wash woodland. Depending on annual rainfall patterns the area may also support dense stands of Sahara mustard (*Brassica tournefortii*). Most of this land is under the jurisdiction of the County of Riverside, and a portion is administered by the U.S. Bureau of Land Management (BLM) and U.S. Fish and Wildlife Service (USFWS). The predominant land use of the study area is natural open space, with residential, recreational, commercial, and agricultural uses concentrated in areas north of Interstate 10. Industrial uses are scattered throughout the central portion of the study area between Interstate 10 and the base of the Indio Hills. A portion of the 15,000-acre Coachella Valley Preserve, including the Coachella Valley National Wildlife Refuge, is in the Project area near Reach 3 and Reach 4. The lands within the Preserve are owned and administered by the BLM, USFWS, and the California Department of Fish and Wildlife (CDFW).

The Riverside County General Plan Safety Element identifies areas with rugged topography and flammable vegetation as being susceptible to fire hazards. According to the California Department of Forestry and Fire Protection (CAL FIRE), the Project is not located within any Fire Hazard Severity Zones (FHSZ) due to the lack of dense flammable vegetation and steep slopes (CAL FIRE, 2021). According to the Wildfire Susceptibility Map in the Riverside County General Plan Safety Element, areas considered to have very high FHSZ in Local, State, and Federal Responsibility Areas are concentrated in the western portions of Riverside County well away from the proposed Project (Riverside County, 2021). The Project is not located in any designated FHSZ. The nearest designated FHSZ is a Moderate FHSZ in a Federal Responsibility Area located approximately 1-2 miles to the north (Riverside County, 2021). Because the Project is not located in State for Federal Responsibility Areas, CAL FIRE and BLM Fire and Aviation Program would not be responsible for fire management or suppression activities in this area. Instead, the agency that would be responsible to provide wildfire protection to the Project would be the Riverside County Fire Department.

An online search did not find any history of recent wildfire that burned the Project area. Climate change would result in a small but general increase in temperature, and higher temperatures and droughts are likely to increase the severity, frequency, and extent of wildfires in the general area during the life of the Project (USEPA, 2016).

Riverside County Fire Department. The Riverside County Fire Department, in cooperation with CAL FIRE, provides fire and emergency services to residents in Riverside County. There are 101 fire stations located throughout the County that serve unincorporated communities, partner cities, and the State of California under the California Master Mutual Aid Agreement (RCFD, 2021).

3.17.2 Regulatory Framework

The following section provides the plans and policies that are applicable to wildfire and includes a discussion of the Project's consistency with each plan or policy.

Federal

No federal regulations pertaining to land use and recreation.

State

California Fire Plan. The Strategic California Fire Plan was finalized in June 2010 and directs each CAL FIRE Unit to prepare a locally specific Fire Management Plan. In compliance with the California Fire Plan, individual CAL FIRE units are required to develop Fire Management Plans for their areas of responsibility. These documents assess the fire situation within each of CAL FIRE's 21 units and six contract counties. The plans include stakeholder contributions and priorities and identify strategic areas for pre-fire planning and fuel treatment, as defined by the people who live and work with the local fire problem. The plans are required to be updated annually.

Local

Riverside County General Plan. The intent of the Safety Element of the Riverside County General Plan is to reduce death, injuries, property damage, and economic and social impact from hazards. The following policies included in the Safety Element generally relate to the proposed Project with respect to hazards and hazardous materials (Riverside County, 2021).

- **Policy S 4.2.** Require continued long-term operation and maintenance of fuel breaks, brush management, controlled burning, revegetation, and fire roads by Riverside County and private landowners.
- **Policy S 6.10.** Regularly review and clarify emergency evacuation plans for dam failure, inundation, fire, and hazardous materials releases. The County shall also continue to maintain, periodically update, and test the effectiveness of the Emergency Operations Plan.
- **Policy S 6.13.** Develop a blueprint for managing evacuation plans, including allocation of buses, designation, and protection of disaster routes to maximize capacity and redundancy, and creation of traffic-control contingencies. Ensure that evacuation transportation services are available for those with limited mobility or lacking access to a personal vehicle.

Consistency

Table 3.17-1 provides a list of county plans and policies that are applicable to wildfire and includes a discussion of the proposed Project's consistency with each plan or policy.

Table 3.17-1. Consistency with Applicable Plans and Policies – Wildfire

Plan/Policy	Consistency	Explanation
Riverside County General Plan, Safety Element - Policy S 4.2: Require long-term operation and maintenance of fire safety structures	Yes	Construction of the Project would increase food protection to the area, protecting sensitive uses and minimizing potential flooding to roads and other evacuation routes.
Riverside County General Plan, Safety Element - Policy S 6.10: Regularly renew and update evacuation plans	Yes	EC T-1 and T-2 will ensure standard safety precautions will be incorporated into the design of the Project.
Riverside County General Plan, Safety Element Policy S 6.13: Develop an evacuation plan blueprint	Yes	EC T-1 and T-2 will ensure standard safety precautions will be incorporated into the design of the Project.

4. Environmental Consequences

4.1 Introduction to Environmental Consequences

This chapter of the EIR/EIS for the proposed Thousand Palms Flood Control Project (Project) provides an assessment of environmental consequences, also referred to as "impacts" or "effects" that would result from implementation of the proposed Project or an alternative to the Project. These analyses consider direct and indirect impacts of the proposed Project and alternatives, including both short-term impacts during the construction period, and long-term impacts during operation and maintenance of the Project (cumulative impacts are assessed in Chapter 5). This chapter also identifies project-specific mitigation measures where they would serve to reduce or avoid an adverse effect and makes significance determinations for the purposes of the California Environmental Quality Act (CEQA). The types of impacts considered in this analysis are described in Section 4.1.1, the impact analysis methodology for all environmental issue areas considered are discussed in Section 4.1.2, mitigation measures are discussed in Section 4.1.3, and CEQA significance determinations are discussed in Section 4.1.4.

4.1.1 Types of Effects

This document characterizes how the proposed Project and each alternative could potentially result in direct, indirect, and/or cumulative effects on the environment under each of the environmental issue areas addressed. For the purposes of this analysis, the terms "effect" and "impact" are used synonymously and may be either beneficial or detrimental. The approach used to determine severity of impacts is described in Section 4.1.4 (Significance Determinations).

- **Direct effects** are caused by an action associated with the proposed Project or an alternative and occur at the same time and place as the action.
- **Indirect effects** are caused by an action associated with the proposed Project or an alternative and occur later in time or further in distance than the direct effects of the action but are still reasonably foreseeable (40 CFR 1508.8).
- **Cumulative effects** result from the incremental impacts of an action when combined with similar impacts of other past, present, and reasonably foreseeable actions, including those resulting from impacts that may be individually insignificant but collectively significant over a period of time. Cumulative effects are addressed in Chapter 5.

Impacts may be short-term, such as those isolated to a finite construction period, or long-term, such as operations and maintenance activities.

- **Short-term effects** occur only for a short period of time after implementation of a management action; for example, construction noise impacts from construction activities would be considered short-term in nature.
- **Long-term effects** occur for an extended period after implementation of a management action; for example, operational noise during facility operations (e.g., sediment removal) would be a long-term impact, as it would last for as long as the facility is in operation.

Section 1502.16 of the Council on Environmental Quality (CEQ) regulations forms the scientific and analytic basis for the comparisons of alternatives. This chapter consolidates the discussions of those elements required by sections 102(2)(C)(i), (ii), (iv), and (v) of the National Environmental Policy Act (NEPA) which are within the scope of this EIR/EIS, and as much of Section 102(2)(C)(iii) as is necessary to support the comparisons.

4.1.2 Impact Analysis Methodology

As discussed in the Introduction and Project Description (Chapters 1 and 2), this document is a joint effort between the Coachella Valley Water District, as CEQA Lead Agency, and the Corps Regulatory Division, as NEPA Lead Agency. The context of environmental analyses required under CEQA versus NEPA is slightly different. For the purposes of this document, the methodology used in characterizing potential impacts under both CEQA and NEPA uses the same set of threshold criteria, which serve as benchmarks for determining whether Project actions will result in impacts when compared to the baseline conditions described in Chapter 3.

The criteria presented in Appendix G of the CEQA Guidelines are often used towards this "benchmark" purpose; it is important to note that the Appendix G criteria serve as guidelines rather than requirements. As described in Chapter 1 of this EIR/EIS, a previous version of the proposed Project was assessed by the Corps Planning Division in a joint CEQA/NEPA document that was finalized in 2000. That document used criteria that were crafted specifically for the previous alignment of this Project. In order to produce the most thorough impact analysis possible, this EIR/EIS employs a merged set of criteria that reflects both Appendix G of the CEQA Guidelines and criteria from the 2000 Final EIS/EIR produced by Corps Planning.

Criteria used for identifying impacts of the proposed Project and alternatives are presented at the beginning of each section within this chapter. For each environmental issue area, any criteria that are not considered applicable to the proposed Project or an alternative are also identified following this list, and only those criteria applicable to the Project or an alternative are used in the impact analysis. In determining whether an impact would occur, all actions proposed under the Project and alternatives are considered against baseline environmental conditions per the criteria described above and presented at the beginning of each issue area section. Impact analyses for each issue area are organized per these criteria, and impact statements are presented only where an impact is anticipated to occur.

4.1.3 Mitigation Measures

State CEQA Guidelines Section 15370 and Section 1508.20 of the CEQ regulations for implementing NEPA define mitigation as follows:

a) Avoiding the impact altogether by not taking a certain action or parts of an action;
b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
e) Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation measures are identified throughout this chapter, as necessary to avoid or minimize potential adverse effects of the Project. In some instances, mitigation measures require actions similar to those required by existing laws and regulations; such measures are meant to supplement and enhance legal requirements by specifying Project-specific applicability. The Applicant (CVWD) will be required to comply with mitigation measures identified in this EIR/EIS through certification of the document by the Lead Agencies.

4.1.4 Significance Determinations

As noted in Section 4.1.2, the context of environmental analysis required under CEQA and NEPA is different. Within these contexts, CEQA requires that significance determinations be made for each

identified impact, while NEPA does not require such determinations. Impact significance requirements under CEQA and NEPA are summarized below.

- **CEQA.** A significant impact is defined by CEQA as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (State CEQA Guidelines §15382). The CEQA Lead Agency is responsible for determining whether an impact is significant and is required to adopt feasible mitigation measures to minimize or avoid each significant impact. For the purposes of CEQA compliance, the significance of each identified impact of the proposed Project and alternatives has been determined.
- **NEPA.** Under NEPA, significance is defined by CEQ Section 1508.27 as a measure of the intensity and context of the effects of a major federal action on the human environment, where "intensity" refers to the severity or level of magnitude of impacts, and "context" means that the effects of an action must be analyzed within a framework or within physical or conceptual limits. Public health and safety, proximity to sensitive areas, level of controversy, unique risks, or potentially precedent-setting effects may all be considered in determining the intensity and context of an effect. The analysis identifies any adverse environmental effects of the Project that cannot be avoided and presents mitigation measures to minimize adverse environmental impacts (40 CFR 1502.16).

Significance determinations provided for impacts identified in this chapter are made exclusively for the purposes of CEQA. However, mitigation measures identified to reduce or avoid impacts identified in this chapter are developed for the purposes of both CEQA and NEPA. In order to clarify this separation, CEQA significance determinations are made under separate headings under each impact statement.

In order to provide for a comprehensive and systematic evaluation of potential environmental impacts, a classification system is applied to each identified impact. These classifications indicate whether an identified impact is significant for the purposes of CEQA, and whether mitigation measures can reduce the severity of the impact to a level that is not significant. As such, the classifications listed below are uniformly applied to each identified impact, for CEQA.

- **Class I:** Significant unavoidable adverse impact that cannot be mitigated to a level that is not significant. Mitigation measures may be applied to reduce the significance of Class I impacts, but they remain Class I even with the implementation of mitigation measures.
- **Class II:** Significant adverse impact that is reduced to a less-than-significant level with the implementation of mitigation measures.
- **Class III:** Adverse impact that is less than significant without the implementation of mitigation measures; Class III impacts are often less than significant because they result in minor changes to the environment, and/or are temporary in duration.
- **Class IV:** Beneficial impact.

One of the significance determinations listed above is assigned to each environmental impact identified in this chapter, for the purposes of CEQA. Some issue areas assessed in this document lend themselves to scientific or mathematical analysis and, therefore, to quantification, while others are more qualitative, and require a narrative justification in making impact significance determinations. For instance, the issue area of Air Quality is assessed in comparison to quantitative significance thresholds established by regulatory agencies, while the issue area of Aesthetics requires more of a qualitative analysis; each significance determination provided in this chapter are supported with narrative text explaining how the determination was made.

4.2 Aesthetics

The section presents the potential aesthetics impacts associated with construction and O&M of the Project and alternatives. Refer to Section 3.2.1 for a description of the existing environment, and Section 3.2.2 for the regulatory framework for aesthetics applicable to the Project.

4.2.1 Issues Identified During Scoping

There were no aesthetics issues identified during the public scoping period. See Appendix A (Public Scoping) for a summary of issues relevant to the Project raised during the scoping process.

4.2.2 Environmental Consequences

4.2.2.1 Thresholds of Significance

Significance Criteria. To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the proposed Project and alternatives. Appropriate criteria have been identified and utilized to make these significance conclusions. The following significance criteria for aesthetics were derived Appendix G of the CEQA Guidelines. In addition, the following list includes significance criteria that were used in the 2000 Final EIS/EIR for the original alignment of the Project (USACE, 2000). Although this EIR/EIS is a stand-alone document, the 2000 Final EIS/EIR criteria were crafted by the U.S. Army Corps of Engineers (USACE) Planning Division (the NEPA Lead Agency at that time) specifically for the Project and are therefore considered applicable to the current Project. Impacts are considered significant if the proposed Project or alternatives would:

- **Criterion AS1:** Have a substantial adverse effect a scenic vista, and/or impair or obstruct views from public gathering place(s) of scenic resources identified in federal, State, and/or local plans.
- **Criterion AS2:** Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings, within a state scenic highway.
- **Criterion AS3:** Substantially degrade the existing visual character or quality of the site and its surroundings or result in permanent changes to important scenic characteristics of a landscape that is viewed by a large number of viewers and/or one or more residences.
- **Criterion AS4:** Create a new source of substantial light or glare that would substantially affect day or nighttime views.

Impact Assessment Methodology. The impact analysis is based on an assessment of baseline conditions relevant to the site, presented in Section 3.2.1 (Aesthetics – Environmental Baseline), and an assessment of Project-related and alternative-related effects on baseline conditions during Project construction, long-term operation, and long-term maintenance using appropriate technical analysis and the impact significance criteria.

4.2.2.2 Proposed Project (Alternative 1)

Direct and Indirect Effects Analysis

Have a substantial adverse effect a scenic vista, and/or impair or obstruct views from public gathering place(s) of scenic resources identified in federal, State, and/or local plans (Criterion AS1).

Impact AS-1: The Project could cause an adverse effect to a scenic vista.

Temporary impacts to scenic visits may occur as facilities are being constructed due to the use of large construction equipment, which would conflict with the visual character of the area, and also somewhat obscure views; however, overall, views of the Coachella Valley Preserve (Preserve) and Indio Hills would not be blocked during construction.

Scenic vistas in the immediate Project area to the north include the Coachella Valley Preserve (Preserve) (foreground view), the Indio Hills and desert palm oases (middle-ground view), and Little San Bernardino Mountains (background view). To the south views look past urbanized areas of Thousand Palms, Rancho Mirage, Palm Desert, and Indian Wells at the Santa Rosa and San Jacinto Mountains (background view).

Reach 1 would generally be located north and parallel to Southern California Edison's (SCE) existing transmission line corridor. Residences located north of Reach 1 would have unobstructed views of the Preserve and the Indio Hills. Views of the levee for northern residences would be of a soil cement, man-made feature in an area that currently consists of vacant land and transmission lines. The Reach 1 levee would be 5- to 14-feet high but would be located sufficiently far from northern residences that long-distant views to the south of the Santa Rosa and San Jacinto Mountains would be partially obstructed. The southern/downstream side of the proposed levee would be comprised of earthen/soil materials, which would blend with the surrounding surfaces (per Environmental Commitment [EC] V-1, Design Consistent with Surroundings). For residences located to the south of Reach 1, views of the levee would be buffered by SCE's transmission line corridor and would be located within middle-ground views thereby limiting effects on long-range scenic vistas of the Indo Hills; however, foreground views of the desert landscape and foothills would be obstructed.

Reach 1 would also obstruct views for recreationists along a regional trail located along Reach 1 (see Figure 3.8-4, Recreational Resources).

The Reach 2 levee would be approximately 5 feet high and is generally situated near SCE's substation (no sensitive viewers), and in an area where the closest residences (along Vista De Oro) are situated away from the street with intervening vegetation and fencing obscuring views toward the levee and the Indio Hills.

The Reach 3 levee would vary in height from approximately 5 to 14 feet high, depending on topography and ground slope. The northern portion of the Reach 3 levee is located well over 1,000 feet from residences and east of a sub transmission line that heads south out of SCE's Ramon Substation (middle-ground view), such that views of the Indio Hills would not be appreciably obstructed. The southern portion of Reach 3 near Xavier Preparatory High School consists of a channel which would be in foreground views but would be buffered by existing vegetation and a solar field at the high school. Additionally, the golf course has been constructed such that the vegetation and topography would generally block views of the proposed levee and channel. Views of the Indio Hills would not be substantially affected.

Reach 3 would partially obstruct views for recreationists along a regional trail located along Reach 3 (see Figure 3.8-4).

Reach 4 would be comprised of an incised trapezoidal channel. Approved residential development projects, including Mirasera and Valanté, could be located south of the newly aligned Avenue 38 and Reach 4. The channel would not substantially alter scenic views, and the dunes and background hills would remain visible to the public. Residences in Del Webb's Sun City area are buffered by a greenbelt and Washington Street, along with various block walls, which essentially eliminate views of the proposed Project. Temporary disturbance to connect the Project to the existing flood control system in Del Webb would temporarily diminish views of the greenbelt, but these areas would be restored and replanted at the conclusion of constriction.

Recreationists along the Class I bike paths in the area (Washington Street and Varner Road - see Figure 3.8-4) would have permanent views of the Reach 4 channel but would retain views of the adjacent dunes and background hills due to the low profile of the channel.

Sand disposed of during construction would be spread out in disposal areas located south of Avenue 38, resulting in an approximately two-foot increase in the height of the property. This would not result in a substantial visual change or modify the character of the area. Placement of excavated sands in the existing National Wildlife Refuge Blow Sand Augmentation Area would result in an approximately 8-foot-high sand dune. This dune would be located in middle-ground views for residences along Reach 3, thereby limiting effects on long-range scenic vistas of the Indo Hills and is consistent with the existing environment of that area.

ECs and Mitigation Measures Applicable to Impact AS-1

EC V-1 (Design Consistent with Surroundings)

CEQA Significance Conclusion

With implementation of EC V-1 (Design consistent with Surroundings), the levees would be designed to blend into the existing surroundings; however, the height of the levees (ranges from 5- to 14-feet high) would result in a disruption of the viewshed. Foreground views of the desert landscape would be obstructed for residences located in close proximity to the levee in Reach 1, as well as for recreationists using the regional trails located near Reach 1 and Reach 3. Impacts to scenic vistas would be significant and unavoidable (Class I).

Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings, within a state scenic highway (Criterion AS2).

The only highway recognized by Caltrans as a designated scenic highway in the general vicinity of the proposed Project is State Route 62 (Twentynine Palms Highway), located over 12 miles northwest of Reach 1 (Caltrans, 2021). State Route 62 is eligible for the State Scenic Highway System but is not officially designated. California State Route 111 (Highway 111) is also an eligible State scenic highway (not officially designated) and is located at least five miles southwest of the proposed Project (Caltrans, 2021). As such, the proposed Project would not damage scenic resources within a State scenic highway.

CEQA Significance Conclusion

There are no State scenic highways in close proximity to the proposed Project. No impact would occur.

Substantially degrade the existing visual character or quality of the site and its surroundings, or result in permanent changes to important scenic characteristics of a landscape that is viewed by a large number of viewers and/or one or more residences (Criterion AS3).

Impact AS-2: The Project could degrade the existing visual character or quality of the site and its surroundings.

During construction, the temporary use of heavy construction equipment along the Project alignment would be visible to residences and recreationists within Thousand Palms and unincorporated areas of Riverside County. These activities would adversely affect the visual character and quality of the area, which is known for its open desert landscapes. Per EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors), construction activities would be located to avoid residences and other sensitive viewers to the extent feasible. While this would minimize the potential to degrade the visual character and quality of the area, the temporary impacts of construction would remain adverse.

The proposed Project would be designed to blend in with the existing surroundings, per EC V-1 (Design Consistent with Surroundings). As described in the Project Description, upstream/northern sides of the levees (facing the Indio Hills) would be comprised of soil cement, while the southern/downstream side would be comprised of earthen/soil materials. As discussed under Impact AS-1, the proposed levees would obstruct foreground views of the desert landscape, most notably within Reach 1, which would degrade the existing visual quality of the surroundings.

ECs and Mitigation Measures Applicable to Impact AS-2

EC V-1 (Design Consistent with Surroundings)
EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors)

CEQA Significance Conclusion

The area north of the Project is known for its open desert landscapes, scattered rural residences, and sand dunes. A variety of landforms are located south of the Project, including open spaces, single family homes, and industrial areas. Use of large construction equipment would degrade the visual character and quality of the area, even with implementation of EC N-1. The levees would be constructed to blend in with the existing surroundings per EC V-1; however, the proposed levees would obstruct foreground views of the desert landscape, most notably within Reach 1, which would degrade the existing visual quality of the surroundings. Impacts would be significant and unavoidable (Class I).

Create a new source of substantial light or glare that would substantially affect day or nighttime views (Criterion AS4).

Impact AS-3: Project construction could create a new source of substantial light or glare.

As described in Section 2.2.2 (Construction), the proposed Project would be constructed Monday through Friday between 7:00 a.m. and 3:30 p.m., except as otherwise required for safety or protection of persons or property. No work would occur at night without CVWD's written consent. As such, use of lighting during construction is generally not anticipated, although early morning work during winter months or to meet schedule constraints may necessitate the use of night lighting. Work at these times would require CVWD's written consent. Due to the general lack of lighting along the proposed alignment, construction lights could result in adverse effects. Mitigation Measure BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan) requires night lighting to be designed,

installed, and maintained to prevent side casting of light towards surrounding habitat, which would also reduce potential lighting impacts on nighttime views.

ECs and Mitigation Measures Applicable to Impact AS-3

See Section 4.6 (Biological Resources) for the complete text of the following mitigation measures:
MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

CEQA Significance Conclusion

Construction would generally occur during daylight hours, except as otherwise required for safety or protection of persons or property or in response to schedule constraints. Mitigation Measure BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan) would reduce potential lighting impacts on nighttime views to a less-than-significant level (Class II).

Impact AS-4: Project operation could create a new source of substantial light or glare.

The proposed levees and channels would be constructed of soil cement and earthen/soil materials, which would not create glare. No permanent lighting is proposed on the levees or channels. O&M activities would occur during daylight hours, except under emergency conditions.

CEQA Significance Conclusion

O&M activities would occur during daylight hours, except under emergency conditions. The levees and channels would not create glare or have any associated lighting. Impacts related to light and glare during operations would be less then significant (Class III).

4.2.2.3 Removal of Reach 2 (Alternative 2)

Direct and Indirect Effects Analysis

Have a substantial adverse effect a scenic vista, and/or impair or obstruct views from public gathering place(s) of scenic resources identified in federal, State, and/or local plans (Criterion AS1).

Impact AS-1: The Project could cause an adverse effect to a scenic vista.

As the only difference between Alternative 2 and the proposed Project is the removal of Reach 2, this alternative would have similar impacts as the proposed Project as described in Section 4.2.2.1. Alternative 2 would be in the same location, however, any impacts from Reach 2 would be eliminated. For this alternative, as in the proposed Project, Reach 1 would obstruct foreground views of the desert landscape and foothills as well as views for recreationists along a regional trail located along Reach 1 (see Figure 3.8-4). Reach 3 would partially obstruct views for recreationists along a regional trail located along Reach 3 but would not substantially affect other views such as those of the Indio Hills. Additionally, Reach 4 would not substantially alter any scenic views. Impacts to scenic vista views would be reduced to the extent feasible with implementation of EC V-1 but would remain adverse. Sand disposal for this alternative would be the same as in the proposed Project, which would either be spread out in disposal areas or placed in a sand dune that is consistent with the National Wildlife Refuge Blow Sand Augmentation Area.

ECs and Mitigation Measures Applicable to Impact AS-1

EC V-1 (Design Consistent with Surroundings)

CEQA Significance Conclusion

Alternative 2 would implement EC V-1 such that levees would be designed to blend into the visual surroundings. However, the height of the levees would disrupt the viewshed. This alternative would have the same impacts to desert landscape views from Reaches 1 and 3 for residences and recreationalists. This alternative would be unable to avoid significant impacts to scenic vistas (Class I).

Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings, within a state scenic highway (Criterion AS2).

Same as the proposed Project, the Reach 1 levee in Alternative 2 would be located over 12 miles northwest of the closest Caltrans designated scenic highway (State Route 62) and Alternative 2 would be at least 5 miles southwest of the nearest eligible State scenic highway (Highway 111). Therefore, this alternative would not damage scenic resources within a State scenic highway.

CEQA Significance Conclusion

There are no State scenic highways in close proximity to Alternative 2. No impact would occur.

Substantially degrade the existing visual character or quality of the site and its surroundings, or result in permanent changes to important scenic characteristics of a landscape that is viewed by a large number of viewers and/or one or more residences (Criterion AS3).

Impact AS-2: The Project could degrade the existing visual character or quality of the site and its surroundings

Alternative 2 would be expected to have similar impacts to those of the proposed Project as it would include use of similar construction equipment and activity as discussed in Section 4.2.2.1. Though, like the proposed Project, Alternative 2 would comply with EC N-1 to minimize risks of degrading the visual character and quality of the area, temporary impacts of construction would be adverse. While Alternative 2 would follow the same design standards as the proposed Project, the varying levee heights, particularly of Reach 1 as discussed under Impact AS-1, would obstruct views of the desert landscape, thereby degrading the visual quality of the surrounding area. Impacts would be reduced to the extent feasible with implementation of ECs V-1 and N-1 but would remain adverse.

ECs and Mitigation Measures Applicable to Impact AS-2

EC V-1 (Design Consistent with Surroundings)
EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors)

CEQA Significance Conclusion

As in the proposed Project, despite the fact that Alternative 2 would design the levees to blend into the existing surroundings per EC V-1, use of construction equipment to build the levees, in addition to the levees themselves, would degrade the visual character of the area and create obstructed desert views. Therefore, even with this design alteration, impacts would be significant and unavoidable (Class I).

Create a new source of substantial light or glare that would substantially affect day or nighttime views (Criterion AS4).

Impact AS-3: Project construction could create a new source of substantial light or glare.

Construction of Alternative 2 would essentially be the same as the proposed Project, except that no activities would occur in Reach 2. Construction would occur primarily during the daytime hours and, hence, generally not expected to require the use of additional lighting resources as described in Section 4.2.2.1. However, as in the proposed Project, should construction occur during winter months or night work become necessary, use of night lighting may be needed, but would require CVWD's written consent. As the potential use of construction lights could have adverse effects, Alternative 2 would implement the same mitigation measure as the proposed Project (MM BIO-10) to minimize potential lighting impacts on nighttime views.

ECs and Mitigation Measures Applicable to Impact AS-3

See Section 4.6 (Biological Resources) for the complete text of the following mitigation measures:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

CEQA Significance Conclusion

Construction activities for Alternative 2 would primarily occur during the daytime except as required for personnel safety or schedule constraints. With the implementation of Mitigation Measure BIO-10 to reduce potential lighting impacts, any impacts to nighttime views would be reduced to a less-than-significant level (Class II).

Impact AS-4: Project operation could create a new source of substantial light or glare.

Alternative 2 would utilize the same construction materials as the proposed Project along with the same O&M activities as given in Section 4.2.2.1, except for no work along Reach 2. No permanent lighting use is proposed for this alternative, nor would the construction materials create glare.

CEQA Significance Conclusion

As all O&M activities and construction operations for Alternative 2 would be the same as the proposed Project, impacts to light and glare during operations would be less than significant (Class III).

4.2.2.4 Modified Reach 3 (Alternative 3)

Direct and Indirect Effects Analysis

Have a substantial adverse effect a scenic vista, and/or impair or obstruct views from public gathering place(s) of scenic resources identified in federal, State, and/or local plans (Criterion AS1).

Impact AS-1: The Project could cause an adverse effect to a scenic vista.

The only difference between Alternative 3 and the proposed Project is the inclusion of two modification possibilities to the angle of Reach 3, as such for aesthetics this alternative would have similar impacts as the proposed Project as described in Section 4.2.2.1. Alternative 3 would be in the same location, however, the two different possible options for the angle of Reach 3 would have slightly different impacts

to scenic views. For this alternative, as in the proposed Project, Reach 1 would obstruct foreground views of the desert landscape and foothills, as well as views for recreationists along a regional trail located along Reach 1 (see Figure 3.8-4). Views of the Reach 2 levee would be obstructed by vegetation and fencing, and therefore would not, itself, obstruct any views. For Reach 3, option A would partially obstruct views for recreationists along a regional trail located along Reach 3, and could partially obstruct residential views of Indio Hills, as it would be located within 1,000 feet to the east of residences. Option B would have impacts similar to that of Reach 3 in the proposed Project as it would partially obstruct views for recreationists along a regional trail but would not substantially affect other views such as those of Indio Hills due to being located farther away from residences. Views of options A and B for Reach 3 would be buffered by existing vegetation and a solar field near the local high school as in the proposed Project. Reach 4 would not substantially alter any scenic views. Impacts to scenic vista views would be reduced to the extent feasible with implementation of EC V-1 but would remain adverse. Sand disposal for this alternative would be the same as in the proposed Project, which would either be spread out in disposal areas or placed in a sand dune that is consistent with National Wildlife Refuge Blow Sand Augmentation Area.

ECs and Mitigation Measures Applicable to Impact AS-1

EC V-1 (Design Consistent with Surroundings)

CEQA Significance Conclusion

Alternative 3 would implement EC V-1 such that levees would be designed to blend into visual surroundings; however, the levees would vary in height, thereby resulting in a disruption of the viewshed. This alternative would have the same impacts to desert landscape views from Reaches 1 and 3 for residences and recreationalists. Therefore, impacts to scenic vistas would be significant and unavoidable (Class I).

Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings, within a state scenic highway (Criterion *AS*2).

Same as the proposed Project, the Reach 1 levee in Alternative 3 would be located over 12 miles northwest of the closest Caltrans designated scenic highway (State Route 62) and Alternative 3 would be at least 5 miles southwest of the nearest eligible State scenic highway (Highway 111). The two possible adjustments to Reach 3 would not change this distance. Therefore, this alternative would not damage scenic resources within a State scenic highway.

CEQA Significance Conclusion

There are no State scenic highways in close proximity to Alternative 3. No impact would occur.

Substantially degrade the existing visual character or quality of the site and its surroundings, or result in permanent changes to important scenic characteristics of a landscape that is viewed by a large number of viewers and/or one or more residences (Criterion AS3).

Impact AS-2: The Project could degrade the existing visual character or quality of the site and its surroundings.

Alternative 3 would be expected to have similar impacts as the proposed Project because it would include use of similar construction equipment and activity as discussed in Section 4.2.2.1. Though, like the proposed Project, Alternative 3 would comply with EC N-1 to minimize risks of degrading the visual

character and quality of the area, temporary impacts of construction would be adverse. While Alternative 3 would follow the same design standards as the proposed Project, the varying levee heights, particularly of Reach 1 as discussed under Impact AS-1, would obstruct views of the desert landscape, thereby degrading the visual quality of the surrounding area. Impacts would be reduced to the extent feasible with implementation of ECs V-1 and N-1 but would remain adverse.

ECs and Mitigation Measures Applicable to Impact AS-2

EC V-1 (Design Consistent with Surroundings)
EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors)

CEQA Significance Conclusion

As in the proposed Project, despite the fact that Alternative 3 would design the levee**s** to blend into the existing surroundings per EC V-1, use of construction equipment to build the levees, in addition to the levee**s** themselves, would degrade the visual character of the area and create obstructed desert views. Thus, though this alternative would include design alterations, impacts to the existing visual character would still be significant and unavoidable (Class I).

Create a new source of substantial light or glare that would substantially affect day or nighttime views (Criterion AS4).

Impact AS-3: Project construction could create a new source of substantial light or glare.

Construction of Alternative 3 would essentially be the same as the proposed Project, primarily occurring during the daytime hours and, therefore, the use of lighting during construction is not generally expected. However, as in the proposed Project, should construction occur during winter months or night work become necessary, use of night lighting may be needed but would require CVWD's written consent. As the potential use of construction lights could have adverse effects, Alternative 3 would implement the same mitigation measure as the proposed Project (MM BIO-10) to minimize potential lighting impacts on nighttime views.

ECs and Mitigation Measures Applicable to Impact AS-3

See Impact MM BIO-2 in Section 4.6 (Biological Resources) for the complete text of the following mitigation measures:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

CEQA Significance Conclusion

Construction activities for Alternative 3 would primarily occur during the daytime except as required for personnel safety or schedule constraints. With the implementation of Mitigation Measure BIO-10 to reduce potential lighting impacts, any impacts to nighttime views would be reduced to a less-than-significant level (Class II).

Impact AS-4: Project operation could create a new source of substantial light or glare

The levees and channels in Alternative 3 would utilize the same construction materials as the proposed Project along with the same O&M activities as described in Section 4.2.2.1. No permanent lighting use is proposed for this alternative, nor would the construction materials create glare.

CEQA Significance Conclusion

As all O&M activities and construction operations for Alternative 3 would be the same as the proposed Project, impacts to light and glare during operations would be less than significant (Class III).

4.2.2.5 No Action (Alternative 4)

Direct and Indirect Effects Analysis

Under the No Action Alternative, the flood control project would not be constructed. Therefore, scenic vistas or views and existing visual character would not be subject to the effects of the Project. If the proposed Project is not built it is possible that another project may be proposed in the future to address the area's flooding problem. It is unknown if future project(s) would share design features with the proposed Project or where such a project would be located. Under a scenario where catastrophic flooding occurs, adverse aesthetic impacts could occur as a result of flood flows, cleanup, and/or repair activities which could degrade the existing visual character of the Project area. However, the scale, duration, and location of such impacts is unknown, or otherwise speculative.

4.2.3 Impact Summary – Aesthetics

Table 4.2-1 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to aesthetics. Refer to Section 4.2.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures, and Table 2-4 for the full text of the environmental commitments.

Table 4.2-1. Summary of Impacts and Mitigation Measures – Aesthetics

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Reach 2 Removal	Alt. 3: Modified Reach 3	
AS-1: The Project could cause an adverse effect to a scenic vista.	Class I	Class I	Class I	EC V-1 (Design consistent with Surroundings)
AS-2: The Project could degrade the existing visual character or quality of the site and its surroundings.	Class I	Class I	Class I	EC V-1 (Design Consistent with Surroundings) EC N-1 (Locate Construction Activities to Avoid Sensitive Receptors)
AS-3: Project construction could create a new source of substantial light or glare.	Class II	Class II	Class II	MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)
AS-4: Project operation could create a new source of substantial light or glare.	Class III	Class III	Class III	None required.

Class I **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.3 Air Quality and Greenhouse Gases

The section presents the potential air quality and greenhouse gas (GHG) impacts associated with construction and O&M of the Project and alternatives. Refer to Section 3.3.1 for a description of the existing air quality environment, and Section 3.3.2 for the regulatory framework applicable to the Project.

4.3.1 Issues Identified During Scoping

The South Coast Air Quality Management District (SCAQMD) and the United States Environmental Protection Agency (USEPA) provided scoping comment letters (SCAQMD, 2016; USEPA, 2016), but these letters were not Project specific. They primarily addressed the methods and procedures that are recommend for air quality and GHG emissions assessments, and the information to be supplied to allow for agency review. The air quality assessment provided in this EIR/EIS has been designed to meet those requests. No other air quality or GHG specific comments were received during scoping.

4.3.2 Environmental Consequences

4.3.2.1 Thresholds of Significance

Air Quality

Significance Criteria. The significance of potential air quality impacts was determined based on relevant State CEQA Guidelines, Appendix G. Impacts are considered significant if the proposed Project or alternatives would:

- **Criterion AQ1:** Conflict with or obstruct implementation of the applicable air quality plan.
- **Criterion AQ2:** Result in 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.

The regional daily maximum emissions thresholds of significance for construction activities and Project operations, as shown in Table 4.3-1, were used in this EIR/EIS to determine the significance of Project air quality impacts. These criteria are based on CEQA thresholds recommended by the SCAQMD (SCAQMD, 2019).

Table 4.3-1. SCAQMD Regional Air Quality Emissions Significance Thresholds

Pollutant	Construction	Operation
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day

Source: SCAQMD, 2019.

The potential for the Project to exceed the relevant federal General Conformity thresholds is evaluated in Appendix B.2.

- **Criterion AQ3**: Exposes sensitive receptors to substantial pollutant concentrations.

SCAQMD published localized significance thresholds (LST) that are used to determine impacts on ambient air quality for off-site sensitive receptors. The published LSTs for construction activities and operations were used in this EIR/EIS to determine the significance of Project air quality impacts (SCAQMD, 2009). The Project is in Source Receptor Area (SRA) 30 (Coachella Valley). The actual site acreage of the entire Project is quite large, but the daily working area is conservatively assumed to be one acre to minimize the allowable LST emissions thresholds. The minimum distance to sensitive receptors used to determine the appropriate LST values are based on the distances noted in Table 3.3-5, and the resulting LST significance criteria values that are used in the impact assessment are provided in Table 4.3-2. The emissions impacts of toxic air contaminants (TACs) are also evaluated under this impact statement, and SCAQMD's thresholds for air toxics impacts are provided in Table 4.3-2.

Table 4.3-2. SCAQMD LST and TACs Air Quality Emissions Significance Thresholds

Localized Significance Criteria

Pollutant	Construction	Operation
NO_x	25 meters – 132 lbs/day 50 meters – 166 lbs/day 100 meters – 238 lbs/day 200 meters – 376 lbs/day 500 meters – 733 lbs/day	Same as Construction
CO	25 meters – 878 lbs/day 50 meters – 1,387 lbs/day 100 meters – 2,565 lbs/day 200 meters – 6,021 lbs/day 500 meters – 24,417 lbs/day	Same as Construction
PM10	25 meters – 4 lbs/day 50 meters – 13 lbs/day 100 meters – 35 lbs/day 200 meters – 80 lbs/day 500 meters – 214 lbs/day	25 meters – 1 lb/day 50 meters – 3 lbs/day 100 meters – 9 lbs/day 200 meters – 20 lbs/day 500 meters – 52 lbs/day
PM2.5	25 meters – 3 lbs/day 50 meters – 5 lbs/day 100 meters – 10 lbs/day 200 meters – 24 lbs/day 500 meters – 105 lbs/day	25 meters – 1 lb/day 50 meters – 2 lbs/day 100 meters – 3 lbs/day 200 meters – 6 lbs/day 500 meters – 26 lbs/day
TACs (Includes carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic and Acute Hazard Index ≥ 1.0 (project increment)	

Source: SCAQMD, 2009; SCAGMD, 2019.

Another air quality-related impact assessed under this criterion is the potential for exposure to Valley Fever spores that could be caused by the project's construction and operation earthmoving activities.

- **Criterion AQ4**: Result in other emissions (such as those leading to odors) affecting a substantial number of people.

Air Quality Impact Assessment Methodology. The impact analysis is based on an assessment of baseline conditions relevant to the site, presented in Section 3.3.1.1, and an assessment of Project-related and alternative-related effects on baseline conditions during Project construction, long-term operation, and long-term maintenance using appropriate technical analysis and the impact significance criteria.

Emission Calculations Methodology[1]

Construction Emissions. Equipment usage and scheduling data estimates were used to calculate emissions for the proposed construction activities. Air pollutant emissions from the construction activities were calculated using emissions factors derived from the latest version of the CARB EMFAC and OFFROAD programs, and United States Environmental Protection Agency (USEPA) and SCAQMD emission factors or assumptions for fugitive dust emissions calculation. Emission factors for on-road and off-road equipment were developed for each of the three calendar years covered in the construction schedule, assuming fleet-wide average emissions factors for the SCAQMD. Fugitive dust emissions factors, developed using USEPA AP-42 calculation methods, were calculated assuming dust control measure compliance with SCAQMD Rules 403 and 403.1 "Large Operations" requirements. For more information on the construction emissions calculation methodology, assumptions, and the detailed calculations, please refer to Appendix B.1.

Operation Emissions. This Project would require regular periodic removal of accumulated deposition in Reaches 3 and 4 that is estimated to accumulate at a rate of 51,000 cubic yards (CY) per year, would require occasional removal of sediment after major storm events that is estimated to be approximately 1,785 CY when needed, and would require monthly inspections and quarterly vegetation spraying. Additionally, periodic application of dust suppressants may be required. There would not be any regular on-site employees, buildings, or other facilities using electricity or water associated with the Project. The operating emissions are estimated using the same methods and procedures as those used for construction, using emissions factors that are relevant to the first full year after construction is assumed to be complete. For more information on the O&M emissions calculation methodology, assumptions, and the detailed calculations, please refer to Appendix B.1.

Environmental Controls. The CVWD has committed to reducing air pollutant emissions by committing to using an electric grid powered on-site concrete bath plant that would reduce diesel engine emissions (EC AQ-1). Additionally, direct and indirect air pollutant emissions would be reduced through CVWD's GHG emissions reduction commitment to recycle construction wastes (i.e., concrete, asphalt, and metal wastes) and reuse excavated materials for the levee construction to the extent feasible (EC GHG-1). Fugitive dust emissions during construction would be controlled through compliance with SCAQMD Rule 403.1, and any portable or temporary stationary source equipment, such as the concrete batch plant, would comply with all other applicable air quality rules and regulations.

Greenhouse Gases

Significance Criteria. Appendix G of the State CEQA Guidelines presents significance criteria that may be used by the lead agency to address and evaluate significance of an impact. According to these Guidelines, the following criteria may be used to establish if the Project would result in significant GHG emissions:

- **Criterion GHG1:** Generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

[1] Emissions were calculated in 2016 using period appropriate CARB, USEPA, and other accepted emissions factors. In the four plus years since the emissions calculations were completed the CARB emissions factors have been updated, as have the GHG emissions factor from The Climate Registry. Additionally, the project schedule that assumed construction between 2018 to 2020 is delayed several years. The combined effect is that the 2016 emissions estimate, using the assumption that fleet average off-road equipment and on-road vehicles are used, would be conservative. The effect of the schedule on the average equipment fleet creates an overestimate of tailpipe emissions, while the fugitive dust emissions estimate should not be affected, and the GHG emissions estimate should only be marginally affected based on improvements in fuel efficiency over time.

- **Criterion GHG2:** Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

The County of Riverside Climate Action Plan Update identifies a threshold of 3,000 metric tons (MT) of carbon dioxide equivalent (CO_2) emissions per year as a screening level for CEQA evaluation. Construction GHG emissions are amortized over the project life, in the project's annual GHG emissions totals. Projects above this screening level are required to provide additional mitigation, while projects below this screening level are only required to match or exceed 2017 Title 24 energy efficiency requirements and 2017 California Green Building Standards Code water conservation measures (Riverside County, 2019). The project does not include the construction of any structures or features that would be subject to Title 24 energy efficiency requirements or 2017 California Green Building Standards Code, so the project as proposed would have less than significant GHG emissions impacts if the average annual emissions are determined to be less than 3,000 MT CO_2/year.

GHG Impact Assessment Methodology. The impact analysis for GHGs is based on an assessment of baseline conditions relevant to the site, presented in Section 3.3.1.2, and an assessment of Project-related and alternative-related effects on baseline conditions during Project construction, long-term operation, and long-term maintenance using appropriate technical analysis and the impact significance criteria.

Emission Calculations Methodology

Construction and Operation Emissions. The Project's construction and operation emission estimate is based on the same construction and operation activity estimates used to calculate the criteria pollutant emissions. The GHG emissions are calculated based on the total fuel use estimates determined through off-road equipment use, on-road vehicle miles traveled, and the GHG emissions factors from The Climate Registry (TCR, 2015; TCR, 2020). Indirect GHG emissions for electricity and water use have also been calculated, while the potential loss of natural CO_2 uptake has not been estimated. For more information on the construction and operation emissions calculation methodology, assumptions, and the detailed calculations, please refer to Appendix B.1.

Environmental Controls. The CVWD has committed to reducing GHG emissions through the recycling of construction wastes (i.e., concrete, asphalt, and metal wastes) and reuse of excavated materials for the levee construction to the extent feasible (EC GHG-1).

4.3.2.2 Proposed Project (Alternative 1)

Direct and Indirect Effects Analysis

Air Quality

Conflict with or obstruct implementation of the applicable air quality plan (Criterion AQ1).

Impact AQ-1: The Project could conflict with approved ambient air quality plans.

The Air Quality Management Plan (AQMP) proposes emission reduction measures that are designed to bring the Salton Sea Air Basin (SSAB) into attainment of the National Ambient Air Quality Standards (NAAQS) and California Air Quality Standards (CAAQS). The attainment strategies in this plan include mobile source control measures and clean fuel programs that are enforced at the federal and State levels on engine manufacturers and petroleum refiners and retailers.

The SCAQMD adopts AQMP control measures into the SCAQMD rules and regulations, which are then used to regulate sources of air pollution in the SSAB. The proposed Project would comply with these

regulatory requirements, including all SCAQMD rules and regulations. Therefore, the proposed Project's emissions sources would meet or exceed the emissions control forecasts for all approved AQMP control measures.

Since the AQMP assumes growth that is consistent with the implementation of this Project, it would not exceed the future growth projections in the AQMP, and it would not conflict with or obstruct implementation of the State Implementation Plan (SIP). As a result, construction and operation of the proposed Project would conform to the applicable AQMP.

CEQA Significance Conclusion

The SCAQMD AQMP assumes growth that is consistent with the implementation of the proposed Project. Impacts would be less-than-significant (Class III).

Result in 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 (Criterion AQ2).

Impact AQ-2: Project construction emissions could exceed SCAQMD regional significance thresholds.

Pollutant emission calculations related to the proposed Project's construction activities include the emissions from on-road vehicles and off-road equipment utilized during construction, and fugitive particulate matter (PM) emissions resulting from earthmoving activities, vehicle travel, and operation of a concrete batch plant. The emissions estimate includes the rigorous fugitive dust emissions control that would be required under SCAQMD Rules 403 and 403.1 for a "Large Operation" but assumes fleet-average on-road vehicle and off-road equipment engine emissions. Detailed assumptions for the construction phases, including equipment and on-road vehicle use, are provided in Appendix B.1. The maximum daily emissions occur during the Reach 3 channel construction over a five-day construction task overlap period. Table 4.3-3 compares the maximum daily construction emissions of the proposed Project with the SCAQMD regional significance thresholds.

Table 4.3-3. Maximum Daily Construction Emissions – Proposed Project

	VOC	CO	NO_x	PM10	PM2.5	SO_x
On-road Vehicle Emissions (lbs/day)	2.77	15.90	57.57	1.74	0.84	0.20
Off-road Vehicle Emissions (lbs/day)	19.37	165.79	260.41	11.30	10.39	0.34
Fugitive Dust Emissions (lbs/day)	—	—	—	807.80	101.41	—
Maximum Daily Construction Emissions (lbs/day)	22.14	181.69	317.98	820.83	112.64	0.53
SCAQMD Regional Significance Thresholds (lbs/day)	75	550	100	150	150	55
Exceeds Thresholds?	*No*	*No*	***Yes***	***Yes***	*No*	*No*

Source: Appendix B.1; SCAQMD, 2019.

The maximum daily regional emissions have been determined to exceed the SCAQMD regional emissions thresholds for NO_x and PM10. The maximum daily emissions shown are for a limited period during the Reach 3 channel construction, but the NO_x emissions and PM10 emissions would still exceed the significance thresholds during the entire 55 days of the Reach 3 channel construction, and there are many other long construction periods when there would be exceedances of the NO_x and/or PM10 significance thresholds. Appendix B.1 provides more detailed estimates by construction task.

ECs and Mitigation Measures Applicable to Impact AQ-2

The primary source of the proposed Project's NO_x emissions are the off-road engines. It would be hard to control the on-road vehicle NO_x emissions, and for the fleet-average on-road trucks the predominate

source of the on-road vehicle NO_x emissions would already have substantially reduced emissions due to on-road vehicle emissions standards that have been in place for many years. Therefore, for NO_x emissions control it is proposed to mitigate the off-road equipment engine emissions.

EC AQ-1 (Concrete Batch Plant)

MM AQ-1 Construction Off-Road Equipment Engines. The CVWD shall require the use of full Tier 4 engines for all diesel-fueled off-road equipment engines that are 50 horsepower or greater. Exceptions to this requirement may be allowed on a case-by-case basis for specialty equipment or any piece of equipment that would operate for less than 10 days.

Mitigation Measure AQ-1 would reduce the fleet average off-road equipment NO_x emissions shown in Table 4.3-4 by approximately 90 percent. This would ensure that the worst-case daily NO_x emissions throughout construction are reduced to the maximum extent feasible, and likely reduces the maximum daily NO_x emissions below the SCAQMD significance threshold.

Fugitive dust control already assumes the stringent control measures required for compliance with Rule 403 and 403.1 for large operations operating in the Coachella Valley Blowsand Zone. These control measures include the extensive use of water and non-toxic chemical stabilizers along with many other required control measures that would be outlined in the fugitive dust control plan required to be submitted to the County for approval. Additional mitigation measures beyond these stringent SCAQMD rule requirements would not effectively reduce the Projects' PM10 fugitive dust emissions.

CEQA Significance Conclusion

The proposed Project's maximum daily PM10 emissions during construction (see Table 4.3-4) would remain above the SCAQMD regional emissions significance threshold with implementation of Mitigation Measure AQ-1 (Off-road Equipment Engines). Construction regional emissions impacts would be significant and unavoidable (Class I).

Impact AQ-3: Project operation emissions could exceed SCAQMD regional significance thresholds.

The proposed Project's incremental O&M emissions, Project minus baseline, cannot be calculated due to unavailable information regarding the current baseline sand removal activities. Therefore, conservatively, the Project's O&M activity emissions, without subtracting the current baseline O&M emissions, have been compared with the SCAQMD regional significance thresholds. The O&M activities consist of regular removal of sand deposition in the Reach 3 and Reach 4 channels, and as needed, occasional sediment removal from all reaches after major storm events. The worst-case daily O&M emissions are shown below in Table 4.3-4.

Table 4.3-4. Maximum Daily Operation Emissions – Proposed Project

	VOC	CO	NO_x	PM10	PM2.5	SO_x
On-road Vehicle Emissions (lbs/day)	0.19	0.86	7.10	0.19	0.09	0.02
Off-road Vehicle Emissions (lbs/day)	0.90	5.93	11.35	0.44	0.41	0.02
Fugitive Dust Emissions (lbs/day)	—	—	—	30.16	3.57	—
Maximum Daily Construction Emissions (lbs/day)	1.09	6.78	18.45	30.79	4.07	0.04
SCAQMD Regional Significance Thresholds (lbs/day)	55	550	55	150	150	55
Exceeds Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*

Source: Appendix B.1; SCAQMD, 2019.

CEQA Significance Conclusion

The proposed Project's operation regional emissions would not exceed the SCAQMD regional significance thresholds (see Table 4.3-4). Impacts would be less than significant (Class III).

The Project exposes sensitive receptors to substantial pollutant concentrations (Criterion AQ3).

Impact AQ-4: Project construction emissions could exceed SCAQMD Localized Significance Thresholds.

SCAQMD LSTs are used to determine if a project could exceed ambient air quality thresholds for nearby receptors. The LSTs were established by SCAQMD for each SRA within their jurisdiction and represent on-site emission levels that could cause ambient air quality standard exceedances or substantial contributions to existing exceedances at given distances from the site to nearby receptor locations.

The appropriate LSTs for proposed Project site construction are shown above in Table 4.3-2. The maximum daily on-site CO emissions would not exceed the CO SCAQMD LSTs regardless of receptor location or construction task. The unmitigated NO_x emission could exceed the LSTs for receptors within 50 meters of the major construction element tasks, such as the various levee and channel construction tasks; however, after implementation of Mitigation Measure AQ-1 the localized NO_x emissions would drop below the LST for all receptor locations. The controlled PM10 emissions, which assume stringent Rule 403 and 403.1 mitigation measure compliance, would have the potential to exceed the SCAQMD LSTs for PM10 and PM2.5 for receptors as far as 200 to 500 meters from the levee and channel construction work sites. This means that areas surrounding each of the four reaches would have receptors temporarily impacted by construction PM10 and PM2.5 fugitive dust emissions.

ECs and Mitigation Measures Applicable to Impact AQ-4

See Impact AQ-2 for complete text of the following mitigation measure:
MM AQ-1 (Construction Off-Road Equipment Engines)

CEQA Significance Conclusion

With implementation of Mitigation Measure AQ-1, localized NOx emissions would be below the LST for all receptor locations. However, the proposed Project's maximum daily localized PM10 and PM2.5 emissions during construction (see Table 4.3-2) would remain above the SCAQMD LST emissions significance thresholds at various locations and times during construction. As such, proposed Project construction localized emissions impacts would be significant and unavoidable (Class I).

Impact AQ-5: Project operation emissions could exceed SCAQMD Localized Significance Thresholds.

The worst-case work location during the proposed Project's O&M sand clean-up operation would be associated with the sand removal activities in the lower Reach 3 channel or in the eastern Reach 4 channel. The distance from the Reach 3 channel to the Xavier College Preparatory High School and the Reach 4 channel to the nearest Sun City residence would both be approximately 100 meters. The appropriate LSTs for this receptor distance are compared to the maximum localized on-site daily O&M emissions in Table 4.3-5.

Table 4.3-5. Maximum Localized Daily Operation Emissions – Proposed Project				
	CO	NO_x	PM10	PM2.5
Maximum On-Site Operation Emissions	6.67	11.81	3.88	0.80
Reach 3/Reach 4 SCAQMD LST (lbs/day)	2,565	238	9	3
Exceeds Thresholds?	*No*	*No*	*No*	*No*

Source: Appendix B.1; SCAQMD, 2019.
Note: Assumes the following conservative proportion of emissions are local on-site emissions: exhaust emissions, Loader – 100 percent, personnel vehicles – 0 percent, water truck – 100 percent, dump trucks – 10 percent; fugitive dust emissions, material loading/handling – 50 percent, paved road dust – 0 percent, and unpaved road dust – 10 percent.

As shown in Table 4.3-5, the worst-case localized emissions for O&M are all below the appropriate SCAQMD LSTs.

CEQA Significance Conclusion

The proposed Project's O&M localized emissions would be below the LST for all receptor locations (see Table 4.3-5). O&M localized emissions impacts would be less than significant (Class III).

Impact AQ-6: Project toxic air contaminant emissions could cause SCAQMD health risk thresholds to be exceeded.

The proposed Project's TAC emissions and health risk potential are primarily associated with the diesel particulate matter (DPM) emissions from the diesel-fueled off-road and on-road engines. The emissions of acutely hazardous pollutants from proposed Project emissions sources are negligible, so the primary potential health risk would be related to the carcinogenic and chronic risks from DPM exposure. Sensitive receptors are located nearby both construction and operation emissions areas. The implementation Mitigation Measure AQ-1 and environmental commitment EC AQ-1 will substantially reduce construction DPM emissions, and implementation of Mitigation Measure AQ-2 requiring Tier 4 compliant off-road equipment will reduce operation DPM emissions to the maximum feasible extent. However, there are nearby sensitive receptors, that are also in the predominate downwind direction from the construction and operation activities, so there is the potential that the proposed Project's DPM emissions could cause significant health risk impacts, specifically cancer risk impacts. Therefore, the proposed Project's TAC emissions health impacts could be above SCAQMD significance thresholds shown in Table 4.3-2. ECs and Mitigation Measures Applicable to Impact AQ-6.

ECs and Mitigation Measures Applicable to Impact AQ-6EC AQ-1 (Concrete Batch Plant)

See Impacts AQ-2 for the complete text of the following mitigation measure:

MM AQ-1 (Construction Off-Road Equipment Engines)

MM AQ-2 Operation Off-Road Equipment Engines. The CVWD shall require the use of full Tier 4 engines for all diesel-fueled off-road equipment engines that are 50 horsepower or greater.

CEQA Significance Conclusion

With implementation of EC AQ-1 and Mitigation Measures AQ-1 and AQ-2 the TAC emissions during construction and operation would be substantially reduced. However, given the size of the project and the short distance to sensitive receptors, the proposed Project's TAC emissions health risk could be above the SCAQMD significance thresholds (see Table 4.3-2). TAC emissions health risk impacts would be significant and unavoidable (Class I).

Impact AQ-7: Project earthmoving activities could significantly increase the incidence of Valley Fever.

The proposed Project's construction would require the excavation of a large amount of material, which could cause the *Coccidioides immitis* spores that cause Valley Fever, if present, to become airborne. Additionally, operation of the proposed Project would require regular sand removal to maintain the Reach 3 and 4 channels. However, as noted in Section 3.3, the incidence rate for Valley Fever throughout Riverside County is comparatively low, and the Project area is not known to have higher Valley Fever incidence rates than the county average. Additionally, the Project would be required to control fugitive dust emissions to comply with SCAQMD Rule 403 and 403.1 large operation/Coachella Blowsand Zone mitigation requirements during construction, and Coachella Blowsand Zone mitigation requirements during operation.

CEQA Significance Conclusion

With the low incident rate for Valley Fever throughout Riverside County and implementation of regulatory fugitive dust mitigation measures, the proposed Project's Valley Fever impacts would be less than significant (Class III).

Creates objectionable odors affecting a substantial number of people (Criterion AQ4).

Impact AQ-8: Project construction or operation could create substantial nuisance odors.

The construction and operation of the proposed Project does not include the use of significantly malodorous (unpleasant smelling) substances or activities that could cause significant odors. There may be minor odors during construction related to equipment exhaust, asphalt paving operations, and roadway architectural coating; but none of these odor sources would be overly objectionable and they would not persist in a manner to be able to affect a substantial number of people. Project operation would not have any strong odor sources.

CEQA Significance Conclusion

Considering the types of activities occurring during construction and O&M, the expected duration of activities, and the proximity and quantity of people in the vicinity, the proposed Project would not create a substantial amount of nuisance odors. Impacts would be less than significant (Class III).

Greenhouse Gas Emissions

Generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment (Criterion GHG1).

Impact GHG-1: The Project could produce GHG emissions that exceed the SCAQMD CO_2e annualized significance threshold.

GHG emissions, unlike criteria pollutant emissions, are estimated for all Project phases and totaled prior to comparison with the emissions significance threshold. The direct construction emissions were estimated based on fuel consumption determined from the on-road vehicle and off-road equipment use estimates for construction and operation, the indirect emissions from water use during construction and operation, and electricity use during construction. The specific assumptions and emissions factors are presented in Appendix B.1. No offsets for the reduction in current sand removal activities were included in the estimate. Table 4.3-6 provides the estimated direct and indirect construction and operation GHG emissions for the proposed Project.

Table 4.3-6. Greenhouse Gas Emissions – Proposed Project	
Construction Emissions Source	**GHG Emissions (Tons CO_2e)**
On-road Vehicles	3,099
Off-road Equipment	2,704
Water Use	719
Electricity Use	156
Subtotal	**6,678**
Amortized Annual Construction Emissions [1]	134
Operation Emissions Source	
On-road Vehicles	75
Off-road Equipment	67
Water Use	8
Subtotal	**150**
Total	**284**
GHG Emissions Significance Threshold	3,000
Exceeds Thresholds?	*No*

Source: Appendix B.1; County of Riverside, 2019
Notes: Amortized emissions are the operation emissions plus the annualized construction emissions over the Project life (50 years for this type of infrastructure project).

The proposed Project's annual GHG emissions, shown above Table 4.3-6, is over an order of magnitude below the SCAQMD GHG emissions significance threshold.

CEQA Significance Conclusion

The Project's GHG emissions would be below the SCAQMD GHG emissions thresholds (see Table 4.3-6). GHG emissions impacts would be less than significant (Class III).

Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions (Criterion GHG2).

Impact GHG-2: The Project could conflict with State and local GHG emissions reduction plans.

A summary of the proposed Project's compliance with potentially applicable GHG plans, policies, and regulations is provided in Table 4.3-7.

Table 4.3-7. Proposed Project Consistency with Applicable Plans, Policies, and Regulations for GHG Emissions		
Adopted Plan, Policy, or Regulation	**Consistency Determination**	**Proposed Project Consistency**
Federal		
40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule.	Not Applicable	The proposed Project would not have emissions sources that would be subject to this regulation.
40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule.	Not Applicable	The proposed Project would not have emissions sources that would be subject to this regulation.
State		
AB 32. Annual GHG Emissions Reporting	Not Applicable	The proposed Project does not include emissions sources that would be subject to this regulation.
AB 32. Cap-and-trade	Not Applicable	The proposed Project does not include emissions sources that would be subject to this regulation.

Table 4.3-7. Proposed Project Consistency with Applicable Plans, Policies, and Regulations for GHG Emissions

Adopted Plan, Policy, or Regulation	Consistency Determination	Proposed Project Consistency
AB 32 Climate Change Scoping Plan	Consistent	The proposed project's GHG emissions sources do not have many applicable project specific policies or measure in the scoping plan. However, the project would be affected by policies, measures, and regulations that have come from this plan that indirectly affect project emissions, such as the Low Carbon Fuel Standard. Additionally, construction waste recycling environmental commitment EC GHG-1 would be consistent with waste reduction policies and measures in this plan.
Local		
SCAQMD Rules 2701 and 2702	Not Applicable	The proposed Project is not proposing a GHG emissions reduction project.
Riverside County Climate Action Plan (Riverside County, 2019)	Consistent	Very few of the GHG emissions reduction measures contained in this plan are directly applicable to the proposed Project, but the Project's on-site re-use of excavated materials and implementation of the construction waste recycling environmental commitment EC GHG-1 would be consistent with the waste reduction/recycling policy R2-S1: Reduce Waste to Landfills.

The Office of the California Attorney General maintains a website that addresses mitigation for GHGs (OAG, 2021). This website provides links to documents that list potential CEQA mitigation measures for global climate change (GHG) impacts. These documents tend to focus on the discussion of measures that are recommended to be added to planning documents, rather than the identification of measures that would be applicable to specific types of development projects. From these documents specific mitigation measures that could be relevant to the proposed Project have been identified and listed in Table 4.3-8. This table identifies the applicability of each strategy and the Project design feature or mitigation measure that is proposed to comply with the applicable strategies.

Table 4.3-8. California GHG Reduction Strategies

Strategy	Project Design/Mitigation to Comply with Strategy
Vehicle Climate Change Standards	These are Air Resource Board (ARB) enforced standards; vehicles that access the proposed Project that are required to comply with the standards would comply with these strategies.
Limit Idling Time for Commercial Vehicles	Project vehicles would be required to comply with ARB idling restriction regulations.
Construction and Demolition Waste Reduction	Construction wastes, specifically asphalt and concrete, would be recycled to the extent feasible per EC GHG-1. Additionally, the majority of proposed Project excavated sand/soils would be reused/recycled onsite to create the constructed earthen levees and soil cement channels. Additionally, the construction design has eliminated the export of the construction excavation materials.
Increase Water Use Efficiency	The proposed Project would only use water as necessary to comply with regulations for dust control during construction and operation and as required for concrete mixing during construction.
Building Energy Efficiency Standards	Not applicable.

Table 4.3-8. California GHG Reduction Strategies	
Strategy	**Project Design/Mitigation to Comply with Strategy**
Appliance Energy Efficiency	Not applicable.
California Solar Initiative	Not applicable.

As shown in Table 4.3-8 the proposed Project would not conflict with applicable State and local GHG emissions reduction plans and policies.

ECs and Mitigation Measures Applicable to Impact GHG-2

EC GHG-1 (Construction Waste Recycling)

CEQA Significance Conclusion

With implementation of EC GHG-1 (Construction Waste Recycling) the proposed Project would not conflict with applicable State and local GHG emission reduction plans and policies. Impacts would be less than significant (Class III).

4.3.2.3 Removal of Reach 2 (Alternative 2)

Direct and Indirect Effects Analysis

The analysis below for Alternative 2 assumes that construction activities would occur on the same schedule as the proposed Project (see Section 2.2.2), except for the construction of Reach 2 which would not occur. The analysis also assumes that O&M activities associated with Alternative 2 would be same as the proposed Project (see Section 2.2.3), except that sand removal activities would not occur along Reach 2.

Air Quality

Conflict with or Obstruct Implementation of the applicable air quality plan (Criterion AQ1).

Impact AQ-1: The Project could conflict with approved ambient air quality plans.

Alternative 2 would be in the same region as the proposed Project, under the jurisdiction of the SCAQMD. As discussed above for the proposed Project, the SCAQMD adopts AQMP control measures into the SCAQMD rules and regulations, which are then used to regulate sources of air pollution in the SSAB. Alternative 2 would comply with these regulatory requirements, including all SCAQMD rules and regulations. Furthermore, Alternative 2 would reduce the Project emissions with the elimination of Reach 2. Therefore, Alternative 2's emissions sources would meet or exceed the emissions control forecasts for all approved AQMP control measures.

Like the proposed Project, because the AQMP assumes growth that is consistent with Alternative 2, it would not exceed the future growth projections in the AQMP, and it would not conflict with or obstruct implementation of the SIP. As a result, construction and operation of Alternative 2 would conform to the applicable AQMP.

CEQA Significance Conclusion

The SCAQMD AQMP assumes growth that is consistent with the implementation of Alternative 2. Impacts would be less-than-significant (Class III).

Results in 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 (Criterion AQ2).

Impact AQ-2: Project construction emissions could exceed SCAQMD regional significance thresholds.

Alternative 2 would eliminate construction of Reach 2 and would not introduce new construction elements. The maximum daily emissions for the proposed Project were determined to occur during the Reach 3 channel construction over a five-day construction task overlap period when Reach 3 and Reach 4 are constructed. Under Alternative 2, Reach 3 would still be constructed in the same timeline and design as the proposed Project. As such, pollutant emissions related to Alternative 2's construction activities would essentially be the same as the proposed Project. As shown in Table 4.3-3, the maximum daily emissions have been determined to exceed the SCAQMD regional emissions thresholds for NO_x and PM10. Appendix B.1 provides more detailed estimates by construction task.

ECs and Mitigation Measures Applicable to Impact AQ-2

EC AQ-1 (Concrete Batch Plant)

See Impact AQ-2 for the complete text of the following mitigation measure:

MM AQ-1 (Construction Off-Road Equipment Engines)

CEQA Significance Conclusion

Mitigation Measure AQ-1 would reduce the fleet average off-road equipment NO_x emissions which likely reduces the maximum daily NO_x emissions below the SCAQMD significance threshold. However, fugitive dust control measures required for compliance with SCAQMD Rule 403 and 403.1, which include the extensive use of water and non-toxic chemical stabilizers along with many other required control measures, would not effectively reduce the PM10 fugitive dust emissions. As such, Alternative 2's maximum daily PM10 emissions during construction, which would essentially be the same as the proposed Project (see Table 4.3-3), would remain above the SCAQMD regional emissions significance threshold. Construction regional emissions impacts would be significant and unavoidable (Class I).

Impact AQ-3: Project operation emissions could exceed SCAQMD regional significance thresholds.

As explained for the proposed Project, the incremental O&M emissions cannot be calculated due to unavailable information regarding the current baseline sand removal activities that would not be required after implementation of Alternative 2. Therefore, the entire O&M activity emissions have been compared with the SCAQMD regional significance thresholds. The O&M activities consist of regular removal of sand deposition in the Reach 3 and Reach 4 channels, and as needed, occasional sediment removal from all reaches after major storm events. It is anticipated that O&M activities would be slightly less due to the elimination of occasional sediment removal from Reach 2, as Reach 2 would not be constructed. However, the worst-case daily O&M emissions are anticipated to be the same as the proposed Project, as shown in Table 4.3-4.

CEQA Significance Conclusion

Alternative 2's operation regional emissions would not exceed the SCAQMD regional significance thresholds (see Table 4.3-4). Impacts would be less than significant (Class III).

The Project exposes sensitive receptors to substantial pollutant concentrations (Criterion AQ3).

Impact AQ-4: Project construction emissions could exceed SCAQMD Localized Significance Thresholds.

As discussed above under Section 4.3.2.1 (Thresholds of Significance), SCAQMD LSTs are used to determine if a project could exceed ambient air quality thresholds for nearby receptors. The appropriate LSTs for proposed Project site construction are shown above in Table 4.3-2. The maximum daily construction emissions are shown in Table 4.3-3. These emissions would occur during the overlap between Reach 3 and Reach 4 construction periods. This overlap would also occur under Alternative 2.

The maximum daily on-site CO emissions would not exceed the CO SCAQMD LSTs regardless of receptor location or construction task. The unmitigated NO_x emission could exceed the LSTs for receptors within 50 meters of the major construction element tasks, such as the various levee and channel construction tasks; however, after implementation of Mitigation Measure AQ-1 the localized NO_x emissions would drop below the LST for all receptor locations. The controlled PM10 emissions, which assume stringent Rule 403 and 403.1 mitigation measure compliance, would have the potential to exceed the SCAQMD LSTs for PM10 and PM2.5 for receptors as far as 200 to 500 meters from the levee and channel construction work sites. This means that areas surrounding each of the three reaches would have receptors temporarily impacted by construction PM10 and PM2.5 fugitive dust emissions.

ECs and Mitigation Measures Applicable to Impact AQ-4

See Impact AQ-2 for the complete text of the following mitigation measure:

MM AQ-1 (Construction Off-Road Equipment Engines)

CEQA Significance Conclusion

With implementation of Mitigation Measure AQ-1, localized NOx emissions would be below the LST for all receptor locations. However, the Alternative 2's maximum daily localized PM10 and PM2.5 emissions during construction would remain above the SCAQMD LST emissions significance thresholds at various locations and times during construction because the worst day under the proposed Project would also occur under Alternative 2, during the Reach 3 and 4 overlap. As such, Alternative 2 construction localized emissions impacts would be significant and unavoidable (Class I).

Impact AQ-5: Project operation emissions could exceed SCAQMD Localized Significance Thresholds.

Like the proposed Project, the worst-case work location during Alternative 2's O&M sand clean-up operation would be associated with the sand removal activities in the Reach 3 and Reach 4 channels. The distance from the Reach 3 channel to the Xavier College Preparatory High School and the Reach 4 channel to the nearest Sun City residence would both be approximately 100 meters. The appropriate LSTs for this receptor distance are compared to the maximum localized on-site daily O&M emissions in Table 4.3-5 above. As shown in Table 4.3-5, the worst-case localized emissions for O&M are all below the appropriate SCAQMD LSTs.

CEQA Significance Conclusion

As shown in Table 4.3-5, the worst-case localized O&M emissions for Alternative 2 would be below the LST for all receptor locations. O&M localized emissions impacts would be less than significant (Class III).

Impact AQ-6: Project toxic air contaminant emissions could cause SCAQMD health risk thresholds to be exceeded.

TAC emissions and health risk potential under Alternative 2 would essentially be the same as the proposed Project. As with the proposed Project, the emissions of acutely hazardous pollutants from emissions sources are negligible, so the primary potential health risk would be related to the carcinogenic and chronic risks from DPM exposure. Sensitive receptors are located nearby both construction and operation emissions areas. The implementation Mitigation Measure AQ-1 and environmental commitment EC AQ-1 will substantially reduce construction DPM emissions, and implementation of Mitigation Measure AQ-2 requiring Tier 4 compliant off-road equipment will reduce operation DPM emissions to the maximum feasible extent. However, there are nearby sensitive receptors, that are also in the predominate downwind direction from the construction and operation activities, so there is the potential that the project's DPM emissions could cause significant health risk impacts, specifically cancer risk impacts. Therefore, Alternative 2's TAC emissions health impacts could be above SCAQMD significance thresholds shown in Table 4.3-2.

ECs and Mitigation Measures Applicable to Impact AQ-6

EC AQ-1 (Concrete Batch Plant)

See Impact AQ-2 for the complete text of the following mitigation measure:

MM AQ-1 (Construction Off-Road Equipment Engines)

See Impact AQ-6 for the complete text of the following mitigation measure:

MM AQ-2 (Operation Off-Road Equipment Engines)

CEQA Significance Conclusion

With implementation of EC AQ-1 and Mitigation Measures AQ-1 and AQ-2 the TAC emissions during construction and operation of Alternative 2 would be substantially reduced. However, given the size of the project and the short distance to sensitive receptors, the TAC emissions health risk could be above the SCAQMD significance thresholds (see Table 4.3-2). TAC emissions health risk impacts would be significant and unavoidable (Class I).

Impact AQ-7: Project earthmoving activities could significantly increase the incidence of Valley Fever.

Alternative 2's construction would require the excavation of a large amount of material, which could cause the *Coccidioides immitis* spores that cause Valley Fever, if present, to become airborne. Additionally, operation of Alternative 2 would require regular sand removal. However, as noted in Section 3.3, the incidence rate for Valley Fever throughout Riverside County is comparatively low, and the Project area is not known to have higher Valley Fever incidence rates than the county average. Additionally, fugitive dust emissions control would be required to comply with SCAQMD Rule 403 and 403.1 large operation/ Coachella Blowsand Zone mitigation requirements during construction, and Coachella Blowsand Zone mitigation requirements during operation.

CEQA Significance Conclusion

With the low incident rate for Valley Fever throughout Riverside County and implementation of regulatory fugitive dust mitigation measures, Alternative 2's Valley Fever impacts would be less than significant (Class III).

Result in other emissions (such as those leading to odors) affecting a substantial number of people (Criterion AQ4).

Impact AQ-8: Project construction or operation could create substantial nuisance odors.

The construction and operation of Alternative 2 does not include the use of significantly malodorous (unpleasant smelling) substances or activities that could cause significant odors. There may be minor odors during construction related to equipment exhaust, asphalt paving operations, and roadway architectural coating, same as the proposed Project; but none of these odor sources would be overly objectionable and they would not persist in a manner to be able to affect a substantial number of people. Project operation would not have any strong odor sources.

CEQA Significance Conclusion

Considering the types of activities occurring during construction and O&M, the expected duration of activities, and the proximity and quantity of people in the vicinity, Alternative 2 would not create a substantial amount of nuisance odors. Impacts would be less than significant (Class III).

Greenhouse Gas Emissions

Generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment (Criterion GHG1).

Impact GHG-1: The Project could produce GHG emissions that exceed the SCAQMD CO_2e annualized significance threshold.

GHG emissions, unlike criteria pollutant emissions, are estimated for all Project phases and totaled prior to comparison with the emissions significance threshold. Table 4.3-6 provides the estimated direct and indirect construction and operation GHG emissions for the proposed Project, which are an order of magnitude below the SCAQMD GHG emissions significance threshold. Alternative 2 would further reduce emissions due to the elimination of Reach 2.

CEQA Significance Conclusion

Alternative 2's GHG emissions would the same or less than the proposed Project with the elimination of Reach 2 and were found to be below the SCAQMD GHG emissions thresholds (see Table 4.3-6). GHG emissions impacts would be less than significant (Class III).

Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions (Criterion GHG2).

Impact GHG-2: The Project could conflict with State and local GHG emissions reduction plans.

A summary of the proposed Project's compliance with potentially applicable GHG plans, policies, and regulations is provided in Table 4.3-7. From these documents, specific mitigation measures that could be relevant have been identified and listed in Table 4.3-8. As shown in Table 4.3-8 the proposed Project would not conflict with applicable State and local GHG emissions reduction plans and policies. Implementation of Alternative 2 would not introduce any new project elements which could conflict with policies or plans. The elimination of Reach 2 would reduce the GHG emissions which may occur during construction or O&M.

ECs and Mitigation Measures Applicable to Impact GHG-2

EC GHG-1 (Construction Waste Recycling)

CEQA Significance Conclusion

With implementation of EC GHG-1 (Construction Waste Recycling) Alternative 2 would not conflict with applicable State and local GHG emission reduction plans and policies. Impacts would be less than significant (Class III).

4.3.2.4 Modified Reach 3 (Alternative 3)

The analysis below for Alternative 3 (Option A or B) assumes that construction activities would occur on the same schedule as the proposed Project (see Section 2.2.2), as the realignment of Reach 3 would not noticeably affect the schedule. The analysis also assumes that O&M activities associated with Alternative 3 would be same the proposed Project (see Section 2.2.3).

Direct and Indirect Effects Analysis

Conflict with or Obstruct Implementation of the applicable air quality plan (Criterion AQ1).

Impact AQ-1: The Project could conflict with approved ambient air quality plans.

Alternative 3 would be in the same region as the proposed Project, under the jurisdiction of the SCAQMD. As discussed above for the proposed Project, the SCAQMD adopts AQMP control measures into the SCAQMD rules and regulations, which are then used to regulate sources of air pollution in the SSAB. Alternative 3 would comply with these regulatory requirements, including all SCAQMD rules and regulations. Therefore, Alternative 3's emissions sources would meet or exceed the emissions control forecasts for all approved AQMP control measures.

Like the proposed Project, because the AQMP assumes growth that is consistent with Alternative 3, it would not exceed the future growth projections in the AQMP, and it would not conflict with or obstruct implementation of the SIP. As a result, construction and operation of Alternative 3 would conform to the applicable AQMP.

CEQA Significance Conclusion

The SCAQMD AQMP assumes growth that is consistent with the implementation of Alternative 3. Impacts would be less-than-significant (Class III).

Results in 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 (Criterion AQ2).

Impact AQ-2: Project construction emissions could exceed SCAQMD regional significance thresholds.

The maximum daily emissions for the proposed Project were determined to occur during the Reach 3 channel construction over a five-day construction task overlap period when Reach 3 and Reach 4 are constructed. Alternative 3 would alter the alignment of the levee portion of Reach 3, however the channelized portion would be constructed the same as the proposed Project. As such, pollutant emissions related to Alternative 3's construction activities would essentially be the same as the proposed Project. As shown in Table 4.3-3, the maximum daily emissions have been determined to exceed the SCAQMD regional

emissions thresholds for NO_x and PM10. Appendix B.1 provides more detailed estimates by construction task.

ECs and Mitigation Measures Applicable to Impact AQ-2

EC AQ-1 (Concrete Batch Plant)

See Impact AQ-2 for the complete text of the following mitigation measure:

MM AQ-1 (Construction Off-Road Equipment Engines)

CEQA Significance Conclusion

Mitigation Measure AQ-1 would reduce the fleet average off-road equipment NO_x emissions which likely reduces the maximum daily NO_x emissions below the SCAQMD significance threshold. However, fugitive dust control measures required for compliance with SCAQMD Rule 403 and 403.1 would not effectively reduce the PM10 fugitive dust emissions. As such, Alternative 3's maximum daily PM10 emissions during construction, which would essentially be the same as the proposed Project (see Table 4.3-3), would remain above the SCAQMD regional emissions significance threshold. Construction regional emissions impacts would be significant and unavoidable (Class I).

Impact AQ-3: Project operation emissions could exceed SCAQMD regional significance thresholds.

As explained for the proposed Project, the incremental O&M emissions cannot be calculated due to unavailable information regarding the current baseline sand removal activities that would not be required after implementation of Alternative 3. Therefore, the entire O&M activity emissions have been compared with the SCAQMD regional significance thresholds. The O&M activities consist of regular removal of sand deposition in the Reach 3 and Reach 4 channels, and as needed, occasional sediment removal from all reaches after major storm events. It is anticipated that the worst-case O&M emissions under Alternative 3 would be essentially the same as the proposed Project due to the same design for the Reach 3 and Reach 4 channels. The worst-case daily O&M emissions are shown in Table 4.3-4.

CEQA Significance Conclusion

Alternative 3's operation regional emissions would not exceed the SCAQMD regional significance thresholds (see Table 4.3-4). Impacts would be less than significant (Class III).

The Project exposes sensitive receptors to substantial pollutant concentrations (Criterion AQ3).

Impact AQ-4: Project construction emissions could exceed SCAQMD Localized Significance Thresholds

As discussed above under Section 4.3.2.1 (Thresholds of Significance), SCAQMD LSTs are used to determine if a project could exceed ambient air quality thresholds for nearby receptors. The appropriate LSTs for proposed Project site construction are shown above in Table 4.3-2. The maximum daily construction emissions are shown in Table 4.3-4. These emissions would occur during the overlap between Reach 3 and Reach 4 construction periods. This overlap would also occur under Alternative 3.

The maximum daily on-site CO emissions would not exceed the CO SCAQMD LSTs regardless of receptor location or construction task. The unmitigated NO_x emission could exceed the LSTs for receptors within 50 meters of the major construction element tasks, such as the various levee and channel construction tasks; however, after implementation of Mitigation Measure AQ-1 the localized NO_x emissions would drop below the LST for all receptor locations. The controlled PM10 emissions, which assume stringent Rule 403 and 403.1 mitigation measure compliance, would have the potential to exceed the SCAQMD LSTs for

PM10 and PM2.5 for receptors as far as 200 to 500 meters from the levee and channel construction work sites. This means that areas surrounding each of the three reaches would have receptors temporarily impacted by construction PM10 and PM2.5 fugitive dust emissions.

ECs and Mitigation Measures Applicable to Impact AQ-4

See Impact AQ-2 for complete text of the following mitigation measure:

MM AQ-1 (Construction Off-Road Equipment Engines)

CEQA Significance Conclusion

With implementation of Mitigation Measure AQ-1, localized NOx emissions would be below the LST for all receptor locations. However, the Alternative 3's maximum daily localized PM10 and PM2.5 emissions during construction would remain above the SCAQMD LST emissions significance thresholds at various locations and times during construction because the worst day under the proposed Project would also occur under Alternative 3, during the Reach 3 and 4 overlap. As such, Alternative 3 construction localized emissions impacts would be significant and unavoidable (Class I).

Impact AQ-5: Project operation emissions could exceed SCAQMD Localized Significance Thresholds.

Like the proposed Project, the worst-case work location during Alternative 3's O&M sand clean-up operation would be associated with the sand removal activities in the Reach 3 and Reach 4 channels. The distance from the Reach 3 channel to the Xavier College Preparatory High School and the Reach 4 channel to the nearest Sun City residence would both be approximately 100 meters. The appropriate LSTs for this receptor distance are compared to the maximum localized on-site daily O&M emissions in Table 4.3-5 above. As shown in Table 4.3-5, the worst-case localized emissions for O&M are all below the appropriate SCAQMD LSTs.

CEQA Significance Conclusion

As shown in Table 4.3-5, the worst-case localized O&M emissions for Alternative 3 would be below the LST for all receptor locations. O&M localized emissions impacts would be less than significant (Class III).

Impact AQ-6: Project toxic air contaminant emissions could cause SCAQMD health risk thresholds to be exceeded.

TAC emissions and health risk potential under Alternative 3 would essentially be the same as the proposed Project. As with the proposed Project, the emissions of acutely hazardous pollutants from emissions sources are negligible, so the primary potential health risk would be related to the carcinogenic and chronic risks from DPM exposure. Sensitive receptors are located nearby both construction and operation emissions areas. The implementation Mitigation Measure AQ-1 and environmental commitment EC AQ-1 will substantially reduce construction DPM emissions, and implementation of Mitigation Measure AQ-2 requiring Tier 4 compliant off-road equipment will reduce operation DPM emissions to the maximum feasible extent. However, there are nearby sensitive receptors, that are also in the predominate downwind direction from the construction and operation activities, so there is the potential that the project's DPM emissions could cause significant health risk impacts, specifically cancer risk impacts. Therefore, Alternative 2's TAC emissions health impacts could be above SCAQMD significance thresholds shown in Table 4.3-2.

ECs and Mitigation Measures Applicable to Impact AQ-6

EC AQ-1 (Concrete Batch Plant)

See Impact AQ-2 for complete text of the following mitigation measure:

MM AQ-1 (Construction Off-Road Equipment Engines)

See Impact AQ-6 for complete text of the following mitigation measure:

MM AQ-2 (Operation Off-Road Equipment Engines)

CEQA Significance Conclusion

With implementation of EC AQ-1 and Mitigation Measures AQ-1 and AQ-2 the TAC emissions during construction and operation of Alternative 3 would be substantially reduced. However, given the size of the project and the short distance to sensitive receptors, the TAC emissions health risk could be above the SCAQMD significance thresholds (see Table 4.3-2). TAC emissions health risk impacts would be significant and unavoidable (Class I).

Impact AQ-7: Project earthmoving activities could significantly increase the incidence of Valley Fever.

Alternative 3's construction would require the excavation of a large amount of material, which could cause the *Coccidioides immitis* spores that cause Valley Fever, if present, to become airborne. Additionally, operation of Alternative 3 would require regular sand removal. However, as noted in Section 3.3, the incidence rate for Valley Fever throughout Riverside County is comparatively low, and the Project area is not known to have higher Valley Fever incidence rates than the county average. Additionally, fugitive dust emissions control would be required to comply with SCAQMD Rule 403 and 403.1 large operation/ Coachella Blowsand Zone mitigation requirements during construction, and Coachella Blowsand Zone mitigation requirements during operation.

CEQA Significance Conclusion

With the low incident rate for Valley Fever throughout Riverside County and implementation of regulatory fugitive dust mitigation measures, Alternative 3's Valley Fever impacts would be less than significant (Class III).

Result in other emissions (such as those leading to odors) affecting a substantial number of people (Criterion AQ4).

Impact AQ-8: Project construction or operation could create substantial nuisance odors.

The construction and operation of Alternative 3 does not include the use of significantly malodorous (unpleasant smelling) substances or activities that could cause significant odors. There may be minor odors during construction related to equipment exhaust, asphalt paving operations, and roadway architectural coating, same as the proposed Project; but none of these odor sources would be overly objectionable and they would not persist in a manner to be able to affect a substantial number of people. Project operation would not have any strong odor sources.

CEQA Significance Conclusion

Considering the types of activities occurring during construction and O&M, the expected duration of activities, and the proximity and quantity of people in the vicinity, Alternative 3 would not create a substantial amount of nuisance odors. Impacts would be less than significant (Class III).

Greenhouse Gas Emissions

Generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment (Criterion GHG1).

Impact GHG-1: The Project could produce GHG emissions that exceed the SCAQMD CO_2e annualized significance threshold.

GHG emissions, unlike criteria pollutant emissions, are estimated for all Project phases and totaled prior to comparison with the emissions significance threshold. Table 4.3-6 provides the estimated direct and indirect construction and operation GHG emissions for the proposed Project, which are an order of magnitude below the SCAQMD GHG emissions significance threshold. The realignment of the Reach 3 levee under Alternative 3 would not substantially alter the proposed Project emissions, although slightly less O&M activities along Reach 3 may be required as the levee would be further away from the wind corridor.

CEQA Significance Conclusion

Alternative 3's GHG emissions would be the same or less than the proposed Project with the realignment of Reach 3 and were found to be below the SCAQMD GHG emissions thresholds (see Table 4.3-6). GHG emissions impacts would be less than significant (Class III).

Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions (Criterion GHG2).

Impact GHG-2: The Project could conflict with State and local GHG emissions reductions plans.

A summary of the proposed Project's compliance with potentially applicable GHG plans, policies, and regulations is provided in Table 4.3-7. From these documents, specific mitigation measures that could be relevant have been identified and listed in Table 4.3-8. As shown in Table 4.3-8, the proposed Project would not conflict with applicable State and local GHG emissions reduction plans and policies. The realignment of Reach 3 under Alternative 3 would not introduce any new project elements which could conflict with policies or plans.

ECs and Mitigation Measures Applicable to Impact GHG-2

EC GHG-1 (Construction Waste Recycling)

CEQA Significance Conclusion

With implementation of EC GHG-1 (Construction Waste Recycling) Alternative 3 would not conflict with applicable State and local GHG emission reduction plans and policies. Impacts would be less than significant (Class III).

4.3.2.5 No Action (Alternative 4)

Direct and Indirect Effects Analysis

Under the No Action Alternative, Project construction would not occur and flood risk to the area would remain. Flood protection to the developed areas within the FEMA-designated Flood Hazard Area would not be provided. Therefore, no emissions would be generated by any Project-related activities. In the event of catastrophic flooding, repair and/or construction activities and related truck trips are expected to occur which may result in an increase in pollutant emissions. However, it is unknown to what extent or when they would occur.

4.3.3 Impact Summary — Air Quality and GHG

Table 4.3-9 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to air quality and GHG. Refer to Section 4.3.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures, and Table 2-4 for the full text of the environmental commitments.

Table 4.3-9. Summary of Impacts and Mitigation Measures – Air Quality and GHG

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
AQ-1: The Project could conflict with approved ambient air quality plans.	Class III	Class III	Class III	None required.
AQ-2: Project construction emissions could exceed SCAQMD regional significance thresholds.	Class I	Class I	Class I	EC AQ-1 (Concrete Batch Plant) MM AQ-1 (Construction Off-road Equipment Engines)
AQ-3: Project operation emissions could exceed SCAQMD regional significance thresholds.	Class III	Class III	Class III	None required.
AQ-4: Project construction emissions could exceed SCAQMD Localized Significance Thresholds.	Class I	Class I	Class I	MM AQ-1 (Off-road Equipment Engines)
AQ-5: Project operation emissions could exceed SCAQMD Localized Significance Thresholds.	Class III	Class III	Class III	None required.
AQ-6: Project toxic air contaminant emissions could cause SCAQMD health risk thresholds to be exceeded.	Class I	Class I	Class I	EC AQ-1 (Concrete Batch Plant) MM AQ-1 (Construction Off-road Equipment Engines) MM AQ-2 (Operation Off-road Equipment Engines)
AQ-7: Project earthmoving activities could significantly increase the incidence of Valley Fever.	Class III	Class III	Class III	None required.
AQ-8: Project construction or operation could create substantial nuisance odors.	Class III	Class III	Class III	None required.
GHG-1: The Project could produce GHG emissions that exceed the SCAQMD CO_2e annualized significance threshold.	Class III	Class III	Class III	None required.
GHG-2: The Project could conflict with State and Local GHG emissions reduction plans.	Class III	Class III	Class III	EC GHG-1 (Construction Waste Recycling)

N/A: Not Applicable

Class I: Significant impact; cannot be mitigated to a level that is not significant. A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: Significant impact; can be mitigated to a level that is not significant. A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: Adverse; less than significant. A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: Beneficial impact. A Class IV impact represents a beneficial effect that would result from project implementation.

4.4 Topography, Geology, and Soils

Presented within this section are potential topography, geology, soils, and mineral resources impacts associated with construction and O&M of the Project and alternatives. Refer to Section 3.4.1 for a description of the existing topography, geology, soils, and minerals environment, and Section 3.4.2 for the regulatory framework applicable to the Project.

4.4.1 Scoping Issues Addressed

There were no topography, geology, soils, or minerals issues identified during the public scoping period. See Appendix A (Public Scoping) for a summary of issues relevant to the Project raised during the scoping process.

4.4.2 Environmental Consequences

Significance Criteria. To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the proposed Project and alternatives. Appropriate criteria have been identified and utilized to make these significance conclusions. The following significance criteria for topography, geology, soils, and minerals were derived Appendix G of the CEQA Guidelines. In addition, the following list includes significance criteria that were used in the 2000 Final EIS/EIR for the original alignment of the Project (USACE, 2000). Although this EIR/EIS is a stand-alone document, the 2000 Final EIS/EIR criteria were crafted by the U.S. Army Corps of Engineers (USACE) Planning Division (the NEPA Lead Agency at that time) specifically for the Project and are therefore considered applicable to the current Project. Impacts are considered significant if the proposed Project or alternatives would:

- **Criterion G1:** Expose people or structures to the potential for substantial adverse effects that could not be overcome by best management practices or project design features, where such effects include the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault, refer to Division of Mines and Geology Special Publication 42,
  - Strong seismic ground shaking,
  - Seismic-related ground failure, including liquefaction, and/or
  - Landslides.
- **Criterion G2:** Result in substantial soil erosion or the loss of topsoil or increase on- or off-site erosion from wind or water.
- **Criterion G3:** Substantially alter topography beyond that resulting from natural erosion and deposition.
- **Criterion G4:** 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.
- **Criterion G5:** Be located on expansive soils creating substantial risks to life or property.
- **Criterion G6:** Result in the loss of availability of a known or locally important mineral resource that would be of value to the region and the residents of the State, delineated on a local general plan, specific plan or other land use plan.

It has been determined that not all of the criteria from Appendix G of the CEQA Guidelines are applicable to the Project. Criterion G7 is not applicable to the proposed Project because the Project does not include installation of a septic tank and would not require wastewater disposal system(s).

- **Criterion G7:** 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.

Impact Assessment Methodology. The impact analysis is based on an assessment of baseline conditions relevant to the site, presented in Section 3.4.1 (Topography, Geology, and Soils – Environmental Baseline), and an assessment of Project-related and alternative-related effects on baseline conditions during Project construction, long-term operation, and long-term maintenance using appropriate technical analysis and the impact significance criteria.

4.4.2.1 Proposed Project (Alternative 1)

Direct and Indirect Effects Analysis

Expose people or structures to substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, ground failure, liquefaction, and/or landslides (Criterion G1).

Branches of the San Andreas fault zone border the Indio Hills and Project area to the northeast and southwest, as shown in Figure 3.4-1 (Fault Map). Table 3.4-1 indicates that strong motion seismic events in the Coachella Valley area have been characterized by events with (Richter) magnitudes of approximately 4.0 to 5.0. The last significant earthquake in the Coachella Valley area was a magnitude 6.4 event in 1948, known as the "Desert Hot Springs Earthquake." As shown on Figure 3.4-1, the proposed Project is not located in an Alquist-Priolo fault zone mapped area, the Project does not cross a fault, and no faults trend towards the proposed Project location. The proposed Project would not involve the construction of housing or large structures which could be damaged during an earthquake and cause damage to other people or structures. The proposed Project would not create any large slopes or be located on any large slopes, which could otherwise expose people or structures to risk from landslides. The proposed Project area consists of generally flat desert washes, bajadas, and alluvial plains such that landslides are not an issue. The proposed Project is located in a moderate liquefaction zone, where significant groundwater could increase the liquefaction potential of the soil. The proposed Project would be constructed in compliance with all applicable regulations including USACE levee standards and the Riverside County General Plan, Building Code. Expansion testing and other measures are required by the current grading and building codes. These codes also require the use of special engineering designs in the event that expansive soils are discovered, such as the use of reinforced steel in foundations, drainage control devices, or over-excavation and backfill of non-expansive soils. The County of Riverside General Plan Safety Element, detailed in Section 3.4.2, has multiple policies regarding construction within liquefaction zones.

Impact G-1: Project structures could be damaged by surface fault rupture and expose people or structures to hazards.

In the event of a major earthquake, surface rupture could occur on either one of the two branches of the San Andreas Fault in the Project area. During the Project's detailed design phase, a geotechnical study would be performed to ensure that the Project is located and designed considering the seismic conditions of the area. In accordance with EC G-1 (Design and Inspect for Major Seismic Event), Project infrastructure would be designed to withstand a major seismic event and inspected for damages immediately following any measurable seismic event. Project structures could be damaged in the event of surface fault rupture, but such damage would be repaired in accordance with EC G-1 and would be highly unlikely to occur at

the same time as a flood event. Damage to Project infrastructure resulting from surface fault rupture would therefore not expose people or structure to substantial hazards.

ECs and Mitigation Measures Applicable to Impact G-1

EC G-1 (Design and Inspect for Major Seismic Event)

CEQA Significance Conclusion

Impacts associated with damage to Project structures resulting from surface fault rupture would be minimized through compliance with EC G-1 (Design and Inspect for Major Seismic Event) and would not result in significant hazard to people or structures. Impacts would not be significant, and no mitigation is required (Class III).

Impact G-2: Project structures could be damaged by seismically induced ground shaking and/or ground failure, exposing people or structures to hazards.

As discussed above under Impact G-1, the proposed Project is located in a seismically active area of southern California and is subject to hazards associated with strong seismic ground shaking and ground failure. The presence of the proposed Project would not alter these hazards in the area, and the Project would not increase or otherwise alter the potential for such hazards to occur. The proposed Project's infrastructure is comprised of levees and channels, which would be designed to withstand seismic hazards per EC G-1 (Design and Inspect for Major Seismic Event). If the structures are damaged or fail as a result of a seismic event, they would be repaired as part of the O&M program. Regular inspection and implementation of EC G-1 would ensure that the structures would function correctly in the event of a flood event and provide the required flood protection. The proposed Project would not expose people or structures to hazards associated with seismically induced ground shaking and/or ground failure.

ECs and Mitigation Measures Applicable to Impact G-2

EC G-1 (Design and Inspect for Major Seismic Event)

CEQA Significance Conclusion

Impacts associated with damage to Project structures resulting from seismically induced ground shaking and/or ground failure would be minimized through compliance with EC G-1 (Design and Inspect for Major Seismic Event) and would not result in significant hazard to people or structures. Impacts would not be significant, and no mitigation is required (Class III).

Result in substantial soil erosion or the loss of topsoil or increase erosion from wind or water (Criterion G2).

Impact G-3: Erosion could be triggered or accelerated due to construction activities.

Ground-disturbing activities that would occur during construction of the proposed Project would introduce the potential for increased soil erosion due to the forces of wind or water, should a storm event occur before disturbed soils are stabilized. Excavation associated with Project infrastructure would loosen soil and trigger or accelerate erosion. The proposed Project would affect federally jurisdictional waters and would disturb more than one acre in total. Therefore, the proposed Project would be required to obtain a Clean Water Act Section 402 NPDES (National Pollutant Discharge Elimination System) Construction General Permit. This General Permit would require preparation of a Stormwater Pollution Prevention Plan (SWPPP), which would include Best Management Practices (BMPs) to prevent and control erosion and sedimentation. Finally, the proposed Project includes ECs that would minimize adverse effects which could otherwise lead to erosion. EC W-2 (Limit Construction During Precipitation Events) would prohibit

construction activities during periods of anticipated or actual precipitation, which would further reduce the potential for ground disturbing activities to result in increased erosion and sedimentation off site.

With implementation of the proposed Project, some sediment flowing from the Indio Hills would be intercepted by Project features and would accumulate adjacent to levees and/or at the sediment basin at the east end of Reach 1, as well as within the channels included as part of Reach 3 and Reach 4; this effect does not represent an increase in erosion, but rather would be a result of impeding natural sediment transport mechanisms. Material that accumulates along the levees and within the channels would be removed several times per year and possibly as often as every other month, depending upon the rate of accumulation within the channels as required by the ECs SM-1 (Sand Removal and Distribution or Disposal) and SM-2 (Adaptive Management Plan). Excavated material that is deemed suitable would be placed on the wind corridor for distribution onto the Preserve, while unsuitable material would be disposed of in an approved facility. These activities would not trigger or accelerate erosion but would facilitate existing aeolian transport patterns to continue distributing blowsand material onto the Preserve.

ECs and Mitigation Measures Applicable to Impact G-3

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

EC W-2 (Limit Construction During Precipitation Events)

CEQA Significance Conclusion

Implementation of the proposed Project would have the potential to trigger or accelerate erosion in the Project area. However, with the implementation of ECs and BMPs as required by the Construction General Permit, and detailed in the required SWPPP, these effects would be minimized or avoided. Potential impacts associated with increased erosion during construction would not be significant (Class III).

Substantially alter topography beyond that resulting from natural erosion and deposition (Criterion G3).

Impact G-4: Project features could alter the existing topography resulting in adverse effects.

By virtue of the Project being for the purposes of flood control, infrastructure introduced under the proposed Project would alter local topography by elevating it in some areas, where levees would be constructed, and by lowering it in other areas, where channels would be implemented. The proposed Project would also result in an approximately two-foot-high spoil area across an approximately 242-acre site. However, this spoil pile would be contoured similar to the existing site topography. O&M of the proposed Project would also result in topographic changes beyond what would result from natural erosion and deposition. The removal of accumulated blowsands and subsequent placement of these blowsands as part of the ongoing maintenance described in Section 2.2.3 would result in an approximately 8-foot-high sand dune. This would also result in a change in local site-specific topography, but this is expected based on the current use of that area. Effects associated with these changes would be generally temporary and site-specific. Construction staging areas would also be located within the Project footprint to minimize potential impacts associated with topographic changes and land disturbance.

CEQA Significance Conclusion

The proposed Project would not result in adverse effects on topography outside of the Project area. The placement of the spoils south of Reach 4 would result in a two-foot elevation of ground level within the region and would be contoured similar to the existing conditions. The placement of the blowsand in the National Wildlife Refuge Blow Sand Augmentation Area would result in an alteration of the local

topography by constructing an approximately 8-foot-high sand dune. However, the purpose of this sand dune would be to distribute blowsand material throughout the Preserve, would be placed in an existing blowsand augmentation area, and it is expected that the dune would diminish with time as a result of existing natural processes (aeolian transport). Implementation of the proposed Project would therefore result in a less-than-significant change to site-specific topography (Class III).

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 (Criterion G4).

The proposed Project would be constructed in compliance with USACE requirements, the Riverside County Building Code, and other applicable construction codes. Expansion testing and mitigation measures are required by the current grading and building codes. These codes also require the use of special engineering designs in the event that unstable soils are discovered, such as the use of reinforced steel in foundations, drainage control devices, or over-excavation and backfill with non-expansive and stable soils. Per the County of Riverside General Plan Safety Element, a geotechnical study would be performed if the proposed Project would be located within a documented and/or susceptible subsidence zone. The Safety Element also has requirements for constructing in potentially unstable soils which would be incorporated into the Project design through the permit process. Implementation of the required construction techniques and BMPs would also reduce the potential for the proposed Project to result in any off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

CEQA Significance Conclusion

As shown in Figure 3.4-3 (Liquefaction), the proposed Project lies within a zone with moderate susceptibility to liquefaction. Prior to construction a detailed geotechnical study would be performed as required by the County of Riverside. The County has design requirements should expansive soils be identified on site, and these would be a condition of the discretionary permits required for the proposed Project to be constructed. Implementation and adherence to EC G-1 (Design and Inspect for a Major Seismic Event) would ensure that the Project design would be capable of withstanding any instability in the soils and prevent soils from becoming unstable as a result of the proposed Project. No impact would occur.

Be located on expansive soil creating substantial risks to life or property (Criterion G5).

Expansive soils have a significant amount of clay particles which can give up water and shrink or take in water and swell. The resulting change in volume exerts stress on buildings and other loads placed on these soils. As discussed under Criterion G4, current grading and building codes require expansion testing and mitigation, if necessary. The International Building Code has been adopted by the State of California. Compliance with this code is an expected part of the permit process, and as required by the code, soil testing would be conducted prior to final design of the proposed Project. Prior to construction of the proposed Project, a detailed geotechnical study would be performed as required by the County of Riverside. The County has design requirements should expansive soils be identified on site, and these would be required as a condition of the discretionary permits required for the proposed Project to be constructed. The design and construction of the proposed Project would also adhere to USACE levee design standards.

CEQA Significance Conclusion

Implementation and adherence to EC G-1 (Design and Inspect for a Major Seismic Event) would ensure that the Project design would be capable of withstanding any instability in the soils and prevent soils from

becoming unstable as a result of the proposed Project. This would ensure that the proposed Project would not be located on expansive soils. No impact would occur.

Result in the loss of availability of a known or locally important mineral resource that would be of value to the region and the residents of the State, delineated on a local general plan, specific plan, or other land use plan (Criterion G6).

As described in Section 3.4, the mineral resources found throughout Riverside County include gold, silver, asbestos, sand, gravel, and other minerals. The Mineral Resources Data System indicates that there are known mineral resources present within less than five miles of the proposed Project.

During construction of the proposed Project, excavated material (approximately 200 feet around permanent Project features) would be used to the maximum extent feasible to construct the levees on Reaches 1 through 3 and the channel embankments on Reaches 3 and 4. It is anticipated that approximately 80 percent of aggregate material required to construct the levees and channels would be obtained from the Project footprint and approximately 20 percent of the material would be obtained from an off-site source. As such, the Project design would allow for the recycle of fill material from areas where excavations are preformed, allowing for a smaller amount of additional material than would otherwise be required. However, the proposed Project would require the use of additional gravel and other material to create soil cement. According to the Mineral Resources Data System, there is one active producer of sand and gravel for construction materials within five miles of the proposed Project site. Section 2.2.2 states that the cement for soil cement, concrete and other uses would be provided by the contractor likely from the nearest supplier. It is anticipated that the purchase and use of these construction materials would not deplete the resources of local suppliers.

CEQA Significance Conclusion

Implementation of the proposed Project would not result in the loss of a known mineral resource that is of value to the region. There are no known mineral resources which would become unavailable as a result of construction of the proposed Project, and the construction would not require the importation of large enough quantities of material that would otherwise exhaust the local supply. With the reuse of fill material taken from the Project excavation, any potential impact on local mineral supply as a result of construction of the proposed project would be avoided. The Riverside County General Plan does not contain any locally important mineral resources which would be list as a result of the proposed Project. No impact on locally important mineral resources would occur.

4.4.2.2 Removal of Reach 2 (Alternative 2)

Direct and Indirect Effects Analysis

Expose people or structures to substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, ground failure, liquefaction, and/or landslides (Criterion G1).

Impact G-1: Project structures could be damaged by surface fault rupture and expose people or structures to hazards.

Impacts would be the same as described above for the proposed Project because Alternative 2 would also be designed, constructed, and maintained in accordance with EC G-1 (Design and Inspect for Major Seismic Event). Project infrastructure would be designed to withstand a major seismic event and inspected for damages immediately following any measurable seismic event. Project structures could be damaged in

the event of surface fault rupture, but such damage would be repaired in accordance with EC G-1. Damage to Project infrastructure resulting from fault rupture would therefore not expose people or structure to substantial hazards.

ECs and Mitigation Measures Applicable to Impact G-1

EC G-1 (Design and Inspect for Major Seismic Event)

CEQA Significance Conclusion

The impacts expected to result from the implementation of Alternative 2 would be similar to those which would be expected from implementation of the proposed Project, but to a less significant degree due to the removal of Reach 2. The impacts of Alternative 2 would be minimized through compliance with EC G-1 (Design and Inspect for Major Seismic Event) and would not result in a significant hazard to people or structures. Impacts would not be significant, and no mitigation is needed (Class III).

Impact G-2: Project structures could be damaged by seismically induced ground shaking and/or ground failure, exposing people or structures to hazards.

Impacts related to Alternative 2 and the potential for structural damage resulting from seismically induced shaking and failure would be the same as described above for the proposed Project. Alternative 2 would be located in a seismically active area of southern California and would be subject to hazards associated with strong seismic ground shaking and ground failure. The presence of Alternative 2 would not alter these hazards in the area and would not increase or otherwise alter the potential for such hazards to occur. Alternative 2 would also be designed, constructed, and maintained in accordance with EC G-1 (Design and Inspect for Major Seismic Event). Project infrastructure would be designed to withstand a major seismic event and inspected for damages immediately following any measurable seismic event. Project structures could be damaged in the event of surface fault rupture, but such damage would be repaired in accordance with EC G-1. Damage to Project infrastructure resulting from fault rupture would therefore not expose people or structure to substantial hazards.

ECs and Mitigation Measures Applicable to Impact G-2

EC G-1 (Design and Inspect for Major Seismic Event)

CEQA Significance Conclusion

Impacts associated with damage to Project structures resulting from seismically induced ground shaking and/or ground failure under Alternative 2 would be similar to those which may result from the proposed Project. The potential impacts would be minimized with implementation of EC G-1 and would be less than significant (Class III).

Result in substantial soil erosion or the loss of topsoil or increase erosion from wind or water (Criterion G2).

Impact G-3: Erosion could be triggered or accelerated due to construction activities.

As discussed above for the proposed Project, implementation of Alternative 2 would affect federally jurisdictional waters and disturb more than one acre in total. Therefore, Alternative 2 would be required to obtain a Clean Water Act Section 402 NPDES Construction General Permit, which would require the preparation of a SWPPP which would include BMPs to prevent and control erosion and sedimentation. Alternative 2 would also include ECs, which would minimize adverse effects which could otherwise lead to erosion. The removal of Reach 2 would decrease the flood protection provided by Alternative 2. This may increase soil erosion throughout the region between Reach 1 and Reach 3 and could expose the SCE

Mirage Substation to flood risk (NHC, 2017). Similar to the proposed Project, Alternative 2 would create an impediment to natural sediment transport mechanisms. The removal of Reach 2 would decrease the natural impediment, though sand removal and distribution on the Preserve would still be required under SM-1 and SM-2.

ECs and Mitigation Measures Applicable to Impact G-3

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

EC W-2 (Limit Construction During Precipitation Events)

CEQA Significance Conclusion

Similar to the proposed Project, implementation of Alternative 2 would have the potential to trigger or accelerate erosion in the Project area, although to a lesser degree due to the reduced Project footprint. However, with the implementation of BMPs as required by the Construction General Permit, and detailed in the required SWPPP, these effects would be minimized or avoided. Potential impacts associated with increased erosion during construction would not be significant (Class III).

Substantially alter topography beyond that which would result from natural erosion and deposition (Criterion G3).

Impact G-4: Project features could alter the existing topography resulting in adverse effects.

Similar to the proposed Project, Alternative 2 would introduce infrastructure which would alter the local topography for the purpose of flood protection. The reduced footprint of this alternative would result in a smaller change in local topography. The effect would be limited to the Project footprint and is intended for beneficial purposes. However, flood protection benefits of this alternative would be less than the proposed Project. In the event of a 100-year flood event, with current levels of protection, the substation would become partially inundated (NHC, 2017). Residences to the southwest are not anticipated to be inundated during a 100-year flood event (NHC, 2017).

Alternative 2 would also result in an approximately two-foot-high spoil area across an approximately 242-acre site, south of Reach 4. This spoil area would be contoured similar to the existing site topography. O&M of Alternative 2 would also result in topographic changes beyond what would result from natural erosion and deposition. The removal of accumulated blowsands and subsequent placement of these blowsands as part of the ongoing maintenance described in Section 2.2.3 would result in an approximately 8-foot-high sand dune. This would also result in a change in local site-specific topography, but this is expected based on the current use of that area. Alternative 2 would have a slightly reduced O&M footprint due to the removal of Reach 2 from the construction footprint.

CEQA Significance Conclusion

Alternative 2 would not result in adverse effects on topography outside of the Project area. The placement of the spoils south of Reach 4 and within the Blow Sand Augmentation Area would result in an alteration of the local topography. The removal of Reach 2 would reduce the impact on local topography by removing the portion of the flood control levee. The implementation of this alternative would result in a less-than-significant impact on local topography by reducing natural erosion and deposition (Class III).

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 (Criterion G4).

Implementation of Alternative 2 would require the same or similar geotechnical testing as the proposed Project, except the Reach 2 area. The geotechnical testing would ensure that Alternative 2 would not be located on any geologic units which would be unstable or could become unstable as a result of Project implementation. Alternative 2 would adhere to EC G-1 (Design and Inspect for a Major Seismic Event).

CEQA Significance Conclusion

A detailed geotechnical study would be performed as required by the County of Riverside, and design requirements incorporated into Alternative 2 should expansive soils be identified. Alternative 2 would also adhere to EC G-1, which would ensure that the proposed reaches would not be located on geologic units or soils which are unstable or which could become unstable as a result of Project implementation. No impact would occur.

Be located on expansive soil creating substantial risks to life or property (Criterion G5).

Implementation of Alternative 2 would require the same or similar geotechnical testing as the proposed Project, except for the Reach 2 area. The geotechnical testing would ensure that Alternative 2 would not be located on expansive soil, as defined by the Uniform Building Code. Alternative 2 would adhere to EC G-1 (Design and Inspect for a Major Seismic Event) in order to avoid these soils.

CEQA Significance Conclusion

As discussed above, to implement Alternative 2 the same or similar geotechnical testing would be performed prior to construction. The geotechnical study would be used to avoid locating the proposed reaches on expansive soils, and no impact from expansive soils would occur with adherence to EC G-1.

Result in the loss of availability of a known or locally important mineral resource that would be of value to the region and the residents of the State, delineated on a local general plan, specific plan or other land use plan (Criterion G6).

Implementation of Alternative 2 would require a smaller amount of excavated material then the proposed Project due to the removal of Reach 2. This would require the excavation and creation of only Reaches 1, 3, and 4. This alternative could also require a smaller amount of gravel and other material due to the reduced need for soil cement. As described in Section 3.4, there are no known mineral resources present within five miles of the Project area. Removal of Alternative 2 would reduce the amount of additional gravel and other materials.

CEQA Significance Conclusion

Implementation of Alternative 2 would not result in the loss of a known mineral resource that is of value to the region. There are no known mineral resources which would become unavailable as a result of construction of Alternative 2, and the construction would not require the importation of large enough quantities of material that would otherwise exhaust the local supply. With the reuse of fill material taken from the Project excavation, any potential impact on local mineral supply as a result of construction of Alternative 2 would be avoided. The Riverside County General Plan does not contain any locally important mineral resources which would be impacted as a result of Alternative 2. No impact on locally important mineral resources would occur.

4.4.2.3 Modified Reach 3 (Alternative 3)

Direct and Indirect Effects Analysis

Expose people or structures to substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, ground failure, liquefaction, and/or landslides (Criterion G1).

Impact G-1: Project structures could be damaged by surface fault rupture and expose people or structures to hazards.

Impacts would be the same as described above for the proposed Project because Alternative 3 would also be designed, constructed, and maintained in accordance with EC G-1 (Design and Inspect for Major Seismic Event). Project infrastructure would be designed to withstand a major seismic event and inspected for damages immediately following any measurable seismic event. Project structures could be damaged in the event of surface fault rupture, but such damage would be repaired in accordance with EC G-1. Damage to Project infrastructure resulting from fault rupture would therefore not expose people or structure to substantial hazards.

ECs and Mitigation Measures Applicable to Impact G-1

EC G-1 (Design and Inspect for Major Seismic Event)

CEQA Significance Conclusion

The impacts expected to result from the implementation of Alternative 3 would be similar to those which would be expected from implementation of the proposed Project. The impacts would be minimized through compliance with EC G-1 (Design and Inspect for Major Seismic Event) and would not result in a significant hazard to people or structures. Impacts would not be significant, and no mitigation is needed (Class III).

Impact G-2: Project structures could be damaged by seismically induced ground shaking and/or ground failure, exposing people or structures to hazards.

Impacts related to Alternative 3 and the potential for structural damage resulting from seismically induced shaking and failure would be the same as described above for the proposed Project. Alternative 3 would be located in a seismically active area of southern California and would be subject to hazards associated with strong seismic ground shaking and ground failure. The presence of Alternative 3 would not alter these hazards in the area and would not increase or otherwise alter the potential for such hazards to occur. Alternative 3 would also be designed, constructed, and maintained in accordance with EC G-1 (Design and Inspect for Major Seismic Event). Project infrastructure would be designed to withstand a major seismic event and inspected for damages immediately following any measurable seismic event. Project structures could be damaged in the event of surface fault rupture, but such damage would be repaired in accordance with EC G-1. Damage to Project infrastructure resulting from fault rupture would therefore not expose people or structure to substantial hazards.

ECs and Mitigation Measures Applicable to Impact G-2

EC G-1 (Design and Inspect for Major Seismic Event)

CEQA Significance Conclusion

Impacts associated with damage to Project structures resulting from seismically induced ground shaking and/or ground failure under Alternative 3 would be similar to those which may result from the proposed

Project. The potential impacts would be minimized with implementation of EC G-1 and would be less than significant (Class III).

Result in substantial soil erosion or the loss of topsoil or increase erosion from wind or water (Criterion G2).

Impact G-3: Erosion could be triggered or accelerated due to construction activities.

As discussed above for the proposed Project, implementation of Alternative 3 would affect federally jurisdictional waters and disturb more than one acre in total. Therefore, Alternative 3 would be required to obtain a Clean Water Act Section 402 NPDES Construction General Permit which would require the preparation of a SWPPP which would include BMPs to prevent and control erosion and sedimentation. Alternative 3 would also include ECs which would minimize adverse effects which could otherwise lead to erosion. Similar to the proposed Project, Alternative 3 would create an impediment to natural sediment transport mechanisms. Sand removal and distribution on the Preserve would be required under SM-1 and SM-2.

ECs and Mitigation Measures Applicable to Impact G-3

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

EC W-2 (Limit Construction During Precipitation Events)

CEQA Significance Conclusion

Similar to the proposed Project, implementation of Alternative 3 would have the potential to trigger or accelerate erosion in the Project area. However, with the implementation of BMPs as required by the Construction General Permit, and detailed in the required SWPPP, these effects would be minimized or avoided. Potential impacts associated with increased erosion during construction would not be significant (Class III).

Substantially alter topography beyond that which would result from natural erosion and deposition (Criterion G3).

Impact G-4: Project features could alter the existing topography resulting in adverse effects.

Similar to the proposed Project, Alternative 3 would introduce infrastructure which would alter the local topography for the purpose of flood projection. The alterations to the location of Reach 3 would result in a similar change in local topography. The effect would be limited to the Project footprint and intended for beneficial purposes. flood protection benefits of this alternative would be similar to the proposed Project.

Alternative 3 would result in an approximately two-foot-high spoil area across an approximately 242-acre site, south of Reach 4. This spoil area would be contoured similar to the existing site topography. O&M of Alternative 3 would also result in topographic changes beyond what would result from natural erosion and deposition. The removal of accumulated blowsands and subsequent placement of these blowsands as part of the ongoing maintenance described in Section 2.2.3 would result in an approximately 8-foot-high sand dune. This would also result in a change in local site-specific topography, but this is expected based on the current use of that area.

CEQA Significance Conclusion

Implementation of Alternative 3 would result in impacts similar to those for the proposed Project. All proposed reaches would be constructed under Alternative 3 and the blowsand would be placed within

the National Wildlife Refuge Blowsand Augmentation Area, similar to the proposed Project. No impacts on topography outside of the proposed Project area would occur. Implementation of this alternative would therefore result in a less-than-significant change to site-specific topography (Class III).

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 (Criterion G4).

Implementation of Alternative 3 would require the same or similar geotechnical testing as the proposed Project, although perhaps in slightly different locations along Reach 3. The geotechnical testing would ensure that Alternative 3 would not be located on any geologic units which would be unstable or could become unstable as a result of Project implementation. Alternative 3 would adhere to EC G-1 (Design and Inspect for a Major Seismic Event) in order to avoid these soils.

CEQA Significance Conclusion

A detailed geotechnical study would be performed as required by the County of Riverside, and design requirements incorporated into Alternative 3 should expansive soils be identified. Alternative 3 would also adhere to EC G-1, which would ensure that the proposed reaches would not be located on geologic units or soils which are unstable, or which could become unstable as a result of Project implementation. No impact would occur.

Be located on expansive soil creating substantial risks to life or property (Criterion G5).

Implementation of Alternative 3 would require the same or similar geotechnical testing as the proposed Project, although perhaps in slightly different locations along Reach 3. The geotechnical testing would ensure that Alternative 3 would not be located on expansive soil, as defined by the Uniform Building Code. Alternative 3 would adhere to EC G-1 (Design and Inspect for a Major Seismic Event) in order to avoid these soils.

CEQA Significance Conclusion

As discussed above, to implement Alternative 3 the same or similar geotechnical testing would be performed prior to construction. The geotechnical study would be used to avoid locating the proposed reaches on expansive soils, and no impact from expansive soils would occur with adherence to EC G-1.

Result in the loss of availability of a known or locally important mineral resource that would be of value to the region and the residents of the State, delineated on a local general plan, specific plan or other land use plan (Criterion G6).

Implementation of Alternative 3 would require a similar amount of excavated material compared to the proposed Project. This alternative would result in the construction of all reaches, though the location of Reach 3 would be slightly shifted depending on the version of Alternative 3 that is selected as the final option. As described in Section 3.4, there are no known mineral resources present within five miles of the Project area.

CEQA Significance Conclusion

Implementation of Alternative 3 would not result in the loss of a known mineral resource that is of value to the region. There are no known mineral resources which would become unavailable as a result of construction of Alternative 3, and the construction would not require the importation of large enough quantities of material that would otherwise exhaust the local supply. With the reuse of fill material taken

from the Project excavation, any potential impact on local mineral supply as a result of construction of Alternative 3 would be avoided. The Riverside County General Plan does not contain any locally important mineral resources which would be impacted as a result of Alternative 3. No impact on locally important mineral resources would occur.

4.4.2.4 No Action (Alternative 4)

Under the No Action Alternative construction and operation of the Project would not occur and potentially catastrophic flooding would continue to threaten the Thousand Palms region. This could result in greater disturbance to geology and soils in the region by exposing people to risk of flood related unstable soils or subsidence. If another project were to be conceived to reduce flooding impacts it is anticipated that measures would be implemented to reduce impacts to topography, geology, and soils, as was done for the Thousand Palms Flood Control Project.

4.4.3 Impact Summary – Topography, Geology, and Soils

Table 4.4-1 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to topography, geology, and soils. Refer to Section 4.4.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures.

Table 4.4-1. Summary of Impacts and Mitigation Measures – Topography, Geology, and Soils

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
G-1: Project structures could be damaged by surface fault rupture and expose people or structures to hazards.	Class III	Class III	Class III	EC G-1 (Design and Inspect for Major Seismic Event)
G-2: Project structures could be damaged by seismically induced ground shaking and/or ground failure, exposing people or structures to hazards.	Class III	Class III	Class III	EC G-1 (Design and Inspect for Major Seismic Event)
G-3: Erosion could be triggered or accelerated due to construction activities.	Class III	Class III	Class III	EC SM-1(Sand Removal and Distribution or Disposal) EC SM-2 (Adaptive Management Plan) EC W-2 (Limit Construction During Precipitation Events)
G-4: Project features could alter the existing topography resulting in adverse effects.	Class III	Class III	Class III	None required.

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.5 Sand Migration

This section describes the potential impacts to sand migration that may occur with construction and O&M of the Project and alternatives. The focus of this analysis is how construction of project features (i.e., levees and channels) may affect sand migration in the wind corridor that supports habitat in the Coachella Valley Preserve (Preserve). This Preserve supports listed plant and wildlife species that are dependent on habitat that is maintained through sand migration. See Sections 3.6 and 4.6 (Biological Resources) of this EIR/EIS for a detailed discussion of these resources. In this EIR/EIS, the terms "sand migration" and "sand transport" are used interchangeably.

4.5.1 Issues Identified During Scoping

Table 4.5-1 below provides a list of sand migration issues raised during the public scoping period for the EIR/EIS (see Appendix A, Public Scoping). Issues are listed by agency or members of the public providing comment. The table also includes a brief discussion the applicability of each issue to the environmental analysis and where that issue is addressed in the EIR/EIS.

Table 4.5-1. Scoping Issues Relevant to Sand Migration

Comment	Consideration in the EIR/EIS
U.S. Fish and Wildlife Service	
Describes sand transport systems in the Project area, referring to previous studies which suggest that historic net loss of active aeolian environments will continue unless the hydrology of watersheds in the Indio Hills region changes. Notes that development encroaching on the sand source/ transport corridor continues to constrain habitat replenishment, and that such impacts cannot be offset through creation of new habitats.	Section 3.5 of the EIR/EIS describes sand transport systems in the Project area and summarizes the results of Project-specific sand studies, including the Lancaster (2015) report. Section 4.5.2 of the EIR/EIS analyzes potential Project impacts to sand migration and proposes mitigation to avoid, minimize, and compensate for impacts.
Suggests that the EIR/EIS should assess the Project's potential to result in the following: alter existing fluvial and aeolian processes that supply sand to the Indio Hills alluvial fan; increase erosion rates; or reduce the rate of sand deposition on the Preserve/Refuge. Suggests that the collection of sand within Project channels would constitute a "loss" and recommends that the EIR/EIS should evaluate how this would affect sand accumulation on the Preserve/Refuge.	Section 4.5.2 of the EIR/EIS analyzes potential Project impacts to sand migration, including effects on sand source areas, fluvial transport, sand supply to the wind corridor, aeolian transport, sand sorting processes, sand deposition, and effects of sand stabilization. The accumulation of sand in the Project's channels is addressed, including means to avoid or minimize the potential loss. Potential impacts to sand deposition on the Preserve are identified and analyzed and mitigation is proposed to avoid, minimize, and compensate for impacts.
Notes that existing fluvial/aeolian studies of the area are more than 15 years old, and recommends that these studies be refined and updated to reflect existing conditions. The commenter also suggests that refined/updated studies incorporate "current methods and refined models" to better characterize sand deposition onto the Preserve/Refuge.	Section 3.5 of the EIR/EIS describes sand transport systems in the Project area and summarizes the results of project-specific sand studies, including the Lancaster (2015) report, which reviews and updates the findings of previous sand migration studies in the Project area.
Suggests that Project alternatives should conserve as much of the alluvial fan areas that currently provide blowsand to the Preserve/Refuge to ensure maintenance of the sensitive species habitat. Suggests that the Project should maintain or increase the amount of fine sands deposited onto the alluvial fan, and expresses that alternatives requiring annual funding, management, and human intervention would not be preferable.	Section 4.5.2 of the EIR/EIS identifies mitigation to maintain sand transport to the Preserve. This mitigation includes Environmental Commitments (ECs) SM-1 (Sand Removal and Distribution or Disposal) and SM-2 (Adaptive Management Plan) and Mitigation Measures SM-1 (Minimize Sand Impacts) and SM-2 (Prepare and Implement a Sand Migration Management Plan) and BIO-19 (Minimize and Mitigate Impacts and Ensure No Net Loss for Jurisdictional Waters).

4.5.2 Environmental Consequences

Significance Criteria. To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the Project and alternatives. Significance criteria presented in Appendix G of the CEQA Guidelines are often used for this purpose; however, Appendix G does not include any criteria relevant to sand migration. The following list has been adapted from significance criteria that were used in the 2000 Final EIS/EIR for the original alignment of the Project (USACE, 2000). Although this EIR/EIS is a stand-alone document, the 2000 Final EIS/EIR criteria were crafted by the U.S. Army Corps of Engineers (USACE) Planning Division (the NEPA Lead Agency at that time) specifically for the Project and are therefore considered applicable to the current Project.

- **Criterion SM1:** Have a measurable effect on the quantity or quality of sand migration onto the Coachella Valley Preserve.
- **Criterion SM2:** Result in stormwater runoff onto blowsand habitat, causing erosion or armoring of blowsand within the Coachella Valley Preserve.
- **Criterion SM3:** Lead to stabilization of sand source(s), including increased vegetation within the wind corridor.

Impact Assessment Methodology. The impact analysis is based on an assessment of baseline conditions relevant to sand migration presented in Section and a review of numerous sand studies conducted for the Coachella Valley an assessment of Project-related and alternative-related effects on sand sources (see Section 3.5.1 Sand Migration – Environmental Baseline). In addition, two studies were conducted by Lancaster in 2015 that provided a review of existing baseline reports used to characterize sand sources and sand migration and to analysis how the construction of the proposed Project would affect the fluvial and aeolian sand transport, sand deposition, and sand habitat during Project construction, operation, and maintenance (Appendix C.1). Impacts to sand-dependent plants and wildlife are addressed in Section 4.6 (Biological Resources).

For the purposes of describing, assessing, and analyzing sand migration, the “Project site” is defined as all permanent and temporary impact areas associated with construction and O&M of the Project. The “Project area” includes all portions of the Project site and any other adjacent or nearby areas, including downwind areas that may be impacted by the Project, including sand sources, the wind corridor, and sand deposition areas.

Description of Direct, Indirect, and Operational Impacts. Direct impacts are defined under CEQA as those that result from a project and occur at the same time and place. Examples of direct impacts related to sand transport include the loss or disruption of sand transport (both fluvially and aeolian processes), the removal of sand sources that support sand transport, and the disruption of the wind corridor. Indirect impacts occur later in time or are farther removed in distance but are reasonably foreseeable and related to the Project. Indirect impacts can include the degradation of sand sources from the placement of permanent structures or by activities that inhibit sand transport such as the spread of non-native weeds or changes in soil or hydrology that harden soil surfaces and adversely affect sand migration.

Operational impacts include both direct and potential indirect impacts. Ongoing O&M impacts would occur during routine inspection and maintenance of levees and channels and would include such activities as routine inspection of Project-related facilities and emergency repairs. The removal of sediment and blow sand would also occur; however, this material would be placed in locations that allow sand transport on to the Preserve. Operational impacts would include weed abatement and vegetation management activities including but not limited to mechanical removal or mowing, hand removal, or herbicide treatment.

Permanent and Temporary Impacts. Permanent impacts include the conversion of land to a new use, such as construction of levees or channels, or long-term or permanent changes in landscape, topography, hydrology, etc. Temporary impacts are of short duration (i.e., 6 to 12 months) and do not result in permanent land use conversion or other changes that would affect sand transport.

4.5.2.1 Proposed Project (Alternative 1)

Direct and Indirect Effects Analysis

Have a measurable effect on the quantity or quality of sand migration onto the Coachella Valley Preserve (Criterion SM1).

Impact SM-1: The Project could affect sand source areas, fluvial transport of sand to source areas, and supply of sand to the wind corridor.

Construction and operation of the proposed Project would not interfere with the natural sand erosion and transport processes that occur in the Indio Hills or on the upper alluvial fans and fan apexes at the base of the Indio Hills. Construction of Reach 1 and 2 would affect alluvial sand deposition within the sand transport corridor in areas below the proposed Reaches (See Figure 3.5-1, Sand Source and Transport Areas). The proposed Project would cross several ephemeral desert dry washes, affecting the existing infrequent storm flows and fluvial sand transport downstream from the proposed levees. The Project would impact approximately 33 acres (95,805 linear feet) of ephemeral desert dry washes (waters of the state and federal waters) within and downstream of the Project footprint (see Section 2.2.1, Project Elements and Section 2.5, Comparison of Alternatives). These ephemeral washes, along with sheet flow through the area, contribute to fluvial sand transport from the Indio Hills to sand source areas that support aeolian transport of sand to the Preserve. However, much of the aeolian sand transport from these areas is currently blocked by urban development. Under the proposed Project, the flow from these washes, as well as sheet flow, would be diverted by levees into the wind corridor.

Sand deposition and transport in this area is currently hindered by existing land uses. Scattered development (See Figure 3.5-1) in the fluvial deposition area partially obstructs fluvial sand transport into the alluvial deposition areas. Flood flows carrying sand that originates in the Indio Hills upslope from Reaches 1 and 2 would be blocked by the Reach 1 and 2 levees just above most of the existing development. However, this would trap sediment that would be lost to the system and the material that accumulates along the levees would be periodically removed during project O&M or would be carried by flood flows southeast toward the downstream end of the levees beyond the existing development.

Sand reaching the downstream end of the levees would be available for subsequent fluvial or aeolian transport to the Preserve. Without the construction of Reach 1 and Reach 2 levees, much of this sand would be carried by fluvial processes into the developed areas where it generally would not be available for further fluvial or aeolian transport. Reach 3 is at the southwest edge of and parallel to the wind corridor and a portion of the northwest end of Reach 3 is within the primary alluvial deposition area that currently supports sand transport to the Preserve. The southeast end of the reach is within the depositional area for aeolian sand transport. Reach 4 is adjacent to the southern boundary of the Preserve and within the depositional area for aeolian sand transport. Reach 3 and Reach 4 levees would be located outside the fluvial deposition areas or at the downslope margin of those areas and would have little or no effect on fluvial sand deposition.

Lancaster (2015) analyzed current sand transport conditions in the Project area and determined that the largest watersheds located northwest of the wind corridor (designated as CP 9 and CP 13 – Gravel Pit

Wash in Lancaster, 2015 – Figure 4) and other watersheds (designated CP 10 – located north between Desert Moon Drive and Via Las Palmas; and CP 12 – located north of Willis Palms Lane) that historically contributed to the sand source for the Preserve area via fluvial transport have been cut off from the wind corridor by urban development (see Figure 3.5-1). Currently, the only watersheds directly contributing sand to the wind corridor are CP 11, 14, and possibly 10. Construction of Reach 1 would redirect water from CP 8 (Edom Hills), 9, 10, and 13 (Gravel Pit Wash) toward the southeast, diverting flow towards Ramon Road and the wind corridor. From there, the flow would be further diverted to the southeast by the Reach 2 and Reach 3 levees, with some localized ponding. As compared to current conditions, this diversion of flow and resulting fluvial transport has the potential to increase the supply of sand moving into the wind corridor (Lancaster, 2015). In summary, the analysis of alluvial and wind sediment transport data indicates that the proposed flood control structures will have a positive effect on sand supply to the dunes and sand sheets that occur in the Preserve Refuge. The Project will increase sand supply by 9 – 14 percent, mainly as a result of the diversion of water and sediment to the east and southeast to the primary sand deposition area by the levee and channel of Reach 1 (Lancaster, 2015).

O&M activities are described in Section 2.2.3 (Project Description) and include periodic removal and distribution or disposal of sand that collects along the Project levees and within the Project channels. Sand that collects along the Project levees and within the Project channels would be regularly removed and suitable sand would be placed within the wind corridor, as stipulated in EC SM-1 (Sand Removal and Distribution or Disposal), where it would be available for aeolian transport to the Preserve. This would ensure that this sand would not be lost from the natural sand transport system.

Sand source areas and fluvial transport could be indirectly affected by the Project since installation of flood control structures would reduce the flood potential and facilitate development on the downstream side of the levees and channels (see Section 4.12, Socioeconomics and Environmental Justice). Additional development is likely to result in increased human use of the area, including off-highway vehicles (OHVs), which could impact sand source areas through disruption and compaction of sand. Other indirect impacts (e.g., introduction and spread of invasive weeds, promotion of surface armoring, etc.) are addressed below under Criterion SM3.

The CVMSHCP requires construction and O&M activities in the Thousand Palms Conservation Area to be conducted in a manner to maintain the fluvial sand transport capacity of the system. During implementation of the proposed Project, the ECs and mitigation measures discussed below would ensure compliance with this requirement.

As designed the proposed Project is not expected to disrupt sand transport to the Preserve and may result in long term benefits by trapping material that would otherwise be lost to the system. However, to ensure that sand supply is maintained in the wind corridor CVWD would implement EC SM-1 (Sand Removal and Distribution or Disposal) to remove sand that collects along Project levees and channels, evaluate the sand for suitability to replenish sand habitat on the Preserve, and place suitable material in the wind corridor where it can be picked up by aeolian transport and deposited on the Preserve. EC SM-1 is intended to avoid or minimize any potential reduction in sand supply to the wind corridor resulting from disruption of sand sources and fluvial transport by the levees and other Project structures.

The implementation of EC SM-2 (Adaptive Management Plan) would work in concert with EC SM-1 to maximize the amount and quality of sand transport onto the Preserve. CVWD would coordinate with Preserve management to assess habitat quality on the Preserve and determine if any changes in removal and distribution of sand are required. Mitigation Measure SM-2 augments EC SM-2 and requires the CVWD to prepare and implement a Sand Migration Management Plan (SMMP) to guide the management

of the sand resource and avoid and minimize impacts to sand and sand transport during the construction and O&M phases of the Project.

ECs and Mitigation Measures Applicable to Impact SM-1

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

MM SM-1 **Minimize Sand Impacts.** This mitigation measure shall apply to the construction and O&M phases of the Project. CVWD shall develop and implement best management practices (BMPs) to avoid and minimize impacts to sand and sand transport. BMPs shall include, but not be limited to, the following:

- Project equipment and materials shall be staged and stored outside of the wind corridor, to the extent feasible. Within the wind corridor, rows of equipment and materials (other than sand placed in distribution sites; see Mitigation Measure SM-2) shall be stored parallel, rather than perpendicular, to the wind corridor.
- The placement of any barriers (e.g., fencing, spoil piles, etc.) that may impinge on the unobstructed flow of wind within the wind corridor shall be avoided and minimized to the extent feasible. Barriers shall be placed parallel, rather than perpendicular, to the wind corridor, as feasible (other than sand placed in distribution sites; see Mitigation Measure SM-2).
- Fencing or other temporary or permanent barriers shall be designed, oriented, and installed to minimize impacts to sand and sand transport.
- Construction activities that would create temporary or permanent barriers shall be avoided and minimized to the extent feasible.
- Application of water to control dust shall be minimized to the extent necessary to meet air quality and other Project requirements. Water sources (e.g., hydrants, tanks, etc.) shall be checked periodically by biological monitors to ensure they are not impacting sand mobility (e.g., by leaking or consistently overfilling trucks, causing wet ground where sand is immobile).
- No Project-related pedestrian or vehicle traffic shall be permitted outside defined access routes and work site boundaries.
- Construction and O&M work areas and access roads shall be secured to minimize unauthorized public access.
- Areas of active dunes shall be avoided. If active dunes cannot be avoided, disturbance to the dune sand shall be minimized.
- The lead biologist (see Mitigation Measure BIO-2) shall utilize observations and feedback from construction personnel and monitors, in consultation with CVWD, USACE, USFWS, and CDFW, to develop and implement any additional BMPs needed to avoid and minimize impacts to sand and sand transport.

MM SM-2 **Prepare and Implement a Sand Migration Management Plan.** This measure augments EC SM-2 (Adaptive Management Plan) and requires CVWD to prepare and implement a Sand Migration Management Plan (SMMP) to guide the management of the sand resource during the construction and O&M phases of the Project. The Adaptive Management Plan required by EC SM-2 may be included as a component of the SMMP.

The SMMP shall be prepared and submitted to USACE, USFWS, and CDFW for review and comment at least 60 days prior to initiation of construction on the Project. CVWD shall ensure that personnel involved in sand removal and other activities that impact sand and sand transport are familiar with the requirements and guidelines in the SMMP.

The SMMP shall include EC SM-1 (Sand Removal and Distribution or Disposal) and specific guidance on the implementation of EC SM-1, including but not limited to:

- Inspection schedules for accumulation of sand in all Project levees and channels, including inspections after precipitation events.
- Requirements for pre-activity biological surveys for sand removal, including surveys of sand removal areas and areas of associated disturbance, sand distribution sites and access roads, and biological monitoring of sand removal and distribution activities. Based on the results of pre-activity surveys, CVWD or its contractor shall observe no-disturbance buffer areas or other access or activity restrictions to minimize potential impacts to any sensitive resources or special-status species.
- Guidelines on determining if removed sand is suitable for placement in a sand distribution site. The guidelines shall include specific parameters that define suitable versus unsuitable sand. Procedures for conducting sampling and analysis of sand shall be included, as applicable.
- Procedures and guidelines for the distribution of sand, including parameters for selection of sand distribution sites, appropriate placement of sand (as described in EC SM-1), and procedures for disposal of unsuitable material.
- Maps showing the locations of the sand distribution site(s), including approved access routes and turn-around areas. Disturbance areas at sand distribution sites shall be the minimum size necessary. Maps will clearly indicate the boundaries of sand distribution sites, including GPS points and any physical landmarks, and will be updated as needed. Traffic cones, traffic delineators, staking and flagging or other markers will be put in place for the duration of each sand distribution event to clearly mark these boundaries on the ground. Markers will be completely removed at the end of the sand distribution event. The SMMP shall also include the requirement for all Project-related activities to remain within the marked boundaries and on the approved access route and turn-arounds.
- Requirements to secure sand distribution sites and access roads from unauthorized access, particularly OHVs, as applicable; remove and properly dispose of any Project-related trash or trash found within the distributed sand; and clean up and properly dispose of any hazardous material spills from equipment.
- The SMMP shall include the BMPs identified or developed under Mitigation Measure SM-1. The SMMP shall also incorporate all other requirements from applicable Project mitigation measures.
- The SMMP shall include monitoring of sand habitat on the Preserve and remedial measures to be employed if sand distribution is not effective at maintaining sand habitat on the Preserve. The Adaptive Management Plan required by EC SM-2 may be included in the SMMP.

CEQA Significance Conclusion

During construction, the proposed Project may result in temporary disturbance to sand source areas, fluvial transport of sand to source areas, and the supply of sand to the wind corridor. The proposed Project also disrupt areas located below the levees. These impacts would be considered significant without mitigation. Implementation of EC SM-1 (Sand Removal and Distribution or Disposal), EC SM-2 (Adaptive Management Plan), and Mitigation Measures SM-1 (Minimize Sand Impacts), and SM-2 (Prepare and Implement a Sand Migration Management Plan) would reduce impacts to sand source areas, fluvial transport of sand to source areas, and supply of sand to the wind corridor to a less-than-significant level (Class II). Post construction the proposed flood control structures will have a positive effect on sand supply to the dunes and sand sheets that occur in the Preserve and Refuge.

Impact SM-2: The Project could affect aeolian sand transport, sand sorting processes, and sand deposition.

Aeolian sand transport, sand sorting, and sand deposition would be directly affected during construction of the levees, channels, and other Project-related structures. Impacts to aeolian transport, sorting, and deposition could result in a short-term reduction in the transport of sand to the Preserve and impacts to the dune and sand field formations. Post construction the proposed Project is not expected to adversely affect aeolian transport of fine sands and is expected to increase the amount of material available for transport to the Preserve.

Analyzing the historic rate of sand dune reduction from aerial photographs (1939-1992), and assuming this rate were to continue, SLA (1997) estimated that the existing sand dunes would migrate out of the Preserve within 60 years, and the sandy plains on the alluvial fan would diminish within 130 years. This estimate was irrespective of future development. However, there is no direct evidence that this trend will necessarily continue. It is probable that if similar data were available over a longer time span, continuing cycles of dune depletion and expansion would be evident. Rare, extreme wind events (possibly combined with flood flows) may activate formation and migration of new dune systems (USACE, 2000). Borings taken on the wind corridor show deep deposits of blowsand-size sediment that could become available for transport to the Preserve if exposed by future flooding process such as channel cutting. Limiting factors include armoring from larger grained sediment and cobbles, barriers in the surrounding landscape, and stabilization of upwind sand source areas. In addition, Lancaster (2015) found that the estimates of sediment transport were substantially less than previous studies (see Appendix C.1) but the aeolian sand transport system is currently in a state of sediment supply limitation. Therefore, any additional sand supply trapped by the levees will be transported downwind to the dunes. The addition of sand as a result of the proposed flood control structures will also increase the length of time to deplete the sand deposited by flood events by as much as 9 to 18 months. This will contribute additional material to the system rather than having material wash downstream to areas where the material is not available to the wind corridor.

Lancaster also studied the height of the levees to determine if they would interrupt aeolian transport of sand. He found that the Reach 1 the model results indicate that the winds will be reduced in speed by about 20 percent and deflected by the structures and so that they will flow parallel to the trench and the levee. Any sand deposited will likely be moved down the structure to the SE. For Reach 2: The levee orientation is essentially parallel to the sand transport vector determined from adjacent sand dunes and sand streaks. Sand moving winds will therefore be attached and blow down the length of the excavated trench, transporting sand directly along this reach. For Reach 3, Lancaster notes the upstream parts of this reach isolate part of the sand transport corridor lying to the SW of the reach; however, sand transported in this area does not reach the Coachella Valley NWR and Preserve. The upstream parts of the flood control structure above the transition to a channel are oriented parallel or sub-parallel to the

sand transport vector and sand moving winds will therefore blow down the length of the excavated trench transporting sand directly along this reach. The two North-South oriented sections of the lower part of Reach 3 have the potential to trap sand; however, the upwind area is developed (Xavier School grounds) and sand movement across these areas is not considered likely. Reach 4 crosses the southern end of the sand transport corridor on the south side of the Preserve along the alignment of Avenue 38. Sand transport vectors derived from immediately adjacent sand dunes intersect the main W-E oriented part of this reach at angle of 49°. As a result, winds will separate on the margin of the channel wall and be deflected to follow parallel to the channel. They will also be reduced in velocity by as much as 34 percent. Deposition of sand into the channel is likely, but the sand will be moved eastwards by the deflected winds, but may also be blown out of the channel to the SE.

O&M activities are described in Section 2.2.3 (Project Description) and include periodic removal and distribution or disposal of sand that collects along the Project levees and within the Project channels. Sand that collects along the Project levees and within the Project channels would be regularly removed and suitable sand would be placed within the wind corridor for aeolian transport to the Preserve, as stipulated by EC SM-1 (Sand Removal and Distribution or Disposal).

Weather conditions and storm frequency determine how quickly sand accumulates. The frequency of sand removal activities associated with the proposed Project will vary for levees versus channels; this is because sand is expected to accumulate within the channels more quickly than along the levees. All Project facilities would be inspected regularly to assess the rate of sand accumulation, and sand would be regularly removed to maintain flow capacity. It is anticipated that at least one foot of sand would accumulate in Project channels or along the levees prior to the execution of removal activities. It is also expected that levee and channel facilities would be cleared of any accumulated sand material prior to anticipated storm events and inspected immediately following major storm events; this ensures that the Project's flow capacity is both sufficient to accommodate storm-related flows, and not adversely affected by sediment deposition associated with major storm events.

Sand transport, sorting, and deposition could be indirectly affected by the proposed Project as installation of flood control structures would reduce the flood potential and facilitate development on the downstream side of the levees and channels. However, sand transport below the Reach 1 and Reach 2 levees is hindered by existing development (described above). And, since the Thousand Palms area is the largest land area available for future development in the Coachella Valley, development pressure will remain regardless of whether a regional flood control system is constructed. Flood control structures such as channels and detention basins that may be incorporated into individual future developments would impact sand migration and, in aggregate, this impact is likely to be greater than that of the proposed regional flood control project, which has been designed to minimize and mitigate for sand migration impacts. In addition, the proposed Project protects the 550-acre floodway within the wind corridor from future development.

To reduce impacts to the aeolian sand transport in the wind corridor, CVWD would implement EC SM-1 (Sand Removal and Distribution or Disposal) to remove sand that collects along Project levees and channels, evaluate the sand for suitability to replenish sand habitat on the Preserve, and place suitable material in the wind corridor where it can be picked up by aeolian transport and deposited on the Preserve. This would avoid or minimize impacts to aeolian sand transport resulting from the levees, channels, and other Project structures.

The implementation of EC SM-2 (Adaptive Management Plan) would work in concert with EC SM-1 to maximize the amount and quality of sand transport onto the Preserve. CVWD would coordinate with

Preserve management to assess habitat quality on the Preserve and determine if any changes in removal and distribution of sand are required.

ECs and Mitigation Measures Applicable to Impact SM-2

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

See Impact SM-1 for the complete text of the following mitigation measures:

MM SM-1 (Minimize Sand Impacts)

MM SM-2 (Prepare and Implement a Sand Migration Management Plan)

CEQA Significance Conclusion

During construction, the proposed Project may result in temporary disturbance to sand source areas, fluvial transport of sand to source areas, and the supply of sand to the wind corridor. The proposed Project also disrupt areas located below the levees. These impacts would be considered significant without mitigation. Implementation of EC SM-1 (Sand Removal and Distribution or Disposal), EC SM-2 (Adaptive Management Plan), and Mitigation Measures SM-1 (Minimize Sand Impacts), and SM-2 (Prepare and Implement a Sand Migration Management Plan) would reduce impacts to aeolian sand transport, sand sorting, and sand deposition in the wind corridor to a less-than-significant level (Class II). Post construction the proposed flood control structures will have a positive effect on sand supply to the dunes and sand sheets that occur in the Preserve and Refuge.

Result in stormwater runoff onto blowsand habitat, causing erosion or armoring of blowsand within the Coachella Valley Preserve (Criterion SM2).

During floods in the Project area flows are distributed broadly over the alluvial fan surfaces, conveyed as shallow sheet flow on the lower fans, and then recombined to flow through sand dunes to reach Washington Street (NHC, 2013).

Impact SM-3: The Project could result in stormwater runoff onto blowsand habitat in the Coachella Valley Preserve.

Construction and O&M of the proposed Project would purposefully alter natural drainage patterns, concentrate the on-site runoff, flooding, erosion, and sedimentation to the north of the proposed levees. Floodwaters with a predominantly southerly flow would be intercepted and directed generally towards the east-southeast. These intercepted flows would be concentrated from sheet flows to more channel-like flows along the toes of the levees and within the channelized reaches (Reaches 3 and 4). See Sections 3.14 and 4.14 (Water Resources) for additional discussion. Post construction flood flows in near the Preserve would be similar to existing conditions with the exception of the southwest corner of the Preserve, where flows would be reduced or eliminated due to the construction of channels (NHC, 2013). Specifically, where Reach 4 of the proposed Project reaches Washington Street, water would enter a conveyance system to direct stormwater flows under Washington Street and into an existing storm water system with the capacity to transmit proposed Project-related flows. These flows would discharge into an existing detention basin that would be deepened as part of the proposed Project. Therefore, stormwater runoff in the Preserve will not increase from baseline conditions due to construction or operation of the proposed Project; See Section 4.14 (Water Resources). Flows are not expected to scour new areas supporting important soils or substantially alter the amount of blowsand available to the system. The

levees may trap material that would otherwise be lost to the system by flowing into areas outside the wind corridor.

CEQA Significance Conclusion

Stormwater runoff onto blowsand habitat in the Preserve as a result of the proposed Project would be similar to and potentially slightly reduced from existing conditions. This impact would not be significant (Class III), and no mitigation is required.

Lead to stabilization of sand source(s), including increased vegetation within the wind corridor (Criterion SM3).

Active sand dunes (i.e., dunes that have an active layer of mobile sand) exist in a state of dynamic equilibrium, continuously losing sand downwind due to erosion and sand transport and gaining new supplies from upwind. If upwind sources of sand are reduced or eliminated, wind deposition of sand will be insufficient to replace sand lost by wind erosion and downwind dunes and hummocks (small hills or mounds) will become depleted, shrinking in size and depth. Upwind sand sources may be reduced or eliminated through stabilization, compaction, crusting and "cementing," or armoring of surface deposits. This directly affects the availability of sand for transport to downwind areas.

Any barrier to the downwind movement of sand will trap the sand, and it will tend to become stabilized at that point. Proliferation of native or non-native vegetation in sand source areas leads to increased sand stabilization, as does the introduction of man-made structures that interrupt sand transport.

Compaction occurs when soil particles are mechanically pressed together, as when vehicles or heavy equipment are driven over the surface. Crusting and cementing occur when particles adhere together and may be the result of repeated wetting and drying, as when the surface is repeatedly sprayed with water for dust control.

Armoring occurs when coarser surface materials shield the finer underlying sand deposits from aeolian transport. This may be the result of decreased input of sand due to upwind blockages. As the finer surface sand is depleted through aeolian transport, it leaves behind the coarser particles, eventually creating a hard surface that is impervious to aeolian transport (SLA, 1996).

Impact SM-4: The Project could affect sand transport through the stabilization of sand.

Stabilization of sand sources could occur directly through sand compaction caused by Project-related grading or other construction or O&M activities, by crusting and cementing due to application of water for dust control or alterations in hydrology, or by surface armoring resulting from obstruction of sand transport by Project levees and other structures. Indirect Project effects to sand stabilization may occur as a result of the proliferation of vegetation, due either to introduction and spread of non-native invasive plants or to alterations in hydrology or other environmental factors that promote growth of vegetation.

Sand stabilization could be indirectly affected by the Project as installation of flood control structures would reduce the flood potential and facilitate development on the downstream side of the levees and channels. Additional development is likely to result in impacts such as compaction of sand by recreational OHVs, introduction and spread of invasive weeds from neighboring residential areas, changes in hydrology from altered runoff and infiltration patterns, groundwater withdrawal leading to changes in vegetation, and creation of upwind obstacles to sand transport that promote surface armoring.

Stabilization of sand source areas could result in a substantial reduction in the replenishment of sand to the wind corridor. This could, in turn, result in the loss or degradation of downwind habitat for sand-

dependent special-status plant and wildlife species and affect the long-term viability of the Preserve. In the Coachella Valley, blocked sand transport corridors lead to sand compaction and premature stabilization of dunes, increased mean size of sand grains (which reduces habitat quality and suitability for Coachella Valley fringe-toed lizard), and aeolian habitat loss (Turner et al., 1984).

Impacts would include temporary and permanent impacts from construction, as well as the on-going impacts from the O&M of the Project facilities. Direct and indirect effects that result in reduction of sand supply to the wind corridor would be considered adverse.

Temporary construction activities and on-going O&M activities could promote sand stabilization by vehicles and heavy equipment, application of water for dust control, introduction of temporary barriers in the wind corridor, and through introduction and spread of invasive weeds. Project levees, channels, and other permanent structures would act as long-term obstacles to sand transport and alter hydrological patterns (See Impact SM-1).

Project-related proliferation of vegetation may occur through introduction and spread of invasive weeds or through alterations in hydrology or other environmental factors that promote growth of vegetation. Invasive weeds, particularly Sahara mustard (*Brassica tournefortii*) and Russian thistle or tumbleweed (*Salsola spp.*), increase ground cover and stabilize loose sand, promote the spread of wildfire by increasing fuel loads, and compete with native plants (including special-status plants and common plants that support special-status wildlife species) for moisture and nutrients (Lovich and de Gouvenain, 1999; Bossard et al., 2000; Barrows and Allen, 2007; Orloff et al., 2008; CDFW, 2015). The presence and proliferation of invasive weeds is correlated with decreases in sand-dependent special-status plant and wildlife species in the Coachella Valley (Barrows and Allen, 2007). Soil disturbance and gathering and channeling water create conditions favorable to the introduction of new noxious weeds or the spread of existing populations. In general, construction equipment, fill, aeolian processes and use of purchased mulch can act as vectors introducing noxious weeds into an area. Invasive weeds are discussed in Sections 3.6 and 4.6 (Biological Resources).

Temporary localized ponding of water behind the levees may promote growth of vegetation, both invasive weeds and native plants, resulting in stabilization of loose sand. Ponding may also result in crusting or cementing of soil as it dries, creating a stabilized surface.

The Project has been designed to minimize obstruction of sand transport; see discussion in Impact SM-2. Project-related alterations to hydrology are addressed in Impact SM-1 and SM-3. See Sections 3.14 and 4.14 (Water Resources) for additional discussion.

Aeolian sand transport could be indirectly affected by the proposed Project as installation of flood control structures would reduce the flood potential and facilitate development on the downstream side of the levees and channels. As described above for fluvial transport, sand transport below the Reach 1 and Reach 2 levees is hindered by existing development. And, since the Thousand Palms area is the largest land area available for future development in the Coachella Valley, development pressure will remain regardless of whether a regional flood control system is constructed.

To reduce impacts to the sand supply in the wind corridor, CVWD would implement EC SM-1 (Sand Removal and Distribution or Disposal) to remove sand that collects along Project levees and channels, evaluate the sand for suitability to replenish sand habitat on the Preserve, and place suitable material in the wind corridor where it can be picked up by aeolian transport and deposited on the Preserve. This would avoid or minimize entrapment and stabilization of sand by the levees and channels.

The implementation of EC SM-2 (Adaptive Management Plan) would work in concert with EC SM-1 to maximize the amount and quality of sand transport onto the Preserve. CVWD would coordinate with Preserve management to assess habitat quality on the Preserve and determine if any changes in removal and distribution of sand are required.

ECs and Mitigation Measures Applicable to Impact SM-4

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

See Impact SM-1 for the complete text of the following mitigation measures:

MM SM-1 (Minimize Sand Impacts).

MM SM-2 (Prepare and Implement a Sand Migration Management Plan)

CEQA Significance Conclusion

The proposed Project would have temporary and permanent and direct and indirect impacts on sand stabilization and sand supply to the wind corridor that supplies the Preserve. These impacts would be considered significant without mitigation. Implementation of EC SM-1 (Sand Removal and Distribution or Disposal), EC SM-2 (Adaptive Management Plan), and Mitigation Measures SM-1 (Minimize Sand Impacts), and SM-2 (Prepare and Implement a Sand Migration Management Plan) would reduce sand stabilization and impacts to sand transport in the wind corridor due to sand stabilization to a less-than-significant level (Class II).

4.5.2.2 Removal of Reach 2 (Alternative 2)

For this alternative Reach 2 would not be constructed. Reaches 1, 3, and 4 would be implemented as described for the proposed Project. Construction activities would be exactly as described in Section 2.2.2 for the proposed Project (Alternative 1), except that no construction would occur along the proposed Reach 2.

Operation and maintenance activities associated with Alternative 2 would be the same as described in Section 2.2.3 for the proposed Project (Alternative 1), except that sand removal activities would not occur along Reach 2.

Direct and Indirect Effects Analysis

Have a measurable effect on the quantity or quality of sand migration onto the Coachella Valley Preserve (Criterion SM1).

Impact SM-1: The Project could affect sand source areas, fluvial transport of sand to source areas, and supply of sand to the wind corridor.

Implementation of Alternative 2 would result in the same impacts to sand sources as described for the proposed Project. Reach 2 is within the primary alluvial deposition area and removing this reach would slightly reduce impacts to sand source areas and fluvial transport in the Project area. Alternative 2 impacts from construction O&M activities would be the same as the proposed Project.

ECs and Mitigation Measures Applicable to Impact SM-1

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in similar and potentially somewhat reduced impacts to sand source areas, fluvial transport, and sand supply to the wind corridor as described for the proposed Project (Alternative 1). Implementation of the above ECs and mitigation measures would reduce impacts to a less-than-significant level (Class II).

Impact SM-2: The Project could affect aeolian sand transport, sand sorting processes, and sand deposition.

Reach 2 is located within and parallel to the wind corridor and developed areas are located to the west (upwind) and south (downstream). Alternative 2, impacts to aeolian transport, sand sorting, and sand deposition in the Project area would be similar and potentially somewhat reduced from the proposed Project. The removal of Reach 2 is not expected to alter the wind corridor but could reduce the amount of sediment that is transported through the system. Sediment flowing from Reach 1 may become trapped along the northern border of the SCE sub-station or become lost to the system if sediment accumulates in this area. Under the proposed Project this material would flow along the face of Reach 2 intercepting Reach 3 below Ramon Road. Implementation of the ECs and mitigation measures noted below would substantially reduce or avoid impacts on aeolian sand transport, sorting, and deposition in the wind corridor.

ECs and Mitigation Measures Applicable to Impact SM-2

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Under Alternative 2 there may be a marginal reduction in sediment transport which would increase impacts compared to the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Result in stormwater runoff onto blowsand habitat, causing erosion or armoring of blowsand within the Coachella Valley Preserve (Criterion SM2).

Impact SM-3: The Project could result in stormwater runoff onto blowsand habitat in the Coachella Valley Preserve.

Implementation of Alternative 2 would result in the same types of impacts as described for the proposed Project. Reach 2 would direct flood flows slightly to the east and would have little or no impact on flood flows in the Preserve. The floodway would retain a similar configuration under this alternative, and impacts would be similar to the proposed Project.

CEQA Significance Conclusion

Stormwater runoff onto blowsand habitat in the Preserve as a result of Alternative 2 would be similar to and potentially slightly reduced from existing conditions. This impact would not be significant (Class III) and no mitigation is proposed.

Lead to stabilization of sand source(s), including increased vegetation within the wind corridor (Criterion SM3).

Impact SM-4: The Project could affect sand transport through the stabilization of sand.

Implementation of Alternative 2 would result in the same types of impacts as described for the proposed Project (Alternative 1). Since Reach 2 would not be built under Alternative 2, sand stabilization impacts would be similar and somewhat increased from the proposed Project.

ECs and Mitigation Measures Applicable to Impact SM-4

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Alternative 2 would have similar direct and indirect impacts on sand stabilization and sand supply as described for the proposed Project (Alternative 1). These impacts would be considered significant without mitigation. Implementation of the same ECs and mitigation measures for the proposed Project would reduce impacts to sand transport in the wind corridor due to sand stabilization to a less-than-significant level (Class II).

4.5.2.3 Modified Reach 3 (Alternative 3)

Direct and Indirect Effects Analysis

Have a measurable effect on the quantity or quality of sand migration onto the Coachella Valley Preserve (Criterion SM1).

Under this alternative there are two possible alignments of Reach 3. Each would be adjusted so the upstream portion of the levee angles more to the west/southwest compared to the proposed Project (Figure 2-9, Alternative 3a and 3b Alignments). Two options for this alternative are under consideration. Option A would tilt the levee portion of Reach 3 approximately six to 10 degrees to the west/southwest and Option B would tilt the levee approximately 17 degrees to the west/southwest respectively when compared to the levee for the proposed Project (Alternative 1).

Reaches 1, 3, and 4 would be implemented as described for the proposed Project. Construction activities would be exactly as described for the proposed Project (Alternative 1), except that the physical location of the Reach would be changes.

Operation and maintenance activities associated with Alternative 3 would be the same as described in for the proposed Project (Alternative 1).

Impact SM-1: The Project could affect sand source areas, fluvial transport of sand to source areas, and supply of sand to the wind corridor.

Implementation of Alternative 3 would result in the same types of impacts as described for the proposed Project. Under the proposed Project (Alternative 1), Reach 3 is at the southwest edge of and parallel to the wind corridor. A portion of the northwest end of Reach 3 is within the primary alluvial deposition area that currently supports sand transport to the Coachella Valley Preserve. Option A of Alternative 3 would tilt Reach 3 slightly to the west-southwest moving the northwest end of the reach outside of the wind corridor (see Figure 2-9). Under Option A the extent of Reach 3 located within the primary alluvial deposition area and resulting impacts to sand source, sand supply, and fluvial transport would be

somewhat reduced as compared to the proposed Project. Similarly, Option B of Alternative 3 would tilt Reach 3 even more to the west-southwest than Option A moving the northwest end of the reach further outside of the wind corridor (see Figure 2-9) reducing impacts to sand source, sand supply, and fluvial transport.

ECs and Mitigation Measures Applicable to Impact SM-1

Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or B of Alternative 3 would result in similar and somewhat reduced impacts to sand source areas, fluvial transport, and sand supply to the wind corridor as described for the proposed Project (Alternative 1). Implementation of the above ECs and mitigation measures would reduce impacts to a less-than-significant level (Class II).

Impact SM-2: The Project could affect aeolian sand transport, sand sorting processes, and sand deposition.

Option A of Alternative 3 would tilt Reach 3 slightly to the west-southwest moving the northwest end of the reach outside of the wind corridor (see Figure 2-9). Option B would tilt Reach 3 more to the west-southwest than Option A (see Figure 2-9). Under Options A and B, the extent of Reach 3 located with the primary alluvial deposition area and resulting impacts to aeolian sand transport, sand sorting, and sand deposition would be somewhat reduced compared to the proposed Project (Alternative 1).

As with the proposed Project, Alternative 3 (Option A or B) would have temporary impacts on aeolian sand transport, sorting, and deposition in the wind corridor. Post construction the proposed Project is not expected to adversely affect aeolian transport of fine sands and is expected to increase the amount of material available for transport to the Preserve. Implementation of the ECs and mitigation measures noted below would substantially reduce or avoid impacts on aeolian sand transport, sorting, and deposition in the wind corridor.

ECs and Mitigation Measures Applicable to Impact SM-2

Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 3 (Option A or B) would result in similar impacts to aeolian sand transport, sorting, and deposition in the wind corridor as described for the proposed Project (Alternative 1). Implementation of the above ECs and mitigation measures would reduce impacts to a less-than-significant level (Class II).

Result in stormwater runoff onto blowsand habitat, causing erosion or armoring of blowsand within the Coachella Valley Preserve (Criterion SM2).

Impact SM-3: The Project could result in stormwater runoff onto blowsand habitat in the Coachella Valley Preserve.

Relocation of Reach 3 under Alternative 3 (Option A or B), would have little or no effect on flood flows in the Preserve. As described in Section 4.5.2.1, flood flows in the Preserve after construction of the

proposed Project (Alternative 1) would be similar to existing conditions, with the exception of the southwest corner of the Preserve, where flows would be reduced or eliminated.

CEQA Significance Conclusion

Stormwater runoff onto blowsand habitat in the Preserve as a result of Alternative 3 (Option A or B) would be similar to and potentially slightly reduced from existing conditions. This impact would not be significant (Class III) and no mitigation is proposed.

Lead to stabilization of sand source(s), including increased vegetation within the wind corridor (Criterion SM3).

Impact SM-4: The Project could affect sand transport through the stabilization of sand.

Alternative 3 (Option A or B) have the same types of impacts as the proposed Project (Alternative 1). O&M activities would also be the same as for the proposed Project except that sand removal activities would likely be less intense along Reach 3 due to the alignment moving away from the active wind corridor. Therefore, stabilization of sand sources through sand compaction caused by Project-related construction or O&M activities would be less than the proposed Project.

Under Option A, the extent of Reach 3 located with the primary alluvial deposition area and resulting impacts to sand transport would be somewhat reduced compared to the proposed Project, including potential impacts due to sand stabilization. Relocating the northwest end of Reach 3 out of the wind corridor would reduce the obstruction of sand transport by Project levees and other structures and also reduces the associated potential for surface armoring. Impacts to sand transport due to sand stabilization under Option B would be similar to Option A, but relocating Reach 3 further outside the wind corridor which may reduce impacts.

ECs and Mitigation Measures Applicable to Impact SM-4

Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Alternative 3 (Option A or B) would result in similar sand stabilization impacts compared to the proposed Project (Alternative 1). These impacts would be considered significant without mitigation. Implementation of the same ECs and mitigation measures for the proposed Project would reduce impacts to sand transport in the wind corridor due to sand stabilization to a less-than-significant level (Class II).

4.5.2.4 No Action (Alternative 4)

Under the No Action Alternative, the proposed Project would not be implemented, and existing sand migration would remain undisturbed by the proposed flood control features. It is anticipated that development would continue to expand throughout the Project area and the 550-acre floodway would not be protected from future development, beyond the existing preserve areas. Since the Thousand Palms area is the largest land area available for future development in the Coachella Valley, development pressure will remain regardless of whether a regional flood control system (i.e., the proposed Project) is constructed. Flood control structures incorporated into individual future developments would impact sand migration and, in aggregate, this impact may be greater than that of a regional flood control project that has been designed to minimize and mitigate for sand migration impacts. Continuing development in the wind corridor would contribute to further decreases in fluvial and aeolian sand transport and

reduction of viable sand habitat in the Preserve. Therefore, the No Action Alternative would not benefit sand migration in the region.

4.5.3 Impact Summary – Sand Migration

Table 4.5-2 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to sand migration. Refer to Section 4.5.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures.

Table 4.5-2. Summary of Impacts and Project Mitigation Measures – Sand Migration

Impact	Impact Significance			Mitigation Measures and ECs
	Alt. 1 Proposed Project	Alt. 2 Removal of Reach 2	Alt. 3 Modified Reach 3	
SM-1: The Project could affect sand source areas, fluvial transport of sand to source areas, and supply of sand to the wind corridor.	Class II (Construction)	Class II (Construction)	Class II (Construction)	EC SM-1 (Sand Removal and Distribution or Disposal) EC SM-2 (Adaptive Management Plan) MM SM-1 (Minimize Sand Impacts) MM SM-2 (Prepare and Implement a Sand Migration Management Plan)
SM-2: The Project could affect aeolian sand transport, sand sorting processes, and sand deposition.	Class II (Construction)	Class II (Construction)	Class II (Construction)	EC SM-1 (Sand Removal and Distribution or Disposal) EC SM-2 (Adaptive Management Plan) MM SM-1 (Minimize Sand Impacts) MM SM-2 (Prepare and Implement a Sand Migration Management Plan)
SM-3: The Project could result in stormwater runoff onto blowsand habitat in the Coachella Valley Preserve.	Class III	Class III	Class III	None required.
SM-4: The Project could affect sand transport through the stabilization of sand.	Class II	Class II	Class II	EC SM-1 (Sand Removal and Distribution or Disposal) EC SM-2 (Adaptive Management Plan) MM SM-1 (Minimize Sand Impacts) MM SM-2 (Prepare and Implement a Sand Migration Management Plan)

Class I: Significant impact; cannot be mitigated to a level that is not significant. A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: Significant impact; can be mitigated to a level that is not significant. A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: Adverse; less than significant. A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: Beneficial impact. A Class IV impact represents a beneficial effect that would result from project implementation.

4.6 Biological Resources

This section presents potential biological resources impacts associated with construction and O&M of the Project and alternatives. Refer to Section 3.6.1 for a description of the existing biological resources, and Section 3.6.2 for the regulatory framework applicable to the Project.

4.6.1 Issues Identified During Scoping

Table 4.6-1 below provides a list of biological resource issues raised during the public scoping period for the EIR/EIS (see Appendix A, Public Scoping). Issues are listed by agency or members of the public providing comment. The table also includes a brief discussion the applicability of each issue to the environmental analysis and where that issue is addressed in the EIR/EIS.

Table 4.6-1. Scoping Issues Relevant to Biological Resources

Comment	Consideration in the EIR/EIS
United States Environmental Protection Agency	
Asks whether a jurisdictional delineation has been conducted for the Project, noting that maps provided during the public scoping process identified several ephemeral drainages. States that information on acres of impacts to jurisdictional waters should be included in the EIS.	A jurisdictional delineation was conducted in December 2018 and March 2019 and identified 56.89 acres of potentially CDFW jurisdictional waters and 33.10 acres of potentially jurisdictional non-wetland Waters of the U.S. and State in the Project Study Area (i.e., all permanent and temporary impact areas of the Project, as well as areas immediately downstream of the Project components). The Preliminary Jurisdictional Waters/Wetlands Delineation Report is included as Appendix D of the EIR/EIS. See Impact BIO-19 in Section 4.6.2 of the EIR/EIS for an analysis of Project impacts to jurisdictional waters and proposed mitigation.
Asks how potential impacts to ephemeral drainages will be addressed in mitigation, with specific reference to the Corps' mitigation strategies and 404(b)(1) alternatives consideration. States that the EIS should identify compensatory mitigation options including mitigation banks, in-lieu fee programs, and permittee-responsible mitigation.	Mitigation Measure BIO-19 of the EIR/EIS requires the CVWD to prepare a Conceptual Mitigation Plan that will include a plan for compensation mitigation to offset direct or indirect Project impacts, including reduction of acreage, and downstream or upstream effects to channels, surface flow, and associated habitat to jurisdictional waters. See Impact BIO-19 in Section 4.6.2 of the EIR/EIS.
U.S. Fish and Wildlife Service	
Notes that the Project includes occupied and designated critical habitat for federally threatened and federally endangered species, including the Coachella Valley fringe-toed lizard and the Coachella Valley milk-vetch. Also, notes that the Project includes areas within the Coachella Valley Preserve and the Coachella Valley National Wildlife Refuge.	Section 3.6 of the EIR/EIS describes the biological resources on and in the vicinity of the Project site, including critical habitat for Coachella Valley fringe-toed lizard and Coachella Valley milk-vetch. This section also describes the location of the reaches of the Project in relation to the Coachella Valley Preserve and the Coachella Valley National Wildlife Refuge. Section 4.6.2 analyzes potential impacts of the Project on biological resources, including Coachella Valley fringe-toed lizard and the Coachella Valley milk-vetch and other resources within the Preserve and Refuge, and proposes mitigation to avoid, minimize, and compensate for impacts.
Provides a history of the USFWS' involvement in the proposed Project. USFWS produced a draft Coordination Act Report (CAR) in August 1999, which specified concerns about the potential for significant adverse effects to biological resources including the fringe-toed lizard. USFWS issued a Biological Opinion (BO) in September 2000 for Alternative 6, as assessed in the 2000 EIR/EIS.	Coordination with USFWS has been ongoing throughout preparation of the EIR/EIS. Sections 3.6.2.4 and 3.6.2.5 of the EIS describe the USFWS history with the project, including the 2000 BO and CAR, CHMS coverage of the earlier Project design, and current status regarding CHMS coverage or new Section 7 consultation if needed. The USFWS issued a Biological Opinion for the proposed Project on September 27, 2022 (see Appendix C.6).

Table 4.6-1. Scoping Issues Relevant to Biological Resources	
Comment	**Consideration in the EIR/EIS**
Describes differences between the Project referred to as Alternative 6 in the 2000 EIR/EIS, for which a BO was previously issued, and the current proposed Project. Specifically, that the previous project situated Reach 1 south of the existing SCE utility corridor and did not include any channels or retention basins.	Information on the history of the Project is incorporated into Section 1 (Introduction) of the EIR/EIS. See also Section 2 (Project Description).
States that the 2000 BO assumed that the Project (as designed at that time) would adversely affect 630 acres (255 ha) of fringe-toed lizard designated critical habitat, to be offset by the conservation of 583 acres (236 ha) of wind corridor lands within the floodway. Expresses concern that the proposed Project (as currently designed) would adversely affect a substantially larger area of critical habitat and would alter the sand transport processes (fluvial and aeolian) contributing to habitat on the Preserve/Refuge beyond what was considered in the 2000 BO. Refers to a letter submitted by USFWS to the Corps Regulatory Division in October 2004 to communicate these concerns.	Section 3.6 of the EIR/EIS identifies designated critical habitat and provides the results of habitat assessments that identified areas of high, moderate, and low habitat suitability for Coachella Valley fringe-toed lizard in the Project Study Area (see Figures 3.6-8 through 3.6-10, Coachella Valley Fringe-Toed Lizard Habitat). Section 4.6.2 analyzes potential impacts of the Project on biological resources, including Coachella Valley fringe-toed lizard critical habitat, and proposes mitigation to avoid, minimize, and compensate for impacts. Section 4.6.2 notes that much of the critical habitat serves primarily as a sand transport corridor to supply sand to downwind occupied habitat. Section 3.5 of the EIR/EIS describes sand transport systems in the Project area. Section 4.5 of the EIR/EIS analyzes potential Project impacts to sand migration and proposes mitigation to avoid, minimize, and compensate for impacts.
Explains that USFWS issued a permit for the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) in October 2008 with the Thousand Palms Flood Control Project included as a "covered project" under the assumption that the Project is consistent with the terms and conditions of the Section 7 consultation and BO issued in 2000. The commenter states that changes between the project addressed by the 2000 BO and the current proposed Project would likely exceed the extent of incidental take authorized (by the 2000 BO), resulting in impacts to listed species and critical habitat that were not considered in or covered by the 2000 BO. Therefore, in order to remain a covered project by the 2008 MSHCP permit, an updated BO would need to be issued by the USFWS, addressing the current proposed Project.	The CVMSHCP and Endangered Species Act consultation are described in Sections 3.6.2.4 and 3.6.2.5. After coordination with the USFWS and ~~CVAC~~ CVCC the Project was deemed consistent with the CVMSHCP on private lands. A separate USFWS Section 7 consultation and Biological Opinion would be required for impacts to federal lands. The USFWS issued a Biological Opinion for the proposed Project on September 27, 2022 (see Appendix C.6).
Explains that the CVMSHCP states that the Thousand Palms Flood Control Project would constitute a portion of the Preserve boundary, as long as the final project alignment does not constitute more than a "minor change" from the alignment studied and authorized in the 2000 BO. Expresses concern that the proposed Project alignment constitutes more than a "minor change," and would result in increased impacts to species, habitat, and aeolian patterns. Suggests that the EIR/EIS should calculate the loss to covered species and natural communities in the Preserve associated with the Project's realignment and assess whether this loss would exceed allocated take acreages (as defined in the 2000 BO).	The CVMSHCP and Endangered Species Act consultation are addressed in Sections 3.6.2.4 and 3.6.2.5. Table 3.6-1 indicates proposed Project disturbance acreage in various conservation land designations. If the Project would be inconsistent with the CVMSHCP, a separate USFWS Section 7 consultation and Biological Opinion would be required. The CVWD, USACE, and USFWS are working to resolve consistency of the current Project design with the CVMSHCP and associated Biological Opinion. Direct and indirect impacts to covered species and their habitats are analyzed in Section 4.6.2, and mitigation is identified to avoid, minimize, or offset the impacts. In August 2021, CVCC determined that the proposed Project is consistent with the CVMSHCP/NCCP and constitutes a Covered Project under Section 7.3.1 (Appendix C.5).
States that there are conservation objectives for land within Sections 7 and 8 (Public Land Survey System) that may not be achievable due to the proposed Project alignment.	The comment refers to the location of Reach 1 of the Project. The conservation objectives of Sections 7 and 8 are described in EIS Section 4.6.2, under Coachella Valley MSHCP and consistency with the conservation objectives is addressed under each Criterion and Impact Analysis, Consistency with the CVMSHCP. In August 2021, CVCC determined that the

Table 4.6-1. Scoping Issues Relevant to Biological Resources	
Comment	**Consideration in the EIR/EIS**
	proposed Project is consistent with the CVMSHCP/NCCP and constitutes a Covered Project under Section 7.3.1 (Appendix C.5).
States that, in comparison with the Project alignment addressed in the 2000 BO, the proposed Project alignment places levees and channels closer to the Wildlife Refuge lands and will directly impact portions of the Refuge, an effect that was not anticipated in the 2000 BO. The commenter states that potential effects to the Refuge will need to be analyzed and offset.	See Sections 3.6 and 4.6.2 of the EIR/EIS for a description of biological resources, analysis of potential impacts, and proposed mitigation to avoid, minimize, and compensate for impact, including impacts to resources within the Refuge, and mitigation measures to avoid, minimize, or offset impacts. The USFWS issued a Biological Opinion for the proposed Project on September 27, 2022 (see Appendix C.6).

Source: Appendix A.

4.6.2 Environmental Consequences

Significance Criteria. To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the Project and alternatives. Criteria have been identified and utilized to make these significance conclusions. The following significance criteria for biological resources were derived from Appendix G of the CEQA Guidelines, as well as significance criteria used in the 2000 Final EIS/EIR for the original alignment of the Project. Although this EIR/EIS is a stand-alone document, the 2000 criteria were crafted by the U.S. Army Corps of Engineers (USACE) Planning Division (the NEPA Lead Agency at that time) specifically for the Project and are therefore considered applicable to the current Project.

Impacts are considered significant if the Project or alternatives would:

- **Criterion BIO1:** Have a substantial adverse direct or indirect effect on any candidate, sensitive, or special-status species identified by local, State, or federal agencies.
- **Criterion BIO2:** Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified by local, State, or federal agencies.
- **Criterion BIO3:** Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act.
- **Criterion BIO4:** Interfere substantially with the movement of any native resident or migratory species, interfere substantially with an established migratory corridor, or impede the use of native wildlife nursery sites.
- **Criterion BIO5:** Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State conservation plan.

Impact Assessment Methodology

The impact analysis is based on an assessment of baseline conditions relevant to biological resources, presented in Section 3.6.1 (Biological Resources – Environmental Baseline). The objective of the biological resources analysis is to identify potential adverse effects and significant impacts on biological resources from the proposed Project or alternatives.

For the purposes of describing, assessing, and analyzing biological resources, the "Project site" is defined as all permanent and temporary impact areas associated with construction and O&M of the Project. The "Study Area" includes all portions of the Project site and a surrounding buffer zone. For habitat assessments, vegetation mapping, and surveys for most species, the "Study Area" is defined as the Project

site and a surrounding buffer 200 feet wide. For Coachella Valley fringe-toed lizard (CVFTL) surveys, the Study Area is defined as the Project site and a surrounding buffer 500 feet wide. For the jurisdictional delineation, the Study Area is defined as the Project site and select areas downstream (south) of the Project site.

Description of Direct, Indirect, and Operational Impacts. Direct impacts are defined under CEQA as those that result from a project and occur at the same time and place. For biological resources in the Project area, examples of direct impacts are loss or degradation of habitat; disturbance to wildlife from noise and vibration, lighting, dust, and vehicle traffic; destruction of burrows or nests; and injury or mortality of individuals. Indirect impacts occur later in time or farther removed in distance but are reasonably foreseeable and related to the Project. Indirect impacts can include the introduction and spread of invasive plant species that may compete with native species and cause habitat degradation or reduction of available food sources; changes in soil or hydrology that adversely affect native species over time; disruption of prey base; and increased predation due to certain habitat alterations (e.g., "subsidies" for predators[1]).

Operational impacts include both direct and potential indirect impacts to biological resources. Ongoing O&M impacts would occur during routine inspection and maintenance of levees and channels and would include such activities as routine inspection of Project-related facilities and emergency repairs. The removal of sediment and blow sand would also occur. Operational impacts would include weed abatement and vegetation management activities including but not limited to mechanical removal or mowing, hand removal, or herbicide treatment. These impacts would remain an ongoing source of disturbance for plants and wildlife species that occur in the area.

Permanent and Temporary Impacts. Permanent impacts include the conversion of land to a new use, such as construction of levees or channels, or long-term or permanent changes in landscape, topography, hydrology, etc. Temporary impacts are of short duration (i.e., 6 to 12 months) and do not result in permanent land use conversion or other changes. For the purposes of this document all temporary impacts to vegetation are considered permanent except where sand fields are expected to recover following disturbance.

Impacts to Biological Resources from Project-related Activities

The following discussion provides an overview of the types of impacts to biological resources that would occur due to construction of the Project and associated disturbance, O&M, and effects to water diversion and fluvial and aeolian sand transport on biological resources in downstream and downwind locations. The remainder of Section 4.6.2 provides a more detailed analysis of the specific impacts for each Project alternative.

Expected or potential direct impacts of Project construction and O&M on vegetation and habitat include removal of vegetation, disruption of native seed banks, displacement of special-status plants, diversion of water flow, and obstruction of fluvial and aeolian sand transport. Indirect effects of construction and O&M could include fugitive dust and the spread of non-native and invasive weeds.

Direct impacts to wildlife could occur from Project construction and O&M activities because of mechanical crushing, trampling, roadkill, loss of breeding sites, and disturbance from human activity. Disturbance to wildlife would be associated with the removal of vegetation, construction, and maintenance of the channels and levees and other Project facilities, and changes to existing topographical and hydrological

[1] Subsidies for predators are Project-related alterations in habitat that artificially augment resources that support predators. These resources include nest or perch sites, food, water, nesting materials, etc.

conditions. Indirect impacts to wildlife could include degradation of water quality, changes in hydrology, interference with fluvial and aeolian sand transport, and the spread of invasive weeds. General impacts to plants and wildlife are summarized in Table 4.6-2.

Table 4.6-2. Direct and Indirect Impacts to Plants and Wildlife from Project-related Activities

Activity	Impacts
Earth moving, grading, habitat/vegetation removal	• Direct mortality to small or less mobile species • Crushing of burrows or burrowing animals, disruption of soil surfaces, compaction of soils, and displacement of native species • Displacement of breeding birds and the abandonment of active nests • Loss of eggs and nestlings, including ground nesting birds • Reduced use of area as foraging habitat or movement corridor • Fugitive dust and habitat loss • Creation of barriers disrupting movement • Degradation of water quality from erosion and sedimentation • Disruption of sediment transport or hydrology to downstream areas • Disruption of aeolian sand transport • Spread of exotic weeds
Noise and vibration	• Interference with breeding or foraging activities and movement patterns • Avoidance of areas adjacent to the disturbance zone • Interference with auditory cues, resulting in increased predation • Abandonment of nests, burrows, or habitat
Man-made sources of light	• Disturbance or mortality to species that prey on insects attracted to light sources • Collisions with vehicles at night
Placement and use of temporary access roads	• Crushing of burrows and ground nests, disruption of soil surfaces, compaction of soils, and displacement of native species • Unintentional entombment within burrows or aestivation sites • Establishment of ruts or depressions that can alter soil conditions and hydrology • Alteration of physical characteristics of soil underneath roads (placement of roads increases compaction up to 200 times relative to undisturbed sites) • Effect on animal behavior by altering home range use, movement patterns, and escape responses; reducing reproductive success; and increasing physiological stress • Increasing perch sites for avian predators
Traffic	• Accidental mortality of small diurnal animals from vehicle collision • Secondary vehicular mortality of opportunistic predators feeding on roadkill • Disruption of breeding, foraging, and movement of bird species resulting in nest, roost, or territory abandonment and subsequent reproductive failure (during breeding season)
Waste	• Ingestion of ethylene glycol (antifreeze) • Food “subsidy” to ravens, coyotes, or feral dogs which may, in turn, prey on native wildlife

4.6.2.1 Proposed Project (Alternative 1)

Have a substantial adverse direct or indirect effect on any candidate, sensitive, or special-status species identified by local, State, or federal agencies (Criterion BIO1).

Threatened, Endangered, and Special-status Plants

Only one federally listed endangered plant species, the Coachella Valley milk-vetch, was observed in the Project Study Area and portions of the Project site are within USFWS-designated critical habitat for this species. No other federally or State-listed threatened or endangered plant species are likely to occur and no other designated critical habitat for plant species is located on the Project site.

Impact BIO-1: The Project could affect special-status plants including Coachella Valley milk-vetch or its critical habitat.

A single Coachella Valley milk-vetch (federally listed endangered) was observed within Reach 4 along the northern shoulder of Avenue 38 during surveys conducted in 2010. This occurrence was not re-located during surveys conducted in 2013 or 2016; however, this species may occur only as dormant seed in periods of low rainfall. Chaparral sand-verbena (California Rare Plant Rank (CRPR) 1B.1) was observed in several locations within Reach 4. No other rare plants were observed however several other non-listed special-status plants could occur on the Project site, with probabilities ranging from low to high (see Section 3.6, Biological Resources). Conservation status for some of these species is CRPR 1B (rare in California and throughout its range). Chaparral sand-verbena and the other non-listed special-status plant species that may occur on the Project site are not covered by the CVMSHCP.

Direct impacts to listed or special-status plants include trampling or crushing from heavy equipment, vehicles, or foot traffic, alterations to the native seed bank due to soil compaction, and modifications to existing hydrological conditions. Potential indirect impacts could include the disruption of native seed banks through soil alterations, the accumulation of fugitive dust, increased erosion and sediment transport, disruption of the sand transport system, and the colonization of non-native, invasive plant species. Excessive dust can decrease or limit plant survivorship by decreasing photosynthetic output, reducing transpiration, and adversely affecting reproductive success. Ground-disturbing activities that would occur during the Project can result in the proliferation and spread of non-native invasive plants to new areas. Because noxious weeds can permanently degrade rare plant and animal habitats, their proliferation could adversely affect listed plant species if they are present.

Weeds are abundant throughout the Project site and Reach 4 is heavily infested with Sahara mustard (*Brassica tournefortii*). Several other invasive weeds were also identified on the Project site, including Mediterranean grass (*Schismus* spp.) and Russian thistle (*Salsola tragus*). Non-native invasive may displace native species (including special-status species or plants that provide food or cover for special-status wildlife), alter natural habitat structure, change the edaphic and hydrological conditions, and increase wildfire frequency (Zouhar et al., 2008; Lovich and Bainbridge, 1999). Invasive weeds also stabilize sand fields and dunes and degrade habitat for sand-dependent special-status species. Weeds can become locally dominant, representing a serious threat to native desert ecosystems (Lathrop and Archbold, 1980; Beatley, 1966).

Construction and O&M activities that result in damage or destruction to Coachella Valley milk-vetch, or the loss or degradation of its habitat would be adverse. The proposed Project could have similar direct and indirect impacts to Coachella Valley milk-vetch critical habitat on or near the Project site, or at locations downstream or downwind of the Project site.

Construction of the Project would result in in temporary disturbance to 48.65 acres along the levees and the permanent loss of 26.78 acres of sand dune habitat that could support Coachella Valley milk-vetch (federally listed endangered). Potential direct effects to rare plants and Coachella Valley milk-vetch would be unlikely to affect more than a few individual plants due to very limited area of occupied habitat in the Study Area. Habitat for Coachella Valley milk-vetch was observed in portions of Reaches 3 and Reach 4, generally in areas mapped as high or moderate suitability for Coachella Valley fringe-toed lizard (see Figures 3.6-9 and 3.6-10, Coachella Valley Fringe-Toed Lizard Habitat Reach 3 and Reach 4 Alignment). However, most of this habitat is located along disturbed road edges or areas that are currently subject to disturbance from off highway vehicle use, illegal dumping, the placement of lawn clippings, and existing maintenance operations (i.e., sand removal). Portions of Reach 3 span disturbed areas including an access road and ruderal field before entering the Classic Club golf course. Similarly, most of Reach 4 would be in the present alignment of Avenue 38. Construction of the project is not expected to occur in most of the

large dunes located within the Preserve. Most of the habitat loss would occur south of Avenue 38 where sand fields, and dunes also occur. Construction of the Project and the placement of fill in these areas is not expected to impact most of the large dunes in this area. Soil would be placed in the flat areas and covered with fines.

The placement of the levee and channels may also hinder OHV use in many locations particularly in Reach 3 where OHV use is common along the western edge of the Refuge. By blocking the dirt road in this location, it may reduce vehicle traffic in areas that could support plants and reduce impacts to portions of the Thousand Palms Conservation Area.

Construction of the Project would also result in temporary disturbance to 3.31 acres and the permanent loss of 11.01 acres designated critical habitat for Coachella Valley milk-vetch (see Figure 3.6-2, Critical Habitat), although most of these areas are not expected to support the plants themselves. These areas were designated as critical habitat to protect sand transport functions, rather than occupied habitat (see Section 3.6.1.4). Construction of the Project is not expected to adversely affect the wind corridor and may result in beneficial affects overtime by trapping sediment that would otherwise be lost to the system as storms carry blowsand out of the wind corridor along the many drainages crossed by the levees. As compared to current conditions, this diversion of flow and resulting fluvial transport has the potential to increase the supply of sand moving into the wind corridor (Lancaster, 2015, Appendix C.1). In summary, the proposed Project will increase sand supply by 9 to 14 percent, mainly as a result of the diversion of water and sediment to the east and southeast to the primary sand deposition area by the levee and channel of Reach 1 (See Section 4.5 Sand Migration). Similarly, blowsand trapped in the levees or channels would be periodically removed and placed in the wind corridor above the Preserve.

Potential impacts to non-listed special-status plant species would be the same as described for listed plant species (Impact BIO-1). Impacts to a small number of non-listed special-status plants (i.e., impacts to a few individuals) or impacts to a local occurrence that would not negatively affect local or population-wide viability are not considered substantial. Impacts to a large proportion of plants in a local occurrence (i.e., greater than 10 percent of a species occurrence) are considered adverse.

To reduce impacts of the Project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). During Project O&M, the CVWD would transport sand removed from the project facilities (accumulated along the levees and channels) to the wind corridor upwind of suitable aeolian sand habitat, for aeolian transport onto the Preserve (Section 2.2.3). These two components of the proposed Project would serve to protect and manage aeolian sand habitat for Coachella Valley milk-vetch and other special-status plants. Land acquisition in the floodway could offset direct impacts if the acquired land is managed and maintained as habitat for special-status species (e.g., as aeolian sand habitat or sand transport area).

In addition, CVWD would implement Environmental Commitments found in Section 2.2.4. The Environmental Commitments that would serve to mitigate potential impacts to special-status plants are listed and summarized below. In addition to these Environmental Commitments, this EIR/EIS identifies Mitigation Measures that would mitigate potential impacts to special-status plants. Several of the Mitigation Measures are identified in other sections of the EIR/EIS and are summarized here. The biological resources measures are summarized below and their full text is presented later in this section. Coachella Valley milk-vetch is generally dependent on aeolian sand habitat; thus, Environmental Commitments and Mitigation Measures related to sand migration would contribute to overall mitigation of Coachella Valley milk-vetch impacts.

EC B-1 (Weed Abatement Program) would avoid or minimize habitat degradation due to proliferation of invasive weeds and resulting stabilization of loose sands and avoid or minimize competition for water and nutrients between non-native weeds and special-status plants.

EC B-2 (Biological Monitoring and Relocation of Sensitive Species) would require a biological monitor during construction activities, to identify sensitive species that may be found on the construction site.

EC B-3 (Avoid Impacts to Sensitive Species) would require avoidance of sensitive species where possible.

EC SM-1 (Sand Removal and Distribution or Disposal) provides for removal of aeolian sand from Project levees and channels, and transport of suitable sand to upwind locations to replenish sand dune habitat on the CVNWR.

EC SM-2 (Adaptive Management Plan) requires CVWD to coordinate with Preserve management to maximize the amount and quality of sand transport onto the Preserve, by evaluating habitat quality on the Preserve and changing the locations for upwind sand deposition or other aspects of EC SM-1.

MM SM-1 (Minimize Sand Impacts) requires best management practices (BMPs) to avoid and minimize impacts to sand and sand transport, including locations and orientation for equipment and materials that could serve as temporary or long-term barriers to sand migration.

MM SM-2 (Prepare and Implement a Sand Migration Management Plan) augments EC SM-2 (above) to guide the management of the sand resource during the construction and O&M phases of the Project; the Plan would be provided to the USACE, USFWS, and CDFW for review and comment.

Additionally, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. These would minimize damage to special-status plants and their habitat from contact with Project-related hazardous materials.

Fugitive dust control measures required for compliance with South Coast Air Quality Management District (SCAQMD) Rule 403 and 403.1 would avoid and minimize accumulation of fugitive dust on plants, including Coachella Velley milk-vetch and other special-status plants, as well as plants that provide food or support insect prey for special-status wildlife. This measure would also avoid and minimize physical irritation and harm to individual special-status wildlife, including eggs and chicks, insects, or their eggs caused by fugitive dust.

In addition, Mitigation Measures BIO-1 through BIO-9 would minimize or avoid direct and indirect impacts to special-status plants. In combination, these measures would avoid, minimize, or compensate impacts to special-status plants.

Mitigation Measure BIO-1 (Conduct Pre-construction Biological Resources Surveys) requires pre-construction biological surveys to identify locations of special-status plants, including Coachella Valley milk-vetch, as well as wildlife and nesting birds occurring at work areas. This measure also requires additional clearance surveys immediately before construction begins to ensure that any special-status resources present in the work area have been identified. Implementation of BIO-1 would inform monitoring and avoidance efforts on areas where special-status plants, special-status wildlife or wildlife sign, bat roosts, burrows, middens, and nesting birds have been found, and thereby facilitate those efforts.

Mitigation Measure BIO-2 (Conduct Biological Monitoring and Reporting) augments EC B-2 and requires qualified biologists to monitor construction activities to ensure that impacts to biological resources are avoided or minimized. Mitigation Measure BIO-2 would ensure that biologists identify sensitive biological

resources, communicate with construction personnel regarding avoidance of these resources, clearly mark areas for avoidance in the field, and halt any construction activities that will have an unauthorized adverse effect these resources. This would avoid and minimize trampling, crushing, and other damage to special-status plants that are within work areas. It would also avoid and minimize injury or mortality of special-status wildlife, including eggs and young, and loss of nests, roosts, burrows, or middens that are within work areas. This measure would also avoid and minimize loss and degradation of wildlife habitat, native vegetation, and sand habitat within work areas.

Mitigation Measure BIO-3 (Prepare and Implement a Worker Environmental Awareness Program [WEAP]) requires that Project workers receive training on the sensitive biological resources present or potentially present on the Project site and the requirements to avoid and minimize impacts to those resources. This measure would further avoid and minimize impacts to special-status species and their habitat, native vegetation, sand habitat, and sensitive biological resources by educating workers on mitigation requirements and the necessity for compliance.

Mitigation Measure BIO-4 (Minimize Native Vegetation and Habitat Loss) requires minimization of native vegetation and habitat loss. This measure would also minimize disruption of soil seed banks, sand compaction, and other adverse habitat effects that may impact special-status plants or wildlife. It would also minimize the opportunity for invasion or spread of weeds by minimizing habitat disturbances that tend to favor proliferation by invasive plants.

Mitigation Measure BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas) requires that only appropriate native species will be used for revegetation of temporary disturbance areas. This measure would avoid degradation of habitat, including habitat for special-status species, that could occur through introduction of non-native species or otherwise inappropriate plant species that may be used for erosion control, visual screening, or other purposes. This measure also requires that, in appropriate habitat, native species used for revegetation include food plants used by CVFTL and desert tortoise. This would further minimize impacts to these species by replacing or enhancing food resources.

Mitigation Measure BIO-6 (Compensate for Habitat Loss) requires off-site compensation for loss of native habitat, including habitat in downwind and downstream areas and the floodway, where the Project's direct or indirect effects to soils, vegetation, or sand transport could affect habitat for special-status plant and wildlife species. This would offset the loss of special-status species habitat and other sensitive habitat, including sand habitat, on the Project site and on the downstream and downwind areas and the floodway by requiring off-site habitat compensation.

As part of this measure, and in addition to the acquisition and preservation of the 550-acre floodway, CVWD will mitigate direct and indirect impacts to the Coachella Valley National Wildlife Refuge by preserving 32 acres of aeolian sand habitat and acquiring 24.9 acres of private lands located near Reach 3 that will be transferred to the USFWS as a land swap (see Figure 3.6-1, Land Ownership Proposed Project Alignment). The 24.9 acres of acquired lands will be considered part of the 32-acre requirement. Four acquisition parcels were identified:

- APN 695-030-013: 0.28 acres
- APN 695-030-014: 17.20 acres
- APN 695-070-011: 4.88 acres
- Parcel 695-070-015: 2.54 acres

These lands are required to be of equal or greater acreage than those disturbed due to construction and be comprised of ecologically equivalent habitat to support sensitive species.

Mitigation Measure BIO-7 (Prepare and Implement an Operations and Maintenance Plan) requires that CVWD prepare and implement an O&M Plan to avoid and minimize impacts to special-status species and native habitat during the O&M phase of the Project. This measure would avoid and minimize impacts to

special-status species and habitat, native vegetation, and sand habitat during the O&M phase by requiring pre-maintenance biological surveys, biological monitoring (as needed) during maintenance activities, on-going weed control, and measures to restrict off-highway vehicle (OHV) access.

Mitigation Measure BIO-8 (Prepare and Implement an Integrated Weed Management Plan) augments EC B-1 (Weed Abatement Program) and requires that CVWD prepare and implement an Integrated Weed Management Plan to prevent or control Project-related introduction and spread of weeds. This would avoid or minimize habitat degradation due to proliferation of invasive weeds and resulting stabilization of loose sands and avoid or minimize competition for water and nutrients between non-native weeds and special-status plants. This would also avoid or minimize competition for water and nutrients between non-native weeds and food plants used by special-status wildlife or plants that support the insect prey of special-status wildlife.

Mitigation Measure BIO-9 (Minimize and Mitigate Impacts to Special-status Plants) requires pre-construction surveys for special-status species, both in the Project Study Area and in downwind and downstream areas and the floodway where the Project's direct or indirect effects to soils, vegetation, or sand transport could affect special-status species. If greater than 10 percent of a special-status plant occurrence would be impacted by the Project, mitigation would be required through avoidance, off-site compensation, salvage, or horticultural propagation and off-site introduction, or a combination of these. This measure would avoid and minimize impacts to special-status plants by requiring that loss of individual plants on the Project and downstream and downwind areas and the floodway be avoided or compensated.

CVMSHCP Consistency

On private lands the Coachella Valley milk-vetch is a covered species under the CVMSHCP. The CVMSHCP defines Private Conservation Land as "Land owned by a non-governmental entity committed to Conservation in perpetuity through deed restriction, conservation easement, or other binding agreement satisfactory to CDFG [CDFW] and USFWS" (page xxxvi; CVCC, 2007). Direct impacts to this species is considered a covered activity and mitigated through participation in the CVMSHCP. The CVMSHCP does not specify avoidance and minimization requirements for Coachella Valley milk-vetch that would apply to the proposed Project.

On federal lands the Coachella Valley milk-vetch is not covered by the CVMSHCP and would require take authorization from the USFWS. CVWD and the USACE must obtain a "no jeopardy" opinion from the USFWS if the project would result in adverse modification to Coachella Valley milk-vetch critical habitat or may adversely affect Coachella Valley milk-vetch. The USFWS issued a Biological Opinion for the proposed Project on September 27, 2022 (see Appendix C.6). The USFWS determined that the proposed action is not likely to jeopardize the continued existence of the Coachella Valley milk-vetch. The USFWS also determined the action is not likely to destroy or adversely modify designated critical habitat for this species.

Chaparral sand-verbena and the other non-listed special-status plant species that may occur on the Project site are not covered by the CVMSHCP. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS or Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-1

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

See Section 4.5 (Sand Migration) for the complete text of the following mitigation measures:

MM SM-1 (Minimize Sand Impacts)

MM SM-2 (Prepare and Implement a Sand Migration Management Plan)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM BIO-1 **Conduct Pre-construction Biological Resources Surveys.** This mitigation measure shall apply to the pre-construction and construction phases of the Project on private and federal lands.

Lead Biologist: CVWD shall assign a contact representative (Lead Biologist, MM BIO-2) in coordination with the USACE who will be responsible for overseeing compliance with all biological resource measures, including measures required by USFWS. The contact representative will serve as primary point of contact with the USFWS. In addition, CVWD shall assign Authorized/Acceptable Biologists to perform pre-construction biological surveys at each Project work area and access route, and in the 200-foot area surrounding each work site. See MM BIO-9 through 12 for additional required species-specific authorizations.

USFWS Authorized Biologist/CVMSHCP Acceptable Biologist: CVWD shall appoint at least one Authorized Biologist/Acceptable Biologist to conduct pre-construction surveys and monitor construction and O&M activities (see additional responsibility descriptions below and MM BIO-7). An Authorized Biologist is approved by USFWS and is responsible for being aware of the latest information on USFWS protocols and guidelines for the desert tortoise, as well as handling desert tortoise (see MM BIO-12 for additional responsibility information). An Acceptable Biologist is a biologist whose name is on a list maintained by the CVCC of biologists who are acceptable to Coachella Valley Conservation Commission (CVCC), CDFW, and USFWS for the purposes of conducting surveys of Covered Species as defined in the CVMSHCP. On federal lands, the Acceptable Biologist is required to have the appropriate authorizations (desert tortoise, CVFTL, CVMV) as further described in MM BIO-9 through 12.

CVWD will submit a resume for each proposed Authorized Biologist/Acceptable Biologist, with at least three references and contact information, to the appropriate authorized officer for confirmation that the applicant meets the minimum qualifications.

The Authorized Biologist/Acceptable Biologist(s) must meet the following minimum qualifications:

- Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field.
- Thorough and current knowledge of special-status wildlife species behavior, natural history, ecology, and physiology, and demonstrate substantial field experience and training to safely and successfully conduct their required duties, especially for desert tortoise.

- Three years of experience in field biology.
- At least 1 year of field experience with biological resources found in or near the Project area.
- Meet the USFWS's current Authorized Biologist qualifications criteria (USFWS, 2009), demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the Service.

Pre-construction surveys shall be planned and implemented to identify locations of special-status plants and wildlife and nesting birds occurring at work areas, staging areas, and other Project-related disturbance area, and in adjacent buffer areas. Specific pre-construction survey methods or protocols will vary according to the resources which may be present at any given site, and according to season. At minimum, CVWD shall complete pre-construction surveys 10 days prior to beginning work in any given area and repeat the surveys if the work site remains inactive for a period of 10 days or more. During nesting season, an Authorized/Acceptable Biologist shall complete nesting bird surveys no more than four days prior to beginning work at any given area and repeat the surveys regularly so long as work continues at the site during the nesting season.

Pre-construction survey reports shall document survey methodology and results. Each pre-construction survey report shall include a list of biological resources detected at each site during the pre-construction survey along with any relevant additional details of sightings of special-status species (e.g., size, gender, apparent health, reproductive status, etc.).

CVWD also shall conduct pre-construction "sweeps" of each work site immediately prior to beginning construction or disturbance work, to ensure that any special-status resources present have been identified, and to note any vulnerable wildlife that may have entered the site. Based on the results of pre-construction surveys and sweeps, CVWD or its contractor shall observe species-specific no-disturbance buffer areas or other access or activity restrictions to minimize potential impacts to the resources, such as lizard-specific exclusionary fencing along the northern side of Avenue 38 to prevent CVFTL from accessing the Project area.

CVMSHCP/NCCP: This measure is required for private and federal lands.

MM BIO-2 **Conduct Biological Monitoring and Reporting.** This measures augments EC B-2.

Conduct Biological Monitoring and Reporting. This measure supersedes EC B-2 (Biological Monitoring and Relocation of Sensitive Species) as described in the EIR/EIS for the proposed Project. This measure applies to the construction phase of the Project on private and federal lands. Refer to MM BIO-7 for additional information on biological monitoring during the O&M phase of the Project. Roles of biologists conducting biological surveying and monitoring will include a Lead Biologist (that is also an Authorized Biologist/Acceptable Biologist as described in MM BIO-1), a Designated Desert Tortoise Biologist (see MM BIO-12), and at least one or more Authorized/Acceptable Biologist(s).

Lead Biologist: CVWD shall appoint a lead biologist in coordination with the USACE, no less than 60 days prior to the start of any ground-disturbing activities, including those occurring prior to site mobilization (e.g., geotechnical borings, etc.). This lead biologist may be the same lead biologist as described in MM BIO-1. The lead biologist will hold a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related

field; have at least three years of experience in field biology and at least one year of direct field experience with biological resources found in or near the Project area. The lead biologist shall possess the appropriate education and experience to successfully accomplish the assigned biological resources tasks.

The lead biologist will be CVWD's primary point of contact to CDFW and USFWS and other agencies regarding any biological resource issues and implementation of related mitigation measures and permit conditions throughout Project construction and post-construction restoration work. In addition, the lead biologist will be responsible for supervising and training biological monitors and preparing monitoring reports and documentation (below).

Biological Monitors (Authorized Biologist(s)/Acceptable Biologist(s): CVWD shall assign qualified biological monitors that are Authorized Biologist(s)/Acceptable Biologist(s) to the Project to monitor all work activities during the construction phase (see MM BIO-1). A Designated Desert Tortoise Biologist will also be present to conduct desert tortoise specific surveying and monitoring (see MM BIO-12).

Monitors are responsible for ensuring that impacts to special-status species, native vegetation, wildlife habitat, and sensitive or unique biological resources, including desert dune and sand field habitat, are avoided or minimized to the fullest extent safely possible. Monitors are also responsible to ensure that work activities are conducted in compliance with ECs, Mitigation Measures, permit conditions, and other Project requirements.

CVWD shall provide training to biological monitors, in addition to WEAP (see Mitigation Measure BIO-3) and prior to the monitor commencing field duties, on biological resources present or potentially present on the Project, as well as ECs, mitigation measures, permit requirements, Project protocols, and the duties and responsibilities of a biological monitor.

Biological monitors shall inform construction crews daily of any environmentally sensitive areas (ESAs), nest buffers, or other resource issues or restrictions that affect the work sites for that day. Biological monitors shall communicate with construction supervisors and crews as needed (e.g., at daily tailgate safety meetings ("tailboards"), by telephone, text message, or email) to provide guidance to maintain compliance with ECs, mitigation measures, and permit conditions. CVWD shall ensure that adequate numbers of monitors are assigned to effectively monitor work activities and that communications from biological monitors are promptly directed to crews at each work site for incorporation into daily work activities. If biological monitors are unavailable for a tailboard meeting, the construction supervisors shall communicate all ESAs, nest buffers, or other resource restrictions to crews during the meeting. CVWD shall ensure that biological monitors are provided with an accurate daily construction work schedule as well as updated information on any alterations to the daily construction work schedule. CVWD shall ensure that biological monitors are provided with up-to-date biological resource maps and construction maps in hardcopy or digital format.

Monitors shall be familiar with the biological resources present or potentially present, ESAs, nest buffers, and any other resource issues at the site(s) they are monitoring, as well as the applicable ECs, Mitigation Measures, and permit requirements. Monitors shall exhibit diligence in their monitoring duties and refrain from any conduct or potential conflict of interest that may compromise their ability to effectively carry out their monitoring duties.

Biological monitor duties and responsibilities: Throughout the duration of construction, Authorized/Acceptable Biologist(s) shall conduct biological monitoring of all work activities in the Project area, including work sites, staging areas, access roads, and any area subject to Project disturbance. All pre-construction activities (e.g., for geotechnical borings, etc.) and post-construction restoration (if any) shall also be monitored by a biological monitor or lead biologist. Refer to MM BIO-7 for a description of biological monitor duties and responsibilities during the O&M phase of the Project.

Each day, prior to work activities at each site, a biological monitor shall conduct clearance surveys ("sweeps") for sensitive plant or wildlife resources that may be located within or adjacent to the construction areas. If sensitive resources are found, the biological monitor shall take appropriate action as defined in all ECs, mitigation measures, and permit conditions. Work activities shall not commence at any work site until the clearance survey has been completed and the biological monitor communicates to the contractor that work may begin.

Biological monitors shall clearly mark sensitive biological resource areas with staking, flagging, or other appropriate materials that are readily visible and durable. The monitors will inform work crews of these areas and the requirements for avoidance and will inspect these areas at appropriate intervals for compliance with regulatory terms and conditions. The biological monitors shall ensure that work activities are contained within approved disturbance area boundaries at all times.

Biological monitors shall have the authority and responsibility to halt any Project activities that are not in compliance with applicable mitigation measures, ECs, permit conditions, or other Project requirements, or will have an unauthorized adverse effect on biological resources.

Handling, relocation, release from entrapment, or other interaction with wildlife shall be performed consistent with mitigation measures, safety protocols, permits (including CDFW and USFWS permits), and other Project requirements (and only done by an Authorized Biologist approved by USFWS, as described in MM BIO-1 and MM BIO-12).

Biological monitors shall use handling measures that are safe, practicable, and consistent with mitigation measures and permit conditions, to actively or passively relocate wildlife out of harm's way. On a daily basis, biological monitors shall inspect construction areas where animals may have become trapped, including equipment covered with bird exclusion netting (if any), and release any trapped animals. Daily inspections shall also include areas with high vehicle activity (e.g., staging areas), to locate animals in harm's way and relocate them if necessary. If safety or other considerations prevent biological monitors from aiding trapped wildlife or wildlife in harm's way, CVWD shall consult with the construction contractor, CDFW, wildlife rehabilitator, or other appropriate party to obtain aid for the animal, consistent with applicable mitigation measures.

At the end of each workday, biological monitors shall verify that all excavations, open tanks, trenches, pits, or similar wildlife entrapment hazards have been covered or have ramps installed to prevent wildlife entrapment, and communicate with work crews to ensure these structures are installed and functioning properly.

Biological monitors shall inspect any wildlife exclusion fencing daily to ensure that it remains intact and functional. Any need for repairs to exclusion fencing shall be

immediately communicated to the responsible party, and repairs shall be carried out in a timely manner, generally within one workday.

CVWD shall prepare and implement a procedure for communication among biological monitors and construction crews, to ensure timely notification (i.e., daily or sooner, as needed) to crews of any resource issues or restrictions.

Monitoring activities shall be thoroughly and accurately documented on a daily basis. CVWD shall develop protocols for documentation of monitoring prior to the initiation of construction to include:

- All special status species observations, including location of observation, location and description of Project activities in the vicinity, and any avoidance or other measures taken to avoid the species. In addition, all special-status species observations shall be reported to the California Natural Diversity Database (CNDDB).
- All non-compliance incidents, including nest buffer incursions, with resolution or remedial actions taken.
- Bird nesting activities and buffers established.
- Final post-construction compilation of permanent and temporary impact acreages by habitat.

CVMSHCP/NCCP: The Project is covered under the CVMSHCP/NCCP. However, to ensure the protection of non-covered sensitive species this measure is required for private and federal lands.

MM BIO-3 **Prepare and Implement a Worker Environmental Awareness Program (WEAP).** This mitigation measure shall apply to the construction and O&M phases of the Project on private and federal lands.

CVWD shall prepare and implement a Project-specific Worker Environmental Awareness Program (WEAP) to educate on-site workers about the Project's sensitive environmental issues. Contents of the WEAP will be coordinated with the USFWS prior to finalizing it. The WEAP shall be administered by the lead biologist or a biological monitor to all personnel on-site during the construction phase, including but not limited to surveyors, engineers, inspectors, contractors, subcontractors, supervisors, employees, monitors, visitors, and delivery drivers. If the WEAP presentation is recorded on video, it may be administered by any competent Project personnel. Throughout the duration of construction, CVWD shall be responsible for ensuring that all on-site Project personnel receive this training prior to beginning work. A construction worker may work in the field along with a WEAP-trained crew for up to five days prior to attending the WEAP. CVWD shall maintain a list of all personnel who have completed the WEAP training. Employees will sign a statement indicating that they have completed the education program and understand fully its provisions and the specific measures, terms, and conditions included in the EIR/EIS and Biological Opinion.

The WEAP shall consist of a training presentation, with supporting written materials provided to all participants.

The WEAP training shall include, at minimum:

- Overview of the Project, the jurisdictions the Project route passes through or adjacent to (e.g., CVMSHCP/NCCP, Coachella Valley Preserve) and any special requirements of those jurisdictions.
- Overview of the federal and State Endangered Species Acts, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, including the definition of "take," and the consequences of non-compliance with these acts including potential penalties (up to $25,000 in fines and 6 months in prison) for taking a federally listed threatened species. Review of the take permit authorized for the project and applicable locations
- Overview of the Project mitigation in the final EIS and biological permit requirements included in the Biological Assessment, the Biological Opinion, and any other resource agency agreements or authorizations, as well as the consequences of non-compliance with these requirements. They would also be informed of the environmental commitments, specific measures, terms and (when delivered).
- Sensitive biological resources and potential for impacts to them on the Project site and adjacent areas, including nesting birds, listed species (Coachella Valley milk-vetch, CVFTL, desert tortoise) and other special-status plants and wildlife, and sensitive habitats known or likely to occur on the Project site, Project requirements for protecting these resources, and the consequences of non-compliance. Review of the take permit authorized for the project and applicable locations.
- Sand habitats and sand transport, Project requirements for protecting these resources, and the consequences of non-compliance.
- Construction restrictions such as limited operating periods, environmentally sensitive areas (ESAs), and buffers.
- Avoidance of invasive weed introductions onto the Project site and surrounding areas, and description of the Project's Integrated Weed Management Plan (see MM BIO-8) and associated compliance requirements for workers on the site.
- Function, responsibilities, and authority of biological and environmental monitors and how they interact with construction crews.
- Requirement to remain within authorized work areas and on approved roads, with examples of the flagging and signage used to designate these areas and roads, and the consequences of non-compliance.
- Procedure for obtaining clearance from a biological monitor to enter a work site and begin work (including moving or mobilizing equipment), and the requirement to wait for that clearance.
- One-hour hold (or other method CVWD will use to halt work when necessary to maintain compliance) and the requirement for compliance.
- ESAs and associated restrictions, and other restrictions such as no grading areas, flagging or signage designations, and consequences of non-compliance.
- Nest buffers and associated restrictions and the consequences of non-compliance. Procedure and time frame for halting work and removing equipment when a new buffer is established. Discussion of nest deterrents when no active nests are found during surveys.

- Explanation that wildlife must not be harmed or harassed. Procedures for covering pipes, securing excavations, and installing ramps to prevent wildlife entrapment. What to do and who to contact if dead, injured, or entrapped animals are encountered.
- General safety protocols such as hazardous substance spill prevention, containment, and cleanup measures; fire prevention and protection measures; designated smoking areas (if any) and cigarette disposal; safety hazards that may be caused by plants and animals; and procedure for dealing with rattlesnakes in or near work areas or access roads.
- Printed training materials, including photographs and brief descriptions of all special-status plants and animals that may be encountered on the Project, including behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures.
- Contact information for CVWD, construction management, and contractor environmental personnel, and who to contact with questions.
- Training acknowledgment form to be signed by each worker indicating that they understand and will abide by the guidelines, and a hardhat sticker so WEAP attendance may be easily verified in the field.

Focused WEAP. An abbreviated version of WEAP training ("focused WEAP") may be used for individuals who are exclusively delivery drivers or visitors to the Project site, and will be provided by a qualified Project biologist, biological monitor, or environmental field staff prior to those individuals entering or working on the Project. Short-term visitors (total of five days or less per year) to the Project site who will be riding with and in the company of WEAP-trained Project personnel for the entire duration of their visit(s) are not required to attend WEAP or focused WEAP training.

WEAP lite training will provide sufficient information for the individual to understand and maintain compliance with Project mitigation measures and permit conditions. WEAP lite presentations will be tailored to the situation and emphasize Project requirements that are relevant to that situation (e.g., dust control, speed limits, and staying within Project roads and work areas for delivery drivers).

A training acknowledgment form will be signed by each participant indicating that they understand and will abide by the guidelines, and a hardhat sticker will be provided so WEAP lite attendance may be easily verified in the field. CVWD will maintain a list of personnel who have completed WEAP lite training.

WEAP Refreshers. Biological monitors or environmental field staff will periodically present brief WEAP refresher presentations at tailboards to help construction crews and other personnel maintain awareness of environmental sensitivities and requirements. A 5- to 10-minute informal talk will be presented at each of the Project's main contractor/subcontractor tailboards at least once a week.

When a contractor or subcontractor resumes work after a long break (more than six (6) consecutive calendar days with no substantial work on Project construction in the field), a biological monitor or environmental field staff will provide an extended WEAP refresher presentation (10-20 minutes) at each of the contractor/subcontractor tailboards on the first day back to work.

The monitor will note the date, contractor or subcontractor, tailboard location and time, and topic(s) discussed during the WEAP refresher and include this information in their daily monitoring log.

CVMSHCP/NCCP: The Project is covered under the CVMSHCP/NCCP. However, to ensure the protection of non-covered sensitive species this measure is required for private and federal lands.

MM BIO-4 **Minimize Native Vegetation and Habitat Loss.** This mitigation measure shall apply to the construction phase of the Project on private and federal lands. Final engineering of the Project shall minimize the extent of disturbance and removal of native vegetation and habitat, including sand habitat, to the extent safe and feasible.

To the extent feasible, vegetation removal within work areas will be minimized and construction activities will implement mowing or drive and crush access and site preparation rather than grading. To the extent feasible, stockpiling of spoils and salvaged topsoil will be located in previously disturbed areas, and will avoid native vegetation and habitat, including sand habitat and be stored in way to avoid attracting wildlife.

Prior to any construction equipment or crew mobilization at each work site, work areas will be marked with staking or flagging to identify the limits of work and will be verified by Project environmental staff. Staking and flagging will clearly indicate the work area boundaries. Where staking cannot be used, traffic cones, traffic delineators, or other markers will be used. Staking and flagging or other markers will be in place during construction activities at each work site and will be refreshed as needed. Coded flagging colors or color combinations will be consistent and uniform across the Project. All work activities, vehicles, and equipment will be confined to approved roads and staked and flagged or marked work areas.

CVMSHCP/NCCP: The Project is covered under the CVMSHCP/NCCP. However, to ensure the protection of non-covered sensitive species this measure is required for private and federal lands.

MM BIO-5 **Utilize Native Species for Revegetation of Temporary Disturbance Areas.** This mitigation measure shall apply to the construction phases of the Project on federal lands. Given the slow recovery rates of desert vegetation, it is unlikely that ecological restoration techniques can dependably establish a trend toward restoration of habitat values within a five (5) year period unless vegetation disturbance was limited to mowing. Therefore, habitat impacts (excluding impacts to sand habitat) in temporary disturbance areas will be considered permanent habitat loss and mitigated as described Mitigation Measure BIO-6.

If revegetation is necessary as determined by CVWD, revegetation in temporary disturbance areas (e.g., for erosion control or to prevent the spread of weeds or mitigation of visual impacts, etc.) shall utilize only native species appropriate for the area and habitat type. No non-native species will be planted.

Within appropriate habitat, native plants that provide foraging opportunities for Coachella Valley fringe-toed lizard and desert tortoise shall be included in seed mixes, as determined by a qualified biologist. These species may include, but are not limited to, bugseed (*Dicoria canescens*), globe mallow (*Sphaeralcea ambigua*), and dwarf white milk-vetch (*Astragalus didymocarpus*).

CVWD will coordinate all restoration activities within the federally owned Coachella National Wildlife Refuge lands with Refuge managers to ensure that the restoration activities align with Refuge-specific guidelines and management objectives.

CVMSHCP/NCCP: The Project is covered under the CVMSHCP/NCCP. This measure is only required for federal lands.

MM BIO-6 **Compensate for Habitat Loss.** The CVWD will acquire and protect approximately 550 acres of floodway lands as habitat for special-status plants and wildlife, located within the Thousand Palms Conservation Area. The floodway lands will be transferred to the CVCC for conservation and management under the CVMSHCP in support of the goals and objectives of the CVMSHCP. CVWD will ensure acquisition and protection of approximately 32 acres of aeolian sand habitat that contribute to the recovery of Coachella Valley fringe-toed lizard and suitable for other aeolian sand dependent species. Habitat compensation will be accomplished by acquisition of mitigation land or conservation easements or by providing funding for specific land acquisition, endowment, restoration, and management actions.

CVWD shall be responsible for the acquisition, initial protection and habitat improvement, of compensation lands. Alternatively, CVWD may provide funding to ~~CVAG~~ CVCC for the acquisition of mitigation lands. The compensation lands will be placed under conservation management to be funded through the terms described herein. The requirements of this mitigation measure shall be fully accomplished within five years from the completion of Project construction.

Compensation Land Selection Criteria. Criteria for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of compensation lands for impacts to biological resources shall include all of the following:

- Compensation lands shall provide habitat value that is equal to or better than the quality and function of the habitat impacted by the Project, taking into consideration soils, vegetation, topography, human-related disturbance, wildlife movement opportunity, proximity to other protected lands, management feasibility, sand source and sand transport, and other habitat values;
- To the extent that proposed compensation habitat may have been degraded by previous uses or activities, the site quality and nature of degradation must support the expectation that it will regenerate naturally when disturbances are removed;
- Be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
- Not have a history of intensive recreational use or other disturbance that might cause future erosion or other habitat damage, and make habitat recovery and restoration infeasible;
- Invasive species that might jeopardize habitat recovery and restoration, either on or immediately adjacent to the parcels under consideration, must not occur at higher density than found on the lands affected directly and indirectly by the proposed Project;
- Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat;

- Must provide wildlife movement value equal to that on the Project site, based on topography, presence and nature of movement barriers or crossing points, location in relationship to other habitat areas, management feasibility, and other habitat values;
- Have water and mineral rights included as part of the acquisition, unless CDFW and USFWS agree in writing to the acceptability of land without these rights.

Review and Approval of Compensation Lands Prior to Acquisition. Prior to the initiation of construction, CVWD will prepare and implement a Habitat Compensation Plan in coordination with USFWS and CDFW, identifying the proposed compensation lands and detailing all proposed improvement, management, protection activities. This Plan shall discuss the suitability of the proposed parcel(s) as compensation lands in relation to the selection criteria listed above.

CVMSCHP/NCCP: The Project is covered under the CVMSHCP/NCCP. This measure is ~~only~~ relevant to the portion of the project on private and federal lands.

MM BIO-7 **Prepare and Implement an Operations and Maintenance Plan.** This mitigation measure shall apply to the O&M phase of the Project for private and federal lands. CVWD, in coordination with the USACE, shall implement their existing Operations and Maintenance Plan (O&M Plan) for the Project or create a new O&M Plan, and submit it to USFWS and CDFW for review prior to the start of construction of the Project. As described in the CVMSHCP/NCCP (page 7-29), this plan will minimize impacts to CVMSHCP/NCCP covered species and natural communities and protect non-covered special status species. Additionally, the O&M Plan will also minimize impacts to species and native habitat that are not covered by the CVMSHCP/NCCP, including sand habitat.

The O&M Plan shall include, but is not limited to:

- **Pre-maintenance biological surveys and monitoring.** The O&M Plan shall specify the types of O&M activities (e.g., clearing of accumulated sand, deposition of sand, vegetation clearing, etc.) requiring pre-maintenance biological surveys. Depending on the results of the survey, biological monitoring during the O&M activity may be required to avoid or minimize impacts to special-status species and native habitat. The O&M Plan shall integrate the relevant portions of Mitigation Measures BIO-1 and BIO-2.
- **Minimize impacts.** The O&M Plan shall incorporate Mitigation Measures BIO-2 and BIO-3.
- **Weed control.** The O&M Plan shall incorporate the Integrated Weed Management Plan (Mitigation Measure BIO-8) and Mitigation Measure BIO-4.
- **Nesting birds.** The O&M Plan shall incorporate the Nesting Bird Management Plan (Mitigation Measure BIO-15).
- **Restrict OHV access.** The O&M Plan shall include methods to restrict unauthorized use of the Project facilities, with emphasis on restricting OHV access, to avoid and minimize impacts to sensitive habitats, including sand habitats, and special-status species. Any OHV restrictions (e.g., fencing) will be designed to minimize OHV access while maintaining biological connectivity and wildlife movement and sand transport.

CVMSHCP/NCCP: The Project is covered under the CVMSHCP/NCCP. However, to ensure the protection of non-covered sensitive species this measure is required for private and

federal lands. In addition, any O&M activities that occur within the indirect permanently impacted Coachella Valley Wildlife Refuge lands (see Sections 1 and 1.4) will be covered under the CVMSHCP/NCCP.

MM BIO-8 **Prepare and Implement an Integrated Weed Management Plan.** This mitigation measure shall apply to the construction and O&M phase of the Project on federal lands and will augment EC B-1 (Weed Abatement Program).

CVWD, in coordination with the USACE, shall prepare and implement an Integrated Weed Management Plan (IWMP) describing the proposed methods of preventing or controlling Project-related spread of weeds or new weed infestations. No pre-construction activities (e.g., for geotechnical borings, etc.), construction, equipment or crew mobilization, or Project-related ground-disturbing activity shall proceed until the IWMP is completed and implemented. The IWMP will be incorporated into the O&M Plan (Mitigation Measure BIO-7).

For the purposes of the IWMP, "weeds" shall include designated noxious weeds, as well as any other non-native weeds or pest plants identified on the weed lists of the California Department of Food and Agriculture or the California Invasive Plant Council. The IWMP shall be implemented throughout Project construction and O&M. The IWMP shall include the information listed in the following paragraphs.

Background. The background section shall provide an assessment of the Project's potential to cause spread of invasive non-native weeds into new areas, or to introduce new non-native invasive weeds into the Project site. This section must list known and potential non-native and invasive weeds occurring on the Project site and in the Project region, and identify threat rankings and potential consequences of Project-related occurrence or spread for each species. This assessment shall include, but is not limited to, weeds that (1) are rated high or moderate for negative ecological impact in the California Invasive Plant Inventory Database (Cal-IPC, 2021), and (2) aid and promote the spread of wildfires (such as cheatgrass, Sahara mustard, and medusa head), and (3) stabilize sand dunes and fields (such as Sahara mustard). This section shall identify goals for control of each species (e.g., eradication, suppression, or containment) likely to be found within the Project area.

Pre-construction weed inventory. CVWD shall inventory the entire Project site, including all areas subject to ground-disturbing activity, including, but not limited to, construction work sites, staging areas, and any potential new or improved access roads. Weed occurrences shall be mapped and described according to density and area covered. The map shall be updated at least once a year during the construction phase.

Pre-construction weed treatment. Weed infestations identified in the pre-construction weed inventory shall be evaluated to identify potential for Project-related spread. The IWMP shall identify any infestations to be controlled or eradicated prior to Project construction, or other site-specific weed management requirements (e.g., avoidance of soil transport and site-specific vehicle washing where threat or spread potential is high). Control and follow-up monitoring of pre-construction weed treatment sites will follow methods identified in appropriate sections of the IWMP.

Prevention. The IWMP shall specify methods to minimize potential transport of weed seeds onto the Project site, or from one section of the Project site to another. The Project site may be divided into "weed zones," based on known or likely invasive weeds in any portion of the Project site. The IWMP will specify inspection procedures for construction

materials and equipment entering the Project area. Vehicles and equipment may be inspected and cleaned at entry points to specified portions of the Project site, and before leaving work sites where weed occurrences must be contained locally. Construction equipment shall be cleaned of dirt and mud that could contain weed seeds, roots, or rhizomes. Equipment shall be inspected to ensure it is free of any dirt or mud that could contain weed seeds, and the tracks, outriggers, tires, and undercarriage will be carefully washed, if needed, with special attention being paid to axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Other construction vehicles (e.g., pick-up trucks) that will be frequently entering and exiting the site will be inspected and washed on an as-needed basis. Tools such as chainsaws, hand clippers, pruners, etc., shall be cleaned of dirt and mud before entering Project work areas.

All vehicles shall be washed off-site when possible. If off-site washing is infeasible, on-site cleaning stations will be set up at specified locations to clean equipment before it enters the work area. Wash stations shall be located away from native habitat or special-status species occurrences. Wastewater from cleaning stations will not be allowed to run off the cleaning station site. When vehicles and equipment are washed, a daily log shall be kept stating the location, date and time, types of equipment, methods used, and personnel present.

Erosion control materials (e.g., straw wattles, hay bales) must be certified free of weed seed before they are brought onto the site. The IWMP must prohibit on-site storage or disposal of mulch or green waste that may contain weed material. Mulch or green waste shall be removed from the site in a covered vehicle to prevent seed dispersal, and transported to a licensed landfill or composting facility.

The IWMP shall specify guidelines for any soil, sand, gravel, mulch, or fill material to be imported into the Project area, transported from site to site within the Project area, or transported from the Project area to an off-site location, to prevent the introduction or spread of weeds to or from the Project area.

Monitoring. The IWMP shall specify methods to survey for weeds during construction and O&M; and shall specify qualifications of botanists responsible for weed monitoring and identification. It must include a monitoring schedule to ensure timely detection and immediate control of weed infestations to prevent further spread. Surveying and monitoring for weed infestations shall occur at least two times per year, to coincide with the early detection period for early season and late season weeds (i.e., species germinating in winter and flowering in late winter or spring, and species germinating later in the season and flowering in summer or fall). It also must include methods for marking invasive weeds on the Project site, and recording and communicating these locations to weed control staff. The map of weed locations (discussed above) shall be updated at least once a year. The monitoring section shall also describe methods for post-eradication monitoring to evaluate success of control efforts and any need for follow-up control.

Control. The IWMP must specify manual and chemical weed control methods to be employed. The IWMP shall include only weed control measures with a demonstrated record of success for target weeds, based on the best available information. The plan shall describe proposed methods for promptly scheduling and implementing control activity when any weed infestation is located, to ensure effective and timely weed control. Weed infestations must be controlled or eradicated as soon as possible upon discovery, and

before they go to seed, to prevent further spread. All proposed weed control methods must minimize the extent of any disturbance to native vegetation, limit ingress and egress to defined routes, and avoid damage from herbicide use or other control methods to any environmentally sensitive areas identified within or adjacent to the Project site.

Weed infestations shall be treated at a minimum of once annually until eradication, suppression, or containment goals are met. For eradication, when no new seedlings or resprouts are observed for three consecutive, normal rainfall years, the weed occurrence can be considered eradicated and weed control efforts may cease for the site.

Manual control shall specify well-timed removal of weeds or their seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Riverside County Agricultural Commissioner, if such guidelines are available.

The chemical control section must include specific and detailed plans for any herbicide use. It must indicate where herbicides will be used, which herbicides will be used, and specify techniques to be used to avoid drift or residual toxicity to native vegetation or special-status plants and wildlife. Only state-approved herbicides may be used. Herbicide treatment will be implemented by a Licensed Qualified Applicator. Herbicides shall not be applied during or within 72 hours of predicted rain. Only water-safe herbicides shall be used in riparian areas or within channels (engineered or not) where they could run off into downstream areas. Herbicides shall not be applied when wind velocities exceed six (6) mph. All herbicide applications will follow U.S. Environmental Protection Agency label instructions and will be in accordance with federal, state, and local laws and regulations.

Reporting schedule and contents. The IWMP shall specify a reporting schedule and contents of each report that shall be prepared by CVWD to document weed control efforts.

CVMSHCP/NCCP: The Project is covered under the CVMSHCP/NCCP. This measure is required for federal lands.

MM BIO-9 **Minimize and Mitigate Impacts to Special-status Plants.** This mitigation measure will be applied to the construction and O&M phases of the Project on private and federal lands. This mitigation measure enhances EC B-3 (Avoid Impacts to Sensitive Species).

Pre-construction survey. CVWD shall conduct focused pre-construction surveys for federal- and State-listed and other special-status plants. All special-status plant species (including listed threatened or endangered species, and all CRPR 1A, 1B, 2, 3, and 4 ranked species) impacted by Project activities shall be documented in pre-construction survey reports. Surveys shall be conducted during the appropriate season in all suitable habitat located within the Project disturbance areas and access roads and within 200 feet of disturbance areas. Surveys shall be conducted by a qualified botanist. The field surveys and reporting must conform to current CDFW botanical field survey protocol (CDFW, 2018) or more recent updates, if available. The results will be submitted to USFWS within 30 days of completing the surveys. The reports shall describe any conditions that may have prevented target species from being located or identified, even if they are present as dormant seed or below-ground rootstock (e.g., poor rainfall, recent grazing, or wildfire). In some cases, follow-up surveys may be necessary to adequately evaluate impacts. Pre-construction field survey reports shall include maps showing locations of survey areas and special-status plants.

Mitigation. CVWD shall mitigate impacts to any state or federally listed plants or CRPR 1 or 2 ranked plants on federal lands or species that are not covered by the MSHCP that may be located on the Project disturbance areas where direct or indirect effects to soils, vegetation, or sand transport could affect special-status plants through one or a combination of the following strategies.

- **Avoidance of special-status plants** is the preferred strategy wherever feasible. Where avoidance is not feasible, and the Project would directly or indirectly affect more than 10 percent of a local occurrence on federal lands or to non-covered species,[2] by either number of plants or extent of occupied habitat, CVWD shall prepare and implement a mitigation plan to consist of off-site compensation, salvage or horticultural propagation, and off-site introduction (see MM BIO-5 and MM BIO-7).
- **Avoidance.** Where feasible, Project work areas shall be located to avoid or minimize impacts to special-status plants. Effective avoidance through Project design shall include a buffer area surrounding each avoided occurrence, where no Project activities will take place. The buffer area shall be clearly staked, flagged, and signed for avoidance prior to the beginning of ground-disturbing activities, and maintained throughout the construction phase. The buffer zone shall be of sufficient size to prevent direct or indirect disturbance to the plants from construction activities, erosion, inundation, or dust. The size of the buffer will depend upon the proposed use of the immediately adjacent lands and the plant's ecological requirements (e.g., sunlight, moisture, shade tolerance, water availability, edaphic physical and chemical characteristics), to be specified by a qualified biologist or botanist. At minimum, the buffer for tree or shrub species shall be equal to twice the drip line (i.e., two times the distance from the trunk to the canopy edge) to protect and preserve the root systems. The buffer for herbaceous species shall be a minimum of 50 feet from the perimeter of the occupied habitat or the individual. If a smaller buffer is necessary due to other Project constraints, CVWD, in coordination with the USACE, shall develop and implement site-specific monitoring and put other measures in place to avoid the take of the species if possible, in consultation with USFWS and CDFW.
- **Off-site compensation.** CVWD shall provide compensation lands for impacts to federal lands or for non-covered species consisting of habitat occupied by the impacted CRPR 1 or 2 ranked plants at a 1:1 ratio of acreage and number of plants for any occupied habitat affected by the Project. Occupied habitat will be calculated on the Project site and on the compensation lands as including each special-status plant occurrence and a surrounding 100-foot buffer area. Off-site compensation shall be incorporated into the Project's Habitat Compensation Plan (Mitigation Measure BIO-6). Compensation acreage for special-status plants may be included ("nested" or "layered" within the 550-acre floodway) in compensation land also designated to offset other impacts such as habitat loss for special-status wildlife.
- **Salvage.** CVWD shall consult with horticulturists at a qualified institution, such as Rancho Santa Ana Botanic Garden, regarding the feasibility and likely success of salvage efforts for each species. If salvage is deemed to be feasible, then CVWD shall prepare and implement a Special-status Plant Salvage and Relocation Plan (Plan) to be reviewed by CDFW and USFWS, prior to direct or indirect disturbance of any occupied habitat.

[2] An occurrence for a plant is defined as any population or group of nearby populations located more than 0.25 miles from any other population (CNPS, 2010).

The goal shall be establishment of a new viable occurrence, equal or greater in extent and numbers to the affected occurrence. The Plan shall include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether an individual plant is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting plants or seed banks, to retain intact soil conditions and maximize success; for shrubs, cacti, and yucca, a requirement to mark each plant to identify the north-facing side prior to transport, and replant it in the same orientation; (f) details regarding storage of plants or seed banks for each species; (g) location of the proposed recipient site, and detailed site preparation and plant introduction techniques for top soil storage, as applicable; (h) a description of the irrigation, weed control, and other maintenance activities; (i) success criteria, including specific timeframe for survivorship and reproduction of each species; and (j) a detailed monitoring program, commensurate with the Plan's goals.

Annual monitoring and documentation of salvaged plants shall include, but not be limited to, details of plants salvaged, stored, and transplanted (salvage and transplanting locations, species, number, size, condition, etc.); adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation.

- **Horticultural propagation and off-site introduction.** If salvage and relocation is not believed to be feasible for special-status plants, then CVWD shall consult with Rancho Santa Ana Botanic Garden, or another qualified entity, to develop an appropriate experimental propagation and relocation strategy, based on the life history of the species affected. The Plan shall include at minimum: (a) collection and salvage measures for plant materials (e.g., cuttings), seed, or seed banks, to maximize success likelihood; (b) details regarding storage of plant, plant materials, or seed banks; (c) location of the proposed propagation facility, and proposed methods; (d); time of year that the salvage and other practices will occur (e) success criteria; and (f) a detailed monitoring program, commensurate with the Plan's goals.

CVMSHCP/NCCP: Impacts to covered special-status plants on private land are covered under the CVMSHCP/NCCP. This measure is required for impacts to special-status plants not covered under the CVMSHCP/NCCP and for plants located on federal land.

CEQA Significance Conclusion

A single Coachella Valley milk-vetch was observed within Reach 4 of the Study Area during 2010 surveys, but it was not found in 2013 or 2016. Potential direct effects to Coachella Valley milk-vetch, if it occurs on the site during construction, would be unlikely to affect more than a few individual plants due to very limited area of occupied habitat in the Study Area. Construction and O&M of the Project could directly affect Coachella Valley milk-vetch and its habitat, should it occur on or near the Project site or downstream or downwind of the Project site or in the floodway.

A few chaparral sand-verbena were observed in Reach 4 of the Project Study Area during surveys. No other non-listed special status plants were observed, although several species could occur, with probabilities ranging from low to high. Depending on severity, impacts to chaparral sand-verbena or other special-status plant species could be significant without mitigation.

Due to its status as a federally listed endangered species, impacts to Coachella Valley milk-vetch would be significant without mitigation. On private lands the Coachella Valley milk-vetch is a covered species under the CVMSHCP. Direct impacts to this species is considered a covered activity and impacts to this species

are mitigated through participation in the CVMSHCP. On federal lands the Coachella Valley milk-vetch is not covered by the CVMSHCP and mitigation would be required to reduce or avoid impacts to this species.

A series of Environmental Commitments and Mitigation Measures would avoid or minimize or compensate for impacts to Coachella Valley milk-vetch and other special-status plants. These include: EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), and BIO-9 (Minimize and Mitigate Impacts to Special-status Plants). In combination, these would reduce potential impacts to Coachella Valley milk-vetch to a less-than-significant level (Class II).

Threatened, Endangered, and Special-status Wildlife

CVFTL was observed in Reach 4 and to some degree there is suitable habitat for this species in portions of Reaches 1, 3, and 4. No other listed wildlife species were observed during surveys. Two other State or federally listed species or candidates for listing could occur in the Project Study Area. These include desert tortoise and Townsend's big-eared bat. Flat-tailed horned lizard was recently petitioned as a candidate species for listing however that petition was denied. The species remains a CDFW Species of Special Concern.

There are no known threatened or endangered invertebrates likely to occur in the Project Study Area. There is no aquatic habitat in the Project Study Area and no threatened or endangered fish or amphibians are likely to occur.

Reptiles

Impact BIO-2: The Project could result in loss or disturbance to Coachella Valley fringe-toed lizard or flat-tailed horned lizard.

Coachella Valley fringe-toed lizard (CVFTL) are known to occur in Reach 4 and are known from the area. CVFTL is federally listed as threatened and State-listed as endangered and is covered under the CVMSHCP. It is found only in the Coachella Valley in blowsand habitat and in sandy inter-dune areas of aeolian sand hummock habitat. Populations fluctuate with annual precipitation. During extended droughts, its numbers fall to near zero, but rebound during years of average rainfall. Threats to this species are habitat loss, disruption of sand transport and resulting habitat degradation, non-native invasive plants, and OHV use.

Habitat assessments conducted in 2013 and re-verified in 2016 identified areas of high, moderate, and low habitat suitability in the Study Area (see Section 3.6.1.6 and Figures 3.6-8 through 3.6-10). Suitable habitat for CVFTL is found within Reaches 1, 3, and 4 of the Project Study Area. The most likely areas to encounter this species is in the sandy fields of Reaches 3 and 4. While Reach 1 supports pockets of sand and small sand hummocks the likelihood of encountering animals in this Reach are low compared to other areas. This species may also occur in the dunes that have formed along the tamarisk windrows south of Avenue 38. Portions of the Project site are also within designated critical habitat for CVFTL (see Figure 3.6-3, Vegetation Cover Reach 1 and 2 Alignments). No other designated critical habitat for wildlife species is located on the Project site.

The flat-tailed horned lizard (FTHL) is a CDFW Species of Special Concern and is also covered by the CVMSHCP. It has been proposed for federal listing, but those proposals have been withdrawn because threats to the species are not as significant as earlier believed (USFWS, 2011). The Project Study Area provides suitable habitat for FTHL in Reaches 3 and 4, and this species is known from this area. FTHL was not observed during the surveys.

Construction and O&M of the Project could directly affect CVFTL, FTHL, and their habitat, should either species occur on or near the Project site or downstream or downwind of the Project site or in the floodway, by mortality due to collisions with vehicles or heavy equipment, loss or degradation of habitat, fugitive dust, release of hazardous materials, sand compaction, increased noise and disturbance, alterations to upstream or downstream hydrology leading to alteration of habitat (e.g., removing surface or soil water source, or causing inundation of an upland species occurrence), and disruption of fluvial and aeolian sand transport. Indirect impacts include increased human presence, including OHV use, and the introduction and spread of invasive weeds (particularly Sahara mustard) that stabilize sand dunes, outcompete food plants, and do not support the lizard's insect prey. The proposed Project could have similar direct and indirect effects on CVFTL critical habitat on or near the Project site, or downstream or downwind of the Project site or in the floodway.

Construction and O&M activities that result in harassment or mortality of either species, or the loss or degradation of its habitat would be adverse impacts.

Construction of the Project would result in temporary disturbance to 48.65 acres along the levees and the permanent loss of 26.78 acres of sand dune habitat that could support CVFTL. Potential direct effects to CVFTL or FTHL would occur in and around the large sand fields near Reach 3 and 4. However, most of this habitat is located along disturbed road edges or areas that are currently subject to disturbance from off highway vehicle use, illegal dumping, the placement of lawn clippings, and existing maintenance operations (i.e., sand removal). Portions of Reach 3 span disturbed areas including an access road and ruderal field before entering the Classic Club golf course. Similarly, most of Reach 4 would be in the present alignment of Avenue 38. Construction of the project is not expected to occur in most the large dunes located within the Preserve. Most of the habitat loss would occur south of Avenue 38 where sand fields, and dunes also occur. Construction of the Project and the placement of fill in these areas is not expected to impact most of the large dunes in this area but lizards could be present in the level areas between the dunes.

Construction of the Project would also result in the temporary disturbance of 23.77 acres and the permanent loss of 85.72 acres designated critical habitat for CVFTL (see Figure 3.6-2, Critical Habitat). However, the boundary of the designated critical habitat extends beyond the limits of the species' distribution to include the sand source, which is essential in maintaining aeolian sand habitat (USFWS, 1985). Most of the project's potential effects to designated critical habitat would be to this sand source area rather than to occupied or suitable habitat (see Section 3.6.1.6). For example, even in Reach 4 most of the impact would occur to existing road surfaces or degraded habitat south of the Refuge.

Construction of the Project is not expected to adversely affect the wind corridor and may result in beneficial affects overtime by trapping sediment that would otherwise be lost to the system as storms carry blowsand out of the wind corridor along the many drainages crossed by the levees. Similarly, blowsand trapped in the levees or channels would be periodically removed and placed in the wind corridor above the Preserve. Overtime the placement of the levee and channels may also hinder OHV use particularly in Reach 3 where OHV use is common along the western edge of the Refuge. By blocking the dirt road in this location, it may reduce vehicle traffic in areas that could support plants and reduce impacts to portions of the Thousand Palms Conservation Area.

As a part of the proposed project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). During Project O&M, the CVWD would transport sand removed from the project facilities (accumulated along the levees and channels) to the wind corridor upwind of suitable aeolian sand habitat, for aeolian transport onto the Preserve (Section 2.2.3). These two components of the proposed Project would serve to protect and manage aeolian sand habitat for CVFTL and FTHL. Land acquisition in the floodway could offset direct impacts if the acquired land is managed and maintained as habitat for special-status species (e.g., as aeolian sand habitat or sand transport area). Construction of the levees would also prevent the transport of sediment out of the wind corridor as storms movement sediment to downstream areas. This material would be trapped by the levels and become available for long term sand replenishment to the Preserve. As compared to current conditions, implementation of the proposed Project may have long term benefits to CVFTL by increasing the supply of sand moving into the wind corridor. Lancaster (2015) found that construction of the proposed Project will increase sand supply by 9 – 14 percent, mainly because of the diversion of water and sediment to the east and southeast to the primary sand deposition area by the levee of Reach 1 (See Section 4.5 Sand Migration and Appendix C.1).

In addition, CVWD would implement Environmental Commitments found in Section 2.2.4. The Environmental Commitments that would serve to mitigate potential impacts to CVFTL and FTHL are listed and summarized below. In addition to these Environmental Commitments, this EIR/EIS identifies Mitigation Measures that would mitigate potential impacts to both species. Several of the Mitigation Measures are identified in other sections of the EIR/EIS and summarized here. The biological resources measures are listed below and their full text is presented elsewhere in this section. CVFTL is generally dependent on aeolian sand habitat; thus, Environmental Commitments and Mitigation Measures related to sand migration would contribute to overall mitigation of CVFTL and FTHL impacts.

To further reduce impacts to both species, CVWD would implement EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), and EC B-3 (Avoid Impacts to Sensitive Species). In addition, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. This would avoid and minimize any damage to CVFTL, FTHL, and their habitat, food plants, and insect prey from contact with Project-related hazardous materials.

Mitigation Measures BIO-1 through BIO-8 (see Impact BIO-1), as well as BIO-10 and BIO-11 would minimize or avoid direct and indirect Project impacts to CVFTL and FTHL. In combination, these measures would avoid, minimize, or compensate for impacts to both species.

Mitigation Measure BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan) requires a number of measures to avoid and minimize impacts to wildlife, including enforcing vehicle speed limits, minimizing noise, securing water tanks to prevent wildlife entrapment and drowning and prevent water subsidies to predators, removing trash to prevent food subsidies to predators, and securing excavations to prevent wildlife entrapment. This measure also requires work to be conducted during daylight hours as feasible and night lighting (if any) be directed downward and away from habitat. A Wildlife Protection and Relocation Plan (WPRP) will be prepared to provide guidance and protocols when avoiding or handling sensitive species that are located within the proposed Project area. This measure would avoid and minimize impacts to special-status wildlife by proactively addressing issues that may result in wildlife disturbance, injury, or death.

Mitigation Measure BIO-11 (Conduct Coachella Valley Fringe-toed Lizard and Flat-tailed Horned Lizard Surveys, Monitoring, and Avoidance) requires surveys for CVFTL and FTHL, monitoring of construction by

a qualified biologist, and installation of exclusion fencing around work areas. This measure would avoid and minimize mortality of individual CVFTL and FTHL by ensuring that a qualified biologist is on-site during construction and that work areas have been surveyed for the presence of CVFTL and FTHL, and by physically excluding lizards from work areas and relocating any individual found within a work area.

CVMSHCP Consistency

On private lands the CVFTL and FTHL are covered species under the CVMSHCP. Direct impacts to these species are considered a covered activity and mitigated through participation in the CVMSHCP. The CVMSHCP does not specify avoidance and minimization requirements for either species that would apply to the proposed Project. Potential impacts to CVTHL or FTHL, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS or Appendix C.5.

On federal lands the CVFTL is not covered by the CVMSHCP and would require take authorization from the USFWS. CVWD and the USACE must obtain a "no jeopardy" opinion from the USFWS if the project would result in adverse modification to CVFTL critical habitat or may adversely affect CVFTL. Then CVWD must obtain an Incidental Take Permit (ITP) for CVFTL from CDFW per the California Endangered Species Act (CESA) Section 2081. The USFWS issued a Biological Opinion for the proposed Project on September 27, 2022 (see Appendix C.6). The USFWS determined that the proposed action is not likely to jeopardize the continued existence of the CVFTL. The USFWS also determined the action is not likely to destroy or adversely modify designated critical habitat for this species.

ECs and Mitigation Measures Applicable to Impact BIO-2

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-1 (Conduct Pre-construction Biological Resources Surveys)

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

MM BIO-10 **Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan.** CVWD shall undertake the following measures during the construction and O&M phases of the Project on private and federal lands to avoid or minimize impacts to wildlife resources. This mitigation measure enhances EC B-3 (Avoid

Impacts to Sensitive Species). A Wildlife Protection and Relocation Plan (WPRP) will be prepared to provide guidance and protocols when avoiding or handling sensitive species that are located within the proposed Project area. The following section summarizes some of the guidelines to be included within the WPRP. The WPRP will be prepared in coordination with representatives from the different Conservation Areas as described in Sections 1.3 and 1.4, above.

Impacts to nesting birds are addressed separately in Mitigation Measure BIO-15 (Prepare and Implement a Nesting Bird Management Plan). Additionally, permanent wildlife ramps shall be incorporated into the Project design and maintained during the O&M phase, as described below.

- **Minimize traffic impacts.** CVWD shall specify and enforce a maximum 15 mile per hour vehicle speed limit on access roads within the Project and vicinity, not including public roadways. Scrapers may need to operate at higher speeds while excavating soils. No Project-related pedestrian or vehicle traffic shall be permitted outside defined work site boundaries (as marked on the site according to Mitigation Measure BIO-4 (Minimize Native Vegetation and Habitat Loss).
- **Minimize impacts to nocturnal wildlife.** CVWD shall restrict work to daylight hours, as feasible, in order to avoid nighttime activities that may impact nocturnal species. Exceptions may be made during the application of slurry or concrete during periods of high heat. Night lighting, if and when used, shall be designed, installed, and maintained to prevent side casting of light towards surrounding habitat.
- **Avoid use of toxic substances.** Soil bonding and weighting agents used for dust suppression on unpaved surfaces shall be non-toxic to wildlife and plants.
- **Minimize noise and vibration impacts.** To minimize disturbance to wildlife nesting or breeding activities in surrounding habitat, unnecessary noise and vibration (e.g., blaring radios, etc.) shall be avoided.
- **Water.** Potable and non-potable water sources such as tanks, ponds, and pipes shall be covered or otherwise secured to prevent animals (including birds) from entering. Prevention methods may include storing all water within closed tanks, covering open storage ponds or tanks with 2-centimeter netting, or other means, as applicable. Water applied to dirt roads and construction areas for dust abatement shall use the minimal amount needed to meet safety and air quality standards and avoid puddling. Water sources (e.g., hydrants, tanks, etc.) shall be checked periodically by biological monitors to ensure they are not creating open water sources by leaking or consistently overfilling trucks.
- **Worker guidelines.** All trash and food-related waste shall be contained in vehicles or covered trash containers and removed from the site regularly. Workers shall not feed wildlife or bring pets to the Project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons.
- **Wildlife netting or exclusion fencing.** CVWD may install temporary or permanent netting or fencing around equipment, work areas, or Project facilities to prevent wildlife exposure to hazards such as toxic materials or vehicle strikes or prevent birds from nesting on equipment or facilities. Bird deterrent netting shall be maintained free of large holes and be deployed and secured on the equipment in a manner that, insofar as possible, prevents wildlife from becoming trapped inside the netted area or within

the excess netting. The biological monitor shall inspect netting (if installed) daily. The biological monitor shall inspect exclusion fences (if installed) weekly and shall inform CVWD of any needed repairs; CVWD shall promptly repair any damage to the exclusion fencing.

- **Wildlife entrapment.** Project-related excavations greater than 6 inches deep shall be secured to prevent wildlife entry and entrapment. Holes and trenches shall be back-filled, securely covered, or fenced. Excavations that cannot be fully secured shall incorporate appropriate wildlife ramp(s) at a slope of no more than a 3:1 ratio (horizontal: vertical, equivalent to a 33.3 percent or 18.4-degree slope), or other means to allow trapped animals to escape. Biological monitors shall provide guidance to construction crews to ensure that wildlife ramps or other means are sufficient to allow trapped animals to escape. At the end of each workday, a biological monitor shall document that excavations have been secured or provided with appropriate means for wildlife escape.
- Project structures that pose a wildlife entrapment hazard and have sides with a slope steeper than 1:1, including but not limited to channels and basins, shall incorporate permanent wildlife ramps into the structure design. Structures with a slope of 1:1 or less steep do not require wildlife ramps. For structures that require wildlife ramps, at least one ramp shall be provided for each channel, basin, or other structure. Channels shall have one or more ramps for every half-mile of contiguous channel length. Basins or similar structures shall have one or more ramps for every one-half acre of area. A biologist shall review the wildlife ramp design prior to implementation to ensure that it is sufficient to allow trapped animals to escape. Wildlife ramps installed in permanent structures shall be maintained during the O&M phase to ensure continued functionality.

  All pipes or other construction materials or supplies shall be covered or capped in storage or laydown areas. No pipes or tubing shall be left open either temporarily or permanently, except during use or installation. Any construction pipe, culvert, or other hollow materials shall be inspected for wildlife before it is moved, buried, or capped.
- **Dead animals.** Dead animals of non-special-status species found on Project roads or work areas shall be reported to the appropriate local animal control agency within 24 hours. A biological monitor shall safely move the carcass out of the road or work area as needed. Dead animals of special-status species found on Project roads or work areas shall be reported to CDFW within one workday and the carcass handled as directed by CDFW.
- **Injured wildlife.** CVWD shall create and implement guidelines for dealing with injured or entrapped wildlife found on or near Project roads or work areas, whether or not the injuries are Project-related, and provide these guidelines to all biological monitors. CVWD shall ensure that one or more qualified biological monitors receive training in the safe and proper handling and transport of injured wildlife and are provided with the appropriate equipment. These trained and equipped monitors shall be available to capture and transport injured wildlife to a local wildlife rehabilitator or veterinarian as needed. If an animal is entrapped, a qualified biological monitor shall free the animal if feasible, or work with construction crews to free the animal, in compliance with applicable safety regulations and Project requirements. If biological monitors cannot free the animal or the animal is too large or dangerous for monitors to handle, CVWD shall contact and work with a local wildlife rehabilitator, animal control, CDFW, or other

qualified party to obtain assistance for the animal as soon as possible. CVWD shall bear the costs of veterinary treatment and rehabilitation for any injured wildlife found on or near Project roads or work areas and any wildlife injured by Project-related activities. Additionally, any entrapped or injured special-status species found on Project roads or work areas shall be reported to the appropriate resource agency within one workday.

- **Sidewinders, rattlesnakes, and other snake guidelines.** Prior to the start of construction, CVWD shall prepare and implement guidelines within a Wildlife Protection and Relocation Plan for handling sidewinders, rattlesnakes, or other snakes found in or near Project work areas and access roads and provide these guidelines to all biological monitors, safety staff, and other personnel. Killing or harming rattlesnakes or other wildlife is not authorized. In the Wildlife Protection and Relocation Plan, CVWD will coordinate with Refuge managers to develop protocol aligned with any National Wildlife Refuge-specific guidelines for handling or relocation wildlife while working within Refuge lands.

CVMSHCP/NCCP: The Project is covered under the CVMSHCP/NCCP. However, to ensure the protection of non-covered sensitive species this measure is required for private and federal lands.

MM BIO-11 **Conduct Coachella Valley Fringe-toed Lizard and Flat-tailed Horned Lizard Surveys, Monitoring, and Avoidance.** This mitigation measure enhances the surveying and monitoring requirements as described in MM BIO-2 and MM BIO-7, and will be applied to the pre-construction, construction, and O&M phases of the proposed Project as needed.

Surveys for Coachella Valley fringe-toed lizard and flat-tailed horned lizard shall be conducted during the appropriate seasons (May 1 through the end of summer) and conditions for species identification on federal lands. The duration of the surveys shall coincide with the duration of construction activities in potential habitat for these species during the summer season. Surveys shall be conducted in appropriate habitat in all Project disturbance areas and within 500 feet of these areas on federal lands, and as required by Mitigation Measure BIO-1. Results of the surveys shall be submitted to USFWS within 30 days of completion.

Biological monitoring will occur as specified in Mitigation Measure BIO-2. The monitor shall be a qualified biologist with the appropriate experience and permits (as needed) to recognize and handle Coachella Valley fringe-toed lizard and flat-tailed horned lizard, as further outlined in the WPRP (MM BIO-10).

In work areas within ranked as high suitable habitat, exclusionary fencing that does not allow lizards to enter the work areas shall be constructed around the perimeter of each of the work areas if required by the USFWS. Any lizards found within the barrier shall be relocated to appropriate habitat outside of the work areas by the qualified biologist. The fence or barrier will be maintained as needed to ensure its effectiveness.

To the extent feasible, all construction activities within suitable habitat will be conducted during the active season, between April 1 and October 31. Construction activities in suitable habitat may be extended beyond the active season in consultation with the USFWS.

CVMSHCP/NCCP: The Project is covered under the CVMSHCP/NCCP. This measure is required for federal lands.

CEQA Significance Conclusion

CVFTL was observed in the Project Study Area during surveys, and FTHL has a high potential to occur in Reach 4 and portions of Reach 3. Impacts to either species would be significant without mitigation. On private lands the CVFTL and FLTH are covered species under the CVMSHCP. Direct impacts to these species is considered a covered activity and impacts are mitigated through participation in the CVMSHCP. On federal lands the CVFTL and FLTH are not covered by the CVMSHCP and mitigation would be required to reduce or avoid impacts to these species.

Implementation of EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan), and BIO-11 (Conduct Coachella Valley Fringe-toed Lizard and Flat-tailed Horned Lizard Surveys, Monitoring, and Avoidance) would reduce impacts to CVFTL and FTHL to a less-than-significant level (Class II).

Impact BIO-3: The Project could result in loss or disturbance to desert tortoise.

The desert tortoise is a federal and State-listed threatened species and is covered under the CVMSHCP. The Project Study Area lies within the known range of desert tortoise, although no tortoise was observed during surveys. The area is not considered a survey area under the CVMSHCP and the only potential sign were several unoccupied degraded burrows that may have been desert tortoise near Reach 1 (see Section 3.6.1.6). Suitable habitat occurs in all the reaches, although much of this habitat is only marginally suitable due to sandy soil that will not support burrows, proximity to development, roads, and OHV use. Desert tortoise has a low potential for occurrence in the Study Area, if present, it would be found in low numbers.

Construction and O&M of the Project has a very low potential to directly affect desert tortoise or its habitat, near the Project site, downstream or downwind of the Project site, or in the floodway. The primary impacts would be in the form of permanent habitat loss in the footprint of the levees. Additional direct impacts could result from mortality due to collisions with vehicles or heavy equipment, harassment due to handling or relocation of tortoises (see Mitigation Measure BIO-12: Conduct Desert Tortoise Surveys, Monitoring, and Avoidance and prepare a Desert Tortoise Relocation Plan), crushing of burrows, fugitive dust, or release of hazardous materials; alterations to upstream or downstream hydrology leading to alteration of habitat (e.g., removing surface or soil water source, or causing inundation of an upland species occurrence); and increased noise and disturbance. Indirect impacts could include the introduction and spread of invasive weeds, providing predator subsidies, and increased human presence, including OHV use.

Construction and O&M activities that result in harassment, mortality, or the loss and degradation of habitat utilized by desert tortoise would be considered an adverse impact. On private lands desert tortoise is a covered species under the CVMSHCP. Direct impacts to this species is considered a covered activity and impacts to this species are mitigated through participation in the CVMSHCP. On federal lands the desert tortoise is not covered by the CVMSHCP and mitigation would be required to reduce or avoid impacts to this species should they occur.

To reduce impacts to desert tortoise, CVWD would implement EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), and EC B-3 (Avoid Impacts to Sensitive Species). In addition, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. This would avoid and minimize any damage to desert tortoise and its habitat from contact with Project-related hazardous materials.

In addition to the ECs, Mitigation Measures BIO-1 through BIO-8 (see Impact BIO-1), BIO-10 (see Impact BIO-2), and BIO-12 and BIO-13 (below) would minimize or avoid direct and indirect Project impacts to desert tortoise.

Mitigation Measure BIO-12 (Conduct Desert Tortoise Surveys, Monitoring, and Avoidance and Prepare a Desert Tortoise Relocation Plan) requires surveys for desert tortoise and monitoring of construction by a qualified biologist. It further requires that desert tortoises found within work areas be allowed to leave on their own or be relocated out of harm's way by a qualified and permitted biologist. Additionally, Project personnel would be required to check for desert tortoises before moving vehicles or equipment. A Desert Tortoise Relocation Plan will outline approved protocol for excavating burrows and relocating any desert tortoise found within the Project site in accordance with the *Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance* (June 2020). This measure would avoid and minimize mortality of desert tortoise by ensuring that a qualified biologist is on-site during construction and that work areas have been surveyed for the presence of desert tortoise, and by relocating any individual found within a work area or allowing it to leave on its own. Desert tortoises may shelter in the shade of vehicles or equipment, and this measure would avoid and minimize mortality of desert tortoise by requiring vehicles and equipment be checked for desert tortoise before moving.

Mitigation Measure BIO-13 (Prepare and Implement Raven Monitoring, Management, and Reporting Plan) requires the preparation and implementation of a Raven Monitoring, Management, and Reporting Plan and monetary contribution to the USFWS Regional Raven Management Program. Raven populations in the desert are artificially high due to human presence that provides subsidies to ravens. These subsidies are water or food sources or perching, roosting, or nesting sites (e.g., fences, structures, etc.) that would not naturally be present. Ravens prey on juvenile desert tortoises. Young tortoises cannot easily escape predators and, until about age 5 or 6, their shells are soft enough to be punctured by a raven bill. Large numbers of juvenile tortoise shells have been found beneath raven nests throughout the desert (Kristan and Boarman, 2003). Implementation of a Raven Plan would avoid and minimize raven-caused mortality of juvenile desert tortoises by requiring management practices to avoid and minimize Project-related raven subsidies. Contribution to the Regional Raven Management Program would compensate for any Project-related raven subsidies by supporting raven control throughout the region.

CVMSHCP Consistency

On private lands the desert tortoise are covered species under the CVMSHCP. Direct impacts to these species are considered a covered activity and mitigated through participation in the CVMSHCP. The CVMSHCP specifies avoidance and minimization requirements for desert tortoise within CVMSHCP modeled desert tortoise habitat. However, there is no CVMSHCP modeled desert tortoise habitat within the Project's temporary or permanent disturbance areas or in downstream areas or the floodway and the CVMSHCP avoidance and minimization requirements for desert tortoise do not apply. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS and Appendix C.5.

On federal lands the desert tortoise is not covered by the CVMSHCP and would require take authorization from the USFWS. CVWD and the USACE must obtain a "no jeopardy" opinion from the USFWS if the project

adversely affect desert tortoise. CVWD must obtain an Incidental Take Permit (ITP) from CDFW per the California Endangered Species Act (CESA) Section 2081. The USFWS issued a Biological Opinion for the proposed Project on September 27, 2022 (see Appendix C.6). The USFWS determined that the proposed action is not likely to adversely affect desert tortoise.

ECs and Mitigation Measures Applicable to Impact BIO-3

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-1 (Conduct Pre-construction Biological Resources Surveys)

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

See Impact BIO-2 for the complete text of the following mitigation measure:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

MM BIO-12 **Conduct Desert Tortoise Surveys, Monitoring, and Avoidance and Prepare a Desert Tortoise Relocation Plan.** The CVWD will assign a USFWS-approved Designated Desert Tortoise Biologist who will oversee all pre-construction, construction, and O&M activities that could result in take of desert tortoise. The biologist will be available to accompany each work crew to ensure that tortoises, burrows, and habitat are not disturbed during these activities to the extent possible. Desert tortoise shall be handled only by a USFWS/ CDFW permitted and authorized biologist (Authorized Biologist), who is also an Acceptable Biologist (see MM BIO-1 and MM BIO-2), following appropriate USFWS protocols and in compliance with appropriate regulatory permits. If a live tortoise is in imminent danger of harm, and an Authorized Biologist is not readily available, a crew member will need to notify the Authorized Biologist (MM BIO-3). A biological monitor, who is also an Authorized Biologist and an Acceptable Biologist, shall monitor construction activities in all areas with the potential to support desert tortoise.

Methods for clearance surveys, exclusion fence specification and installation (if any), tortoise handling, artificial burrow construction, egg handling, and other procedures shall be consistent with those described in the USFWS (2009) *Desert Tortoise Field Manual* or more current guidance provided by CDFW and USFWS.

Within suitable habitat for desert tortoise, an Acceptable Biologist shall survey the Project area for desert tortoise burrows and pallets within five (5) days preceding the initial start of construction on private and federal lands. Follow-up surveys shall also be conducted within fourteen (14) days preceding additional construction after a gap in significant construction activities of 60 calendar days or more. Surveys shall include 100 percent of the area to be disturbed and a surrounding buffer of 200 feet.

Subject to authorization by CDFW and USFWS, tortoise burrows and pallets encountered within the disturbance area (if any) shall be conspicuously flagged by the surveying biologist(s) and avoided during construction activities. A Desert Tortoise Relocation Plan will outline approved protocol for excavating burrows and relocating any desert tortoise found within the Project site in accordance with the *Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance* (June 2020).

Project personnel shall inspect for desert tortoises under parked vehicles or equipment prior to moving same. If a desert tortoise is found beneath a vehicle or equipment, the vehicle or equipment shall not be moved or started until the tortoise has voluntarily moved to a safe distance away. If the tortoise does not move on its own accord after 20 minutes, the tortoise may be moved by an Authorized and Acceptable Biologist, subject to authorization by CDFW and USFWS.

If a desert tortoise is found in a work area, the tortoise shall be allowed to passively traverse the site while construction in the immediate area is halted. If the tortoise does not move out of harm's way after 20 minutes, the tortoise may be moved by an Authorized and Acceptable Biologist, subject to conditions and authorization by CDFW and USFWS.

Subject to authorization by CDFW and USFWS, desert tortoises shall be moved the minimum distance possible within appropriate habitat (less than 300 m). A Desert Tortoise Relocation Plan will describe all protocols. In general, desert tortoise will be moved a distance of less than 300 m (*Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance, June 2020*). Desert tortoises that are moved shall be placed in the shade of a shrub or in a natural unoccupied burrow similar to the hibernaculum in which it was found or in an artificially constructed burrow following the protocol provided by the Fish and Wildlife Service. After being moved, the desert tortoise shall be monitored to ensure its safety. Any time a tortoise is handled, the Authorized Biologist shall take photographs and record pertinent data in their daily monitoring log. Tortoises showing symptoms of Upper Respiratory Disease Syndrome will be, at the discretion of the Corps: (1) provided to research or translocation projects approved and permitted by the Fish and Wildlife Service; (2) provided to educational facilities holding appropriate State and Federal permits; or (3) made available for adoption.

Subject to authorization by CDFW and USFWS, a desert tortoise removed from its burrow shall be placed in an unoccupied burrow of approximately the same size and orientation. If an existing burrow is unavailable, the Authorized Biologist will construct or direct the construction of a burrow of similar shape, size, depth, and orientation as the original burrow. Desert tortoises moved during inactive periods will be monitored for at least two days after placement in the new burrow to ensure their safety.

Subject to authorization by CDFW and USFWS, if a desert tortoise is moved at a time of the day when ambient temperatures are unfavorable (less than 40 degrees F or greater than 90 degrees F), it shall be held overnight in a clean cardboard box. The desert tortoise

shall be kept in the care of the Authorized Biologist under appropriate controlled temperatures and released the following day when temperatures are favorable. All cardboard boxes will be appropriately discarded after one use.

CVMSHCP/NCCP: Desert tortoise is a covered species under the CVMSHCP/NCCP, however the CVMSHCP/NCCP provides specific requirements for the protection of this species. This measure aligns with most USFWS guidelines for desert tortoise and is required on private and federal lands.

MM BIO-13 **Prepare and Implement Raven Monitoring, Management, and Reporting Plan.** In coordination with USACE and in consultation with USFWS and CDFW, CVWD shall prepare and implement a Raven Monitoring, Management, and Reporting Plan (Raven Plan) consistent with USFWS raven management guidelines. The purpose of the Raven Plan shall be to minimize Project-related predator subsidies and prevent any increases in raven numbers or activity within desert tortoise habitat during construction and O&M phases. The Plan shall address all Project components and their potential effects on raven numbers and activity. If monitoring leads to any documented raven predation on tortoises, based on occurrence of tortoise remains beneath active raven nests in or adjacent to the project site, the CVWD will report that information to the USFWS immediately. The CVWD will not implement raven control (i.e., destroy ravens or their nests). Regardless of raven monitoring results, CVWD shall be responsible for all other aspects of raven management described in the Raven Plan, such as avoidance and minimization of Project-related trash, water sources, or perch/roost/nest sites that could contribute to increased raven numbers. In addition, to offset the cumulative contributions of the Project to desert tortoise impacts from increased raven numbers, CVWD shall contribute to the USFWS Regional Raven Management Program. CVWD shall:

1. **Prepare and Implement a Raven Monitoring, Management, and Reporting Plan** that shall include, but not be limited to, the following components. The Plan shall be reviewed and approved by USFWS and CDFW prior to the start of construction activities.

    a. Identify all potential Project activities, structures, components, and other effects that could provide predator subsidies or attractants, including potential sources of food and water, and nesting materials, as well as nest or perch sites. These will include, but will not be limited to: waste food material; road-killed animals; water storage; potential pooling from leaks, dust control, or wastewater; debris from brush clearing; and perch or roost sites on Project facilities.

    b. Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities.

    c. Appoint a qualified biologist and specify a program, including monitoring schedule, field methods, and reporting procedure to monitor raven presence in the Project vicinity and detect any evidence of raven predation on tortoises.

2. **Contribute to the USFWS Regional Raven Management Program.** No later than 30 days prior to the start of construction, CVWD shall contribute to the USFWS Regional Raven Management Program by making a one-time payment of $105 per acre of long-term or permanent Project disturbance to the national Fish and Wildlife Federation Renewable Energy Action Team raven control account.

CVMSHCP/NCCP: The Project is covered under the CVMSHCP/NCCP. This measure is only relevant to the portion of the project on federal lands.

CEQA Significance Conclusion

Desert tortoise has a low to moderate potential to occur in the Project Study Area, and if present only in low numbers. If present impacts to desert tortoise would be significant without mitigation. Implementation of EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan), BIO-12 (Conduct Desert Tortoise Surveys, Monitoring, and Avoidance and Prepare a Desert Tortoise Relocation Plan), and BIO-13 (Prepare and Implement Raven Monitoring, Management, and Reporting Plan) would reduce any potential impacts to desert tortoise to a less-than-significant level (Class II).

Birds

No federal or State-listed bird species have the potential to permanently occupy or nest in the Project Study Area. Listed species may migrate through the region and could fly over or through the Project during construction or operation. The Project is not expected to impact migrating birds (see Impact BIO-7). The State and federally protected golden eagle has a moderate potential to periodically forage in the margins of the Project Study Area. Several special-status birds were observed or have potential to occur in the Project Study Area including burrowing owl, prairie falcon, loggerhead shrike, black-tailed gnatcatcher, vermilion flycatcher, Bendire's thrasher, crissal thrasher, and Le Conte's thrasher.

Impact BIO-4: The Project could result in disturbance to golden eagle.

The golden eagle is fully protected under the California Fish and Game Code and protected under the federal Bald and Golden Eagle Protection Act (BGEPA), and the federal Migratory Bird Treaty Act (MBTA). It is not covered by the CVMSHCP. Golden eagle has not been observed during surveys but occurs in the region and could forage in all reaches of the Project or in habitat downstream, downwind, or in the floodway. There is no suitable natural nesting habitat in the Project Study Area, but eagles may nest several miles away in the surrounding mountains and foothills. In some regions, golden eagles nest on transmission line towers or other tall man-made structures. Golden eagle is not expected to nest near the Project site due to the proximity of developed areas and the presence of suitable natural nesting habitat in the surrounding remote areas.

Direct construction and O&M impacts to golden eagle, if present, could include disruption of foraging activity or loss or degradation of foraging habitat due to increased dust, noise and disturbance, and release of hazardous materials. Indirect impacts include the degradation of habitat due to the introduction and spread of invasive weeds and increased human presence, including OHV use. Golden eagles will not typically remain in areas with human disturbance, such as construction or O&M activities. Therefore, presence of a golden eagle in work areas during construction or O&M activities is extremely unlikely. Project-related injury or mortality to golden eagle would also be extremely unlikely.

Construction and O&M activities could result in disruption of golden eagle foraging in the Project vicinity. Given the availability of adjacent undisturbed habitat, the proximity of the Project to existing development and related human presence and disturbance, and the relatively small impact area compared to available golden eagle foraging habitat in the region, the short-term Project-related disruption of golden eagle foraging during construction and O&M activities would be adverse, but not substantial.

The permanent loss of foraging habitat (i.e., productive habitat for prey species such as burrowing mammals) would be an adverse impact.

As a part of the proposed project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). This component of the proposed Project would serve to protect and manage foraging habitat for golden eagle.

To further reduce impacts to golden eagle, CVWD would implement EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), and EC B-3 (Avoid Impacts to Sensitive Species). In addition, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. This would avoid and minimize any damage to golden eagle foraging habitat from contact with Project-related hazardous materials.

In addition to the ECs, the Mitigation Measures BIO-1 through BIO-8 (see Impact BIO-1) and BIO-10 (see Impact BIO-2) would minimize or avoid direct and indirect Project impacts to golden eagle.

CVMSHCP Consistency

Golden eagle is not covered by the CVMSHCP. Potential impacts, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO-16 in this section of the EIS and Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-4

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-1 (Conduct Pre-construction Biological Resources Surveys)

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

See Impact BIO-2 for the complete text of the following mitigation measure:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

CEQA Significance Conclusion

Loss or degradation of golden eagle foraging habitat would be significant without mitigation. Implementation of EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), and BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan) would reduce impacts from injury or mortality of golden eagle and loss or degradation of golden eagle foraging habitat to a less-than-significant level (Class II).

Impact BIO-5: The Project could result in disturbance of nesting birds.

The Project site provides foraging, cover, and/or breeding habitat for a variety of resident and migratory birds. Nesting birds have been commonly observed in the Project Study Area in native vegetation, open areas on the ground, structures, debris piles, and transmission line towers.

Direct impacts to nesting birds include ground-disturbing activities associated with construction of the construction of the flood walls, as well as increased noise levels from heavy equipment, increased human presence, and exposure to fugitive dust. Construction and O&M activities conducted during the breeding season could result in the displacement of breeding birds and the abandonment of active nests, as well as a disruption in foraging activity. The removal of habitat during the breeding season could result in the displacement of breeding birds and the abandonment of active nests. Breeding birds and other wildlife may temporarily or permanently leave their territories to avoid construction activities, which could lead to reduced reproductive success and increased mortality. Increased vehicle travel on other access routes could displace nesting birds or result in lower nest success.

Indirect impacts to nesting birds could include the loss of habitat due to the colonization of weeds, dust, or human disturbance due to weed maintenance, sediment removal, or routine inspection of the levees.

Construction and O&M activities that result in harassment, injury or mortality to adults, chicks, or eggs, destruction or abandonment of nests, the abandonment of breeding territories, or the loss and degradation of habitat utilized by nesting birds would be adverse impacts.

To reduce impacts to nesting birds, CVWD would implement EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), and EC B-3 (Avoid Impacts to Sensitive Species). In addition, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. This would avoid and minimize any damage and harm to nesting birds, including eggs and chicks, and their habitat from contact with Project-related hazardous materials.

In addition to the ECs, Mitigation Measures BIO-1 through BIO-8 (see Impact BIO-1), BIO-10 (see Impact BIO-2), and BIO-14 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds, below) would minimize or avoid direct and indirect Project impacts to nesting birds.

Mitigation Measure BIO-14 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds) requires that qualified biologists conduct pre-construction to locate nesting birds in the proposed work area. Nests would be flagged and avoided during construction. In addition, a nesting bird plan would be prepared and implemented to avoid and minimize impacts to nesting birds. This measure requires that bird deterrent netting (if used) must be deployed and secured on equipment in a manner that, reduces the risk to wildlife from becoming trapped inside the netted area or within the excess netting. Mitigation Measure BIO-10 also requires daily inspections of bird deterrent netting by a biological monitor. This would avoid and minimize the potential for entrapment, injury, and mortality to wildlife, including special-status wildlife, from bird deterrent netting.

CVMSHCP Consistency

Aside from burrowing owl, crissal thrasher, and Le Conte's thrasher (discussed below), the CVMSHCP does not specify avoidance and minimization requirements for nesting birds that would apply to the Project. Most nesting bird species that may occur on the Project site are not covered by the CVMSHCP. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO-16 in this section of the EIS and Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-5

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-1 (Conduct Pre-construction Biological Resources Surveys)

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

See Impact BIO-2 for the complete text of the following mitigation measure:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

MM BIO-14 **Conduct Pre-Construction Surveys and Monitoring for Breeding Birds.** Prior to construction activities (i.e., mobilization, staging, grading, or construction) the CVWD shall retain a qualified avian biologist to conduct pre-construction surveys for nesting birds within the recognized breeding season in all areas within 500 feet of all Project components (i.e., levees, channels, sediment disposal areas, staging areas, floodwalls, and access road locations). Surveys for raptors shall be conducted for all areas from January 1 to August 15. The required survey dates may be modified based on local conditions, as determined by the qualified avian biologist, in coordination with CDFW and USFWS.

If breeding birds with active nests are found prior to or during construction, the qualified avian biologist shall establish a 300-foot buffer (500 foot for raptors, crissal thrasher, and Le Conte's thrasher) around the nest and no activities will be allowed within the buffer(s) until the young have fledged from the nest or the nest fails. The prescribed buffers may be adjusted by the qualified avian biologist in coordination with the USFWS and/or CDFW based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. The qualified avian biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that Project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. The avian biologist shall be responsible for documenting the results of the surveys, nest buffers implemented, and presenting the results of ongoing monitoring and will provide a copy of the monitoring reports for impact areas to the CVWD.

Surveys shall be conducted to include all impact areas on the Project site as well as all construction equipment. During construction, nest searches shall be conducted at least every three days daily during the breeding season to prevent nest starts on vehicles or equipment. If birds are found to be nesting in facility structures or construction equipment and the nests contain eggs or young, buffers as described above shall be implemented. If trees or shrubs with nests are to be removed as part of Project construction activities, this will be done outside of the nesting season to avoid additional impacts to nesting raptors. If removal during the nesting season cannot be avoided, all trees and shrubs will be inspected for active nests by the avian biologist. If nests are found within these trees and contain eggs or young, no activities within a 300-foot buffer for nesting birds and/or a 500 foot buffer for nesting raptors shall occur until the young have fledged the nest.

CVWD shall prepare a Nesting Bird Management Plan (NBMP) in coordination with USACE, and in consultation with CDFW and USFWS. The NBMP shall describe methods to minimize potential Project effects to nesting birds, and avoid any potential for unauthorized take. The NBMP will apply to the construction phase and, in accordance with MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan), will also be incorporated into an O&M Plan.

The NBMP shall include: (1) definitions of standard nest buffers for each species or group of species, depending on characteristics and conservation status for each species; (2) a standardized protocol for temporary buffer reductions for each species or group of species, specifying buffer reduction distances depending on bird species, local conditions, and type of proposed activity; (3) a notification procedure for further buffer distance reductions should they become necessary under special circumstances; (4) a monitoring protocol to ensure that any Project related effects to nesting birds will be minimized; and (5) a protocol for documenting and reporting any inadvertent contact or effects to birds or nests. The paragraphs below describe the NBMP requirements in further detail.

CVMSHCP/NCCP: The Project is covered under the CVMSHCP/NCCP. However, to ensure the protection of nesting birds this measure is required for private and federal lands.

CEQA Significance Conclusion

Nesting birds may be found throughout the Project Study Area and nesting has been observed during surveys. The loss or abandonment of nests, eggs, or their young would be a violation of State and federal law and would be a significant impact, depending on the species or regional population affected. Implementation of EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan), and BIO-14 (Prepare and Implement a Nesting Bird Management Plan) would reduce impacts to nesting birds to a less-than-significant level (Class II).

Impact BIO-6: The Project could result in the loss of burrowing owl or its habitat.

The burrowing owl is a CDFW Species of Special Concern and is covered by the CVMSHCP. It is also protected under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. Threats to burrowing owl include habitat loss, predation, roadkill, reduced burrow availability due to rodent control, and pesticides. Suitable habitat is present throughout the Project Study Area. One burrowing owl was detected in the Study Area during surveys. No active burrows or any evidence of breeding was found, although the site is within the known breeding range for burrowing owl.

Construction and O&M of the Project could directly affect burrowing owl and its habitat, should it occur on or near the Project site or in the floodway, by loss and degradation of habitat, mortality due to collisions with vehicles or heavy equipment, destruction of burrows, fugitive dust, release of hazardous materials, alterations to upstream or downstream hydrology leading to alteration of habitat (e.g., removing surface or soil water source, or causing inundation of an upland species occurrence), and increased noise and disturbance. Adult burrowing owls will generally shelter in their burrow rather than flee from disturbance, and construction and O&M activities could result in injury and mortality to adults, damage or destruction of burrows, and injury or mortality to eggs and nestlings. Indirect impacts include the introduction and spread of invasive weeds, providing predator subsidies, and increased human presence, including OHV use.

Construction and O&M activities that result in harassment, injury or mortality to adults, chicks, or eggs, destruction or the abandonment of burrows, or the loss and degradation of habitat utilized by burrowing owl would be adverse.

As a part of the proposed project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). This component of the proposed Project would serve to protect and manage habitat for burrowing owls. Land acquisition in the floodway could offset direct impacts if the acquired land is managed and maintained as habitat for special-status species.

To further reduce impacts to burrowing owl, CVWD would implement EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), and EC B-3 (Avoid Impacts to Sensitive Species. In addition, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. This would avoid and minimize any damage and harm to burrowing owl, including eggs and chicks, and its habitat from contact with Project-related hazardous materials.

In addition to the ECs, Mitigation Measures BIO-1 through BIO-8 (see Impact BIO-1), BIO-10 (see Impact BIO-2), BIO-14 (see Impact BIO-5), and BIO-15 (below), would minimize or avoid direct and indirect Project impacts to burrowing owl.

Due to its behavior, often taking cover within a burrow to escape threats rather than fleeing, special measures to prevent take of burrowing owl are needed. Mitigation Measure BIO-15 (Conduct Surveys and Avoidance for Burrowing Owl) would avoid take of burrowing owl by requiring an inventory of existing and potential burrow sites, establishing buffers around active burrows where no disturbance is allowed, prohibiting disturbance to occupied nest burrows during the breeding season, providing for passive relocation of burrowing owls outside of breeding season, and requiring replacement burrows to be installed (if needed).

CVMSHCP Consistency

Burrowing owl is considered a covered species under the CVMSHCP. Direct impacts to these species are considered a covered activity and mitigated through participation in the CVMSHCP. CVMSHCP would provide incidental take authorization for burrowing owl habitat, subject to mitigation and other requirements of the CVMSHCP, as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. The CVMSHCP has specific avoidance and minimization requirements for burrowing owl. These requirements include pre-construction surveys by an Acceptable Biologist (see Mitigation Measure BIO-1 for definition) and implementation of no-disturbance buffers around occupied burrows. During implementation of the Project, Mitigation Measures BIO-1 (Conduct Pre-construction Biological Resources Surveys) (see Impact BIO-1) and BIO-15 (Conduct Surveys and Avoidance for Burrowing Owl), discussed below, would ensure compliance with this requirement. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS and Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-6

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-1 (Conduct Pre-construction Biological Resources Surveys)

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

See Impact BIO-2 for the complete text of this measure:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

See Impact BIO-5 for the complete text of this measure:

MM BIO-14 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds)

MM BIO-15 **Conduct Surveys and Avoidance for Burrowing Owl.** Burrowing owl surveys shall be conducted by an Acceptable Biologist (as defined in Mitigation Measure BIO-1) within suitable habitat within 500 feet of the Project site, or to the edge of the property if less than 500 feet, in accordance with the most current CDFW guidelines (CDFG, 2012; or updated guidelines as they become available) or other accepted protocol (as determined by the CVCC in coordination with CVMSHCP Permittees and the wildlife agencies) no more than 30 days prior to the start of construction. CVWD shall take measures to avoid impacts to any active burrowing owl burrow within or adjacent to a work area by implementing buffer areas around the burrow where no construction activities will take place. The size of the buffer will be adequate to avoid impacts to the burrow and the occupying burrowing owl(s), eggs, and chicks, as determined by a qualified biologist. Buffers shall be 160 feet during the non-breeding season and 250 feet during the breeding season. The buffer will be staked and flagged. The prescribed buffers may be adjusted by the qualified avian biologist in coordination with the USFWS and/or CDFW based on existing conditions around the burrow, planned construction activities, tolerance of the species at a given location, and other pertinent factors.

Binocular surveys may be substituted for protocol field surveys on private lands adjacent to the Project site only when CVWD has made reasonable attempts to obtain permission to enter the property for survey work, but was unable to obtain such permission.

If accidental take (disturbance, injury, or death of owls) occurs, CDFW shall be notified immediately.

Burrows that are verified by as unoccupied by the Acceptable Biologist may be made inaccessible to owls (e.g., by collapsing, covering, or other appropriate means). If active burrowing owl burrows are located within Project work areas, CVWD may passively relocate the owls, outside the nesting season only, by preparing and implementing a Burrowing Owl Passive Relocation Plan, as described below. In coordination with USACE and in consultation with CDFW and USFWS, CVWD shall prepare a Burrowing Owl Passive Relocation Plan prior to the start of any ground-disturbing activities. No active relocation shall be permitted. No passive relocation of burrowing owls shall be permitted during breeding season, unless a qualified biologist determines that an occupied burrow is not

occupied by a mated pair, and only upon coordination with the CDFW and USFWS. The Plan shall include, but not be limited to, the following elements:

- **Assessment of Suitable Burrow Availability.** The Plan shall include an inventory of existing, suitable, and unoccupied burrow sites within 500 feet of the affected Project work site. Suitable burrows will include inactive desert kit fox, ground squirrel, desert tortoise, or other burrows that are deep enough to provide suitable burrowing owl nesting sites, as determined by the Acceptable Biologist. If two or more suitable and unoccupied burrows are present in the area for each burrowing owl that will be passively relocated, then no replacement burrows will need to be built.
- **Replacement Burrows.** For each burrowing owl that needs to be passively relocated, if fewer than two suitable unoccupied burrows are available within 300 feet of the affected Project work site, then CVWD shall construct at least two replacement burrows within 300 feet of the affected Project work site. Burrow replacement sites shall be in areas of suitable habitat for burrowing owl nesting, and subject to minimal human disturbance and access. The Plan shall describe measures to ensure that burrow installation or improvements would not affect sensitive species habitat or any burrowing owls already present in the relocation area. The Plan shall provide guidelines for creation or enhancement of at least two natural or artificial burrows for each active burrow within the Project disturbance area, including a discussion of timing of burrow improvements, specific location of burrow installation, and burrow design. Design of the artificial burrows shall be consistent with CDFW guidelines (CDFG, 2012; or more current guidance as it becomes available) and shall be approved by the CDFW and USFWS.
- **Methods.** Provide detailed methods and guidance for passive relocation of burrowing owls, outside the breeding season. An occupied burrow may not be disturbed during the nesting season (generally, but not limited to, February 1 to August 31), unless a qualified biologist determines, by non-invasive methods, that it is not occupied by a mated pair. Passive relocation would include installation of one-way doors on burrow entrances that would let owls out of the burrow but would not let them back in. Once owls have been passively relocated, burrows will be carefully excavated by hand and collapsed by, or under the direct supervision, of a qualified biologist.
- **Monitoring and Reporting.** Describe monitoring and management of the replacement burrow site(s) and provide a reporting plan to document compliance. The objective shall be to manage the relocation area for the benefit of burrowing owls, with the specific goal of maintaining the functionality of the burrows for a minimum of two years.

CVMSHCP/NCCP: Burrowing owl is considered a covered species under the CVMSHCP/ NCCP. However, to ensure the protection of nesting birds this measure is required for private and federal lands.

CEQA Significance Conclusion

Burrowing owl has been observed in the Project Study Area during surveys and are well documented in the region. No evidence of breeding was found, although the site is within its breeding range. If present impacts to burrowing owl habitat, or direct impacts to burrowing owls or their nests could be significant without mitigation. Direct impacts to these species is considered a covered activity and impacts are mitigated through participation in the CVMSHCP with the implementation of project specific mitigation

measures. Implementation of EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan), BIO-14 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds), and BIO-15 (Conduct Surveys and Avoidance for Burrowing Owl), would reduce impacts to burrowing owl to a less-than-significant level (Class II).

Impact BIO-7: The Project could result in disturbance to special-status raptors and songbirds.

The Project Study Area provides foraging, cover, and breeding habitat for a variety of resident and migratory raptors and songbirds. Although other special-status raptor species may move through the area during migration, aside from golden eagle and burrowing owl (discussed above), there is only one that is likely to occur as a resident: prairie falcon. This species was not observed during surveys, but it occurs in the region and has suitable foraging habitat in all reaches of the Project. The prairie falcon is a CDFW watch list species; it is not covered by the CVMSHCP. It is protected under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code.

Although other special-status songbird species may move through the area during migration, the species that were observed or have potential to occur in the Project Study Area as residents are loggerhead shrike, black-tailed gnatcatcher, vermilion flycatcher, Bendire's thrasher, crissal thrasher, and Le Conte's thrasher. There is suitable nesting habitat for loggerhead shrike and Le Conte's thrasher and minimal suitable nesting habitat for black-tailed gnatcatcher, in the Project Study Area, but nesting by these species was not observed during surveys.

Loggerhead shrike, vermilion flycatcher, and Bendire's thrasher are CDFW Species of Special Concern. The black-tailed gnatcatcher is a CDFW Special Animal. None of these species are covered by the CVMSHCP.

Crissal thrasher is a CDFW Species of Special Concern. Le Conte's thrasher is designated as a CDFW Species of Special Concern, but this applies only to the San Joaquin population and not the population that would be found in the Project vicinity. Crissal thrasher and Le Conte's thrasher are covered by the CVMSHCP. These songbirds are all protected under the MBTA and California Fish and Game Code.

Loggerhead shrike and Bendire's thrasher were observed during surveys in the Project Study Area. There is suitable habitat throughout the Project Study Area for black-tailed gnatcatcher and Le Conte's thrasher. Both species occur in the Project vicinity and have a high potential for occurrence on the Project site. There is no nesting habitat for vermilion flycatcher in the Project Study Area, but it may utilize adjacent golf courses. It has a moderate potential to occur on the Project site. There is marginal foraging habitat and no suitable nesting habitat for crissal thrasher in the Project Study Area, and it has a low potential to occur.

Construction and O&M of the Project could directly affect special-status raptors and songbirds and their habitat, should they occur on or near the Project site or downstream or downwind of the Project site or in the floodway, by loss and degradation of habitat; mortality due to collisions with vehicles or heavy equipment; destruction of nests, eggs, and chicks; fugitive dust; release of hazardous materials; alterations to upstream or downstream hydrology leading to alteration of habitat (e.g., removing surface

or soil water source, or causing inundation of an upland resource); and increased noise and disturbance. Indirect impacts include the introduction and spread of invasive weeds, providing predator subsidies, and increased human presence, including OHV use.

Construction and O&M activities that result in harassment, injury or mortality to adults, chicks, or eggs, destruction or abandonment of nests, or the loss and degradation of habitat utilized by special-status raptors and songbirds would be considered an adverse impact.

To reduce impacts to special-status raptors and songbirds, CVWD would implement EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), and EC B-3 (Avoid Impacts to Sensitive Species). In addition, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. This would avoid and minimize any damage and harm to special-status raptors and songbirds, including eggs and chicks, and their habitat from contact with Project-related hazardous materials.

In addition to the ECs, Mitigation Measures BIO-1 through BIO-8, BIO-10, and BIO-14 would minimize or avoid direct and indirect Project impacts to special-status raptors and songbirds.

CVMSHCP Consistency

Crissal thrasher and Le Conte's thrasher are covered species under the CVMSHCP. Participation in the CVMSHCP would provide incidental take authorization for crissal thrasher and Le Conte's thrasher, subject to mitigation and other requirements of the CVMSHCP as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. CVMSHCP modeled habitat for Le Conte's thrasher is found throughout most of the Project site, downstream areas, and floodway. CVMSHCP modeled habitat for crissal thrasher is found north of Reach 3. The CVMSHCP has specific avoidance and minimization requirements for crissal thrasher and Le Conte's thrasher in CVMSHCP modeled habitat. These requirements are pre-construction surveys by an Acceptable Biologist (see Mitigation Measure BIO-1 for definition) and implementation of no-disturbance buffers around active nests. During implementation of the Project, Mitigation Measures BIO-1 (Conduct Pre-construction Biological Resources Surveys; see Impact BIO-1) and BIO-14 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds; see Impact BIO-5) would ensure compliance with this requirement. Aside from burrowing owl (discussed above), the CVMSHCP does not specify avoidance and minimization requirements for other special-status raptors and songbirds that may be present on the Project site. Potential impacts to special-status raptors and songbirds, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS and Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-6

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-1 (Conduct Pre-construction Biological Resources Surveys)

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

See Impact BIO-2 for the complete text of the following mitigation measure:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

See Impact BIO-5 for the complete text of the following mitigation measure:

MM BIO-14 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds)

CVMSHCP/NCCP: Crissal thrasher and Le Conte's thrasher are covered species under the CVMSHCP/NCCP. However, other birds from the region are not covered. To ensure the protection of nesting birds this measure is required for private and federal lands.

CEQA Significance Conclusion

Several special-status raptors and songbirds occur could occur in the Project area and nesting has been observed for some species. Habitat loss or direct disturbance to special-status raptors and songbirds, or their nests, would be significant without mitigation. Implementation of EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan), and BIO-14 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds) would reduce impacts to special-status raptors and songbirds to a less-than-significant level (Class II).

Mammals

No federal or State-listed mammals have the potential to occur in the Project Study Area. Townsend's big-eared bat is a candidate for State listing as threatened and a California Species of Special Concern and has a low potential to forage, but not roost, in the Project Study Area. The California Fully Protected Nelson's bighorn sheep (but not the federally and State-listed Peninsular bighorn sheep distinct population segment [DPS]) also has a low potential to occur in the Project Study Area. Several other special-status mammals were observed or could occur in the Project Study Area. These include several species of bats, small rodents, and mid-size carnivores such as American badger and desert kit fox.

Impact BIO-8: The Project could affect special-status bats, including Townsend's big-eared bat.

Several special-status bat species could occur in the Project area. They include: Townsend's big-eared bat, which is a candidate for state listing, western mastiff bat, western yellow bat, pocketed free-tailed bat, and big-free tailed bat. These species are CDFW Species of Special Concern and only the western (southern) yellow bat is covered by the CVMSHCP. No bats were observed during surveys, but night surveys were not conducted. All five species have a high potential to forage in the Project area. There is no potential roosting habitat for Townsend's big-eared bat, pocketed free-tailed bat, or big free-tailed bat, and minimal potential roosting habitat for western mastiff bat and western yellow bat. Potential for these bat species to roost in the Project Study Area is low.

Bat life histories vary widely. Some species hibernate during winter or migrate to warmer areas. During the breeding season, bats generally roost during the day, either alone or in communal roost sites, depending on species. Most special-status bats roost in rock crevices, caves, abandoned mine shafts, or old buildings. Others may roost in tree cavities, bark crevices, or foliage. Roost sites may be used seasonally (e.g., hibernacula) or daily (day roosts, used during inactive daylight hours). Maternity roosts (where female bats congregate to give birth and raise young) are particularly important. The decline of bat populations is often due to loss of roost sites, roost site disturbance, and loss of foraging habitat.

Direct construction and O&M impacts to special-status bats, if present, could include loss or degradation of foraging and roosting habitat due to increased dust, noise, release of hazardous materials, and human presence; disturbance to bat roosts; and mortality or injury of bats within roosts. Indirect impacts could include the degradation of habitat due to the introduction and spread of invasive weeds and increased human presence, including OHV use. The use of access roads during dusk and dawn or at night could result in vehicle strikes. Other Project-related injury or mortality could occur if bats were disoriented by night lighting and collided with structures or equipment, or became trapped in water tanks, or entangled in bird deterrent netting.

Construction and O&M activities that result in the loss of foraging or roosting habitat, loss of roosts, or injury or mortality to special-status bats would be adverse impacts.

As a part of the proposed Project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). This component of the proposed Project would serve to offset foraging habitat loss for bats.

To further reduce impacts to special-status bats, CVWD would implement EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), and EC B-3 (Avoid Impacts to Sensitive Species). In addition, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. This would avoid and minimize any damage to special-status bats foraging and roosting habitat and insect prey from contact with Project-related hazardous materials.

In addition to the ECs, Mitigation Measures BIO-1 through BIO-8 (see Impact BIO-1), BIO-10 (see Impact BIO-2), and BIO-16 (below) would minimize or avoid direct and indirect Project impacts to special-status bats.

Mitigation Measure BIO-16 (Conduct Surveys and Avoidance for Bat Roosts) requires surveys for bat roosts and implementation of avoidance measures for active roosts used by special-status bats. The measure also provides direction for avoidance and safe eviction (if needed) for roosts used by non-special-status bats. This measure would avoid and minimize Project-related disturbance to or destruction of special-status bat roosts and resulting injury or mortality of adult and juvenile bats.

CVMSHCP Consistency

Of the special-status bat species with potential to occur in the Project Study Area, only the western (southern) yellow bat is covered by the CVMSHCP. The CVMSHCP does not specify avoidance and minimization requirements for western yellow bat that would apply to the Project. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS and Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-8

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-1 (Conduct Pre-construction Biological Resources Surveys)

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

See Impact BIO-2 for the complete text of the following mitigation measure:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

MM BIO-16 **Conduct Surveys and Avoidance for Bat Roosts.** CVWD shall conduct surveys for roosting bats within 300 feet of Project activities, within 14 days prior to any grading of rocky outcrops or removal of trees, particularly palm trees and large trees (12 inches in diameter or greater at 4.5 feet above grade) with loose bark or other cavities, or removal of structures or debris that could be used by bats for roosting. Surveys shall be conducted during the breeding season (1 March to 31 July) and the non-breeding season. Surveys shall be performed by a qualified bat biologist (i.e., demonstrated experience surveying for local bats; or a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats should relocation be required). The resume of the biologist shall be provided to the USACE for concurrence in consultation with CDFW and USFWS prior to the biologist beginning field duties on the Project. Surveys shall include a minimum of one day and one evening.

Any active bat roosts shall be identified and clearly marked. An exclusion area shall be established 165 feet from any active roost, and these areas avoided during construction activities. If active roosts are found, then focused surveys shall be conducted to determine if the sites support special-status bat species.

Non-special-status bats. If non-breeding bat hibernacula are found within work areas, the bats shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist (e.g., installation of one-way doors). In situations requiring one-way doors, a minimum of one week shall pass after doors are installed and temperatures must be sufficiently warm for bats to exit the roost because bats do not typically leave their roost daily during winter months in southern coastal California. This action will allow all bats to leave during the course of one week. Roosts that need to be removed, in situations where the use of one-way doors is not necessary in the judgment of the qualified bat biologist, shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree or structure/debris shall be removed or the grading shall occur the next day (i.e., there shall be no less or more than one night between initial disturbance and the grading or tree removal).

If active maternity roosts or hibernacula are found, the rock outcrop or tree/structure/debris occupied by the roost shall be avoided (i.e., not removed) by the Project. If avoidance of the maternity roost is not feasible, the bat biologist shall survey (through the use of radio telemetry or other CDFW approved methods) for nearby alternative maternity colony sites. If the bat biologist determines in consultation with and with the approval of the CDFW that there are alternative roost sites used by the maternity colony and young are not present, then no further action is required and it will not be necessary to provide alternate roosting habitat. However, if there are no alternative roosts sites used by the maternity colony, substitute bat roosting habitat shall be provided, as detailed below. If an active maternity roost is located in an area to be impacted by the Project, and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (i.e., prior to 1 March) or after young are flying (i.e., after 31 July) using the exclusion techniques described above.

If a maternity roost is anticipated to be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the Project site no less than three months prior to the eviction of the colony. Alternative roost sites will be constructed in accordance with the specific bats' requirements in coordination with CDFW. By making the roosting habitat available prior to eviction, the colony will have a better chance of finding and using the roost. Large concrete walls (e.g., on bridges) on south or southwestern slopes that are retrofitted with slots and cavities are an example of structures that may provide alternative roosting habitat appropriate for maternity colonies. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. The CDFW shall also be notified of any hibernacula or active nurseries within the construction zone.

Special-status bats. If special-status bat species occur at these roosting or nursery sites, then construction activities shall avoid these sites and a surrounding buffer distance of 300 feet. If construction activities cannot avoid these sites, construction at these sites shall be delayed until the breeding cycles for the special-status bats are completed. CVWD

shall consult with a bat specialist in order to determine when the breeding cycle for the special-status bats is completed. CVWD shall consult with CDFW regarding eviction of non-breeding special-status bats.

CVMSHCP/NCCP: Only the western (southern) yellow bat is covered under the CVMSHCP/ NCCP. However, other bats from the region are not covered. To ensure the protection of bats this measure is required for private and federal lands.

CEQA Significance Conclusion

Special-status bats have a high potential to forage in the Project Study Area, and some have a low potential for roosting. Impacts to special-status bats could be significant without mitigation. Implementation of EC B-1 (Weed Abatement Program), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan), and BIO-16 (Conduct Surveys and Avoidance for Bat Roosts would reduce impacts to special-status bats to a less-than-significant level (Class II).

Impact BIO-9: The Project could result in disturbance to Nelson's bighorn sheep or mountain lion.

Nelson's bighorn sheep (not the federally and State-listed Peninsular bighorn sheep DPS) is fully protected under California Fish and Game Code. It is not covered under the CVMSHCP. Nelson's bighorn sheep was not observed during surveys but is found in the region and has a very low potential to occur in the Project Study Area. Mountain lion are currently being evaluated by the State of California for listing under the California Endangered Species Act (CESA). This species is not covered by the CVMSHCP.

Direct construction and O&M impacts to Nelson's bighorn sheep or mountain lion, if present, could include disruption of foraging activity, or loss or degradation of foraging habitat due to increased dust, noise, release of hazardous materials, and human presence. Indirect impacts include the degradation of habitat due to the introduction and spread of invasive weeds and increased human presence, including OHV use. Impacts to Nelson’s bighorn sheep or mountain lion, including injury or mortality, is very unlikely.

Nelson’s bighorn sheep may acclimate to ongoing and predictable human activities such as mining. But they will not typically remain in areas with unfamiliar human disturbance, such as intermittent construction or O&M activities. Mountain lion, if present, are expected to occur as a nocturnal visitor and is not expected to be affected by the construction or operation of the project. Therefore, presence of a bighorn sheep or mountain lions in work areas during construction or O&M activities is extremely unlikely. They are also extremely unlikely to occur anywhere along the urbanized sections of reaches 2 and 3 during day light t hours.

Construction and O&M activities could result in disruption of bighorn sheep should they be foraging in the Project vicinity. Given the availability of adjacent undisturbed habitat, the proximity of the Project site to existing development and related human presence and disturbance, and the relatively small impact area compared to available bighorn sheep foraging habitat in the region, the short-term Project-related disruption of bighorn sheep foraging could be adverse, but not substantial. The Project is not expected to disrupt foraging for mountain lion.

To further reduce impacts to Nelson's bighorn sheep and mountain lion, CVWD would implement EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), and EC B-3 (Avoid Impacts to Sensitive Species). In addition, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. This would avoid and minimize any damage to Nelson's bighorn sheep foraging habitat from contact with Project-related hazardous materials.

In addition to the ECs, Mitigation Measures BIO-1 through BIO-8 (see Impact BIO-1) and BIO-10 (see Impact BIO-2) would minimize or avoid direct and indirect Project impacts to Nelson's bighorn sheep and mountain lion.

CVMSHCP Consistency

Nelson's bighorn sheep and mountain lion are not covered by the CVMSHCP. Potential impacts to Nelson's bighorn sheep or mountain lion, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS and Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-9

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-1 (Conduct Pre-construction Biological Resources Surveys)

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

See Impact BIO-2 for the complete text of the following mitigation measure:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

CVMSHCP/NCCP: Nelson's bighorn sheep and mountain lion are not covered by the CVMSHCP/NCCP. This measure is required for private and federal lands.

CEQA Significance Conclusion

Injury or mortality of bighorn sheep could be significant without mitigation. Impacts to mountain lion are not expected to occur. Habitat loss from the project would be considered less than significant. Implementation of EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), and BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan) would reduce impacts to Nelson's bighorn sheep and mountain lion to a less-than-significant level (Class II).

Impact BIO-10: The Project could result in mortality of, and loss of habitat for, special-status small mammals.

The Project Study Area may support a variety of small rodents including Colorado Valley woodrat (CDFW Special Animal, detected during surveys), Palm Springs (Coachella Valley) round-tailed ground squirrel (CDFW Species of Special Concern, observed during surveys), Pallid San Diego pocket mouse (CDFW Species of Special Concern, low potential to occur), Earthquake Merriam's kangaroo rat (CDFW Special Animal, high potential to occur), and the Palm Springs pocket mouse (CDFW Species of Special Concern, high potential to occur). Of these, the Palm Springs pocket mouse and Palm Springs (Coachella Valley) round-tailed ground squirrel are covered by the CVMSHCP.

Construction and O&M of the Project could directly affect special-status small mammals and their habitat, should they occur on or near the Project site or downstream of the Project site or in the floodway, by loss and degradation of habitat; disturbance of foraging, dispersal, and breeding activities; mortality due to crushing by foot traffic, vehicles, or heavy equipment; fugitive dust; release of hazardous materials; alterations to upstream or downstream hydrology, leading to alteration of habitat (e.g., removing surface or soil water source, or causing inundation of an upland species occurrence); soil compaction that prevents burrowing; and increased noise and disturbance. Small mammal burrows or nests located within Project disturbance areas may be damaged or destroyed, and adults or young within the burrows or nests may be injured or killed. Small mammals in or near work areas may be disturbed or frightened away by human presence, noise, and activity. Construction and O&M disturbance can also result in the flushing of small mammals from refugia, which increases predation risk. Indirect impacts include the introduction and spread of invasive weeds, and increased human presence, including OHV use.

The Colorado Valley woodrat constructs above-ground middens, composed of sticks, rocks, and other materials and would be visible during construction. Other small rodent burrows or burrow complexes would be detectable not would likely be subject to disturbance from construction activities. Construction and O&M activities that result in injury, mortality, disturbance, or destruction of burrows or middens, or loss or degradation of habitat utilized by special-status small mammals would be considered adverse.

As a part of the proposed Project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). This component of the proposed Project would serve to protect and manage habitat for special-status small mammals. Land acquisition in the floodway would offset direct impacts if the acquired land is managed and maintained as habitat for special-status species.

To further reduce impacts to special-status small mammals, CVWD would implement EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), and EC B-3 (Avoid Impacts to Sensitive Species). In addition, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. This would avoid and minimize any damage and harm to special-status small mammals and their habitat from contact with Project-related hazardous materials.

In addition to the ECs and requirements that may be imposed by the CVMSHCP, Mitigation Measures BIO-1 through BIO-8 (see Impact BIO-1), BIO-10 (see Impact BIO-2), and BIO-17 (below) would minimize or avoid direct and indirect Project impacts to special-status small mammals.

Mitigation Measure BIO-17 (Conduct Surveys and Avoidance for Special-status Small Mammals) would avoid and minimize take of Colorado Valley woodrat requiring pre-construction surveys, implementation of measures to minimize construction and O&M impacts, and avoidance of active woodrat middens.

CVMSHCP Consistency

Of the special-status small mammals potentially present on the Project site, only the Palm Springs pocket mouse and Palm Springs (Coachella Valley) round-tailed ground squirrel are covered under the CVMSHCP. Participation in the CVMSHCP would provide incidental take authorization for their habitat loss, subject to mitigation and other requirements of the CVMSHCP as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. The CVMSHCP does not specify avoidance and minimization requirements for Palm Springs pocket mouse or Palm Springs (Coachella Valley) round-tailed ground squirrel that would apply to the Project. Potential impacts to small mammals, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO-16 in this section of the EIS and Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-10

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-1 (Conduct Pre-construction Biological Resources Surveys)

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

See Impact BIO-2 for the complete text of the following mitigation measure:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

MM BIO-17 **Conduct Surveys and Avoidance for Special-status Small Mammals.** CVWD shall implement pre-construction surveys for special-status small mammals including pallid San Diego pocket mouse, Earthquake Merriam's kangaroo rat, Colorado Valley woodrat, Palm Springs pocket mouse, and Palm Springs round-tailed ground squirrel in suitable habitats in the Project area and within 50 feet of disturbance areas.

Active woodrat middens that may be occupied by Colorado Valley woodrat shall be flagged and ground-disturbing activities shall be avoided within a minimum of 10 feet surrounding each active midden unless if possible. If avoidance is not possible, CVWD shall take the following sequential steps: (1) all understory vegetation will be cleared in the area immediately surrounding active middens followed by a period of one night without further disturbance to allow woodrats to vacate the midden, (2) each occupied midden will then be disturbed by a qualified wildlife biologist until all woodrats leave the midden and seek refuge off-site, and (3) the midden sticks and debris shall be removed from the Project site and piled at the base of a nearby shrub or tree. Relocated middens shall not be spaced closer than 100 feet apart, unless a qualified wildlife biologist has determined that a specific habitat can support a higher density of middens. CVWD shall document all woodrat middens moved in monitoring logs.

CVMSHCP/NCCP: Only the Palm Springs pocket mouse and Palm Springs (Coachella Valley) round-tailed ground squirrel are covered under the CVMSHCP/NCCP. However, other small mammals from the region are not covered. To ensure the protection of small mammals this measure is required for private and federal lands.

CEQA Significance Conclusion

Impacts to special-status small mammals could be significant without mitigation. Implementation of EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan), and BIO-17 (Conduct Surveys and Avoidance for Special-status Small Mammals) would reduce impacts to special-status small mammals to a less-than-significant level (Class II).

Impact BIO-11: The Project could result in mortality of, and loss of habitat for, American badger or desert kit fox.

The American badger is a CDFW Species of Special Concern. The desert kit fox is a protected furbearing mammal under the California Fish and Game Code. Canine distemper outbreaks in desert kit fox populations have been a recent concern. Neither species is covered by the CVMSHCP nor were observed during surveys. Both species have a high potential for occurrence in the Project area.

Construction and O&M of the Project could directly affect badger and kit fox and their habitat, should they occur on or near the Project site or downstream of the Project site or in the floodway, by loss and degradation of habitat; disturbance of foraging, dispersal, and breeding activities; mortality due to vehicle strikes; fugitive dust; release of hazardous materials; alterations to upstream or downstream hydrology, leading to alteration of habitat (e.g., removing surface or soil water source, or causing inundation of an upland resource); soil compaction that prevents burrowing; and increased noise and disturbance. Badger or kit fox burrows within Project disturbance areas may be damaged or destroyed, and adults or young within the burrows may be injured or killed. Badger and kit fox in or near work areas may be disturbed or frightened away by human presence, noise, and activity. Indirect impacts include the introduction and spread of invasive weeds, and increased human presence, including OHV use.

Construction and O&M activities that result in injury, mortality, disturbance, or destruction of burrows, or loss or degradation of habitat utilized by badger or kit fox would be adverse.

As a part of the proposed Project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). This component of the proposed Project would serve to protect and manage habitat for American badger and desert kit fox. Land acquisition in the floodway would offset direct impacts if the acquired land is managed and maintained as habitat for special-status species.

To further reduce impacts to badger and kit fox, CVWD would implement EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), and EC B-3 (Avoid Impacts to Sensitive Species). In addition, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. This would avoid and minimize any damage and harm to badger and kit fox and their habitat from contact with Project-related hazardous materials.

In addition to the ECs and requirements that may be imposed by the CVMSHCP, Mitigation Measures BIO-1 through BIO-8 (see Impact BIO-1), BIO-10 (see Impact BIO-2), and BIO-18 (below) would minimize or avoid direct and indirect Project impacts to badger and kit fox.

Mitigation Measure BIO-18 (Conduct Surveys and Avoidance for American Badger and Desert Kit Fox) would avoid and minimize take of badger and kit fox by requiring pre-construction surveys and avoidance of maternity dens.

CVMSHCP Consistency

American badger and desert kit fox are not covered by the CVMSHCP. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS and Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-11

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures"

MM BIO-1 (Conduct Pre-construction Biological Resources Surveys)

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

See Impact BIO-2 for the complete text of the following mitigation measure:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

MM BIO-18 **Conduct Surveys and Avoidance for American Badger and Desert Kit Fox.** CVWD shall conduct pre-construction surveys for desert kit fox and American badger no more than 15 days prior to initiation of construction activities. Surveys shall be conducted in areas that contain habitat for this these species and shall include Project disturbance areas and access roads plus a 200-buffer surrounding these areas. If dens are detected, each den shall be classified as inactive, potentially active, active non-natal, or active natal.

Inactive dens that would be directly impacted by the placement of fill shall be excavated either by hand or mechanized equipment under the direct supervision of the biologist and backfilled to prevent reuse by badgers or kit fox. Potentially and known active dens shall not be disturbed during the whelping/pupping season (February 1 – September 30). A den may be declared "inactive" after three days of monitoring via camera(s) or a tracking medium have shown no kit fox or American badger activity.

Active dens shall be flagged and Project activities within 200 feet (non-natal dens) or 300 feet (natal dens, or any active den during the breeding season) shall be avoided. Buffers may be modified by a qualified biologist, in consultation with CDFW and USFWS. If active dens are found within Project disturbance areas and avoidance is not possible, CVWD shall take action as specified below, after notifying and obtaining concurrence from CDFW.

Active and potentially active non-natal dens. Outside the breeding season, any potentially active dens that would be directly impacted by construction activities shall be monitored by a qualified mammologist or biologist for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den may be excavated and backfilled by hand. If tracks are observed, the den may be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights

to discourage continued use. After verification that the den is no longer active, the den may be excavated and backfilled by hand.

Active natal dens. Active natal dens (any den with cubs or pups) or any den active during the breeding season will not be excavated or passively relocated. The cub or pup-rearing season is generally from January 15 through mid-September. A 300-foot no-disturbance buffer shall be maintained around all active natal dens. Discovery of an active natal den that could be impacted by the Project shall be reported to CDFW within 24 hours of the discovery along with a map of the den location and a copy of the survey results. A qualified biologist shall monitor the natal den until he or she determines that the pups have dispersed. Any disturbance to denning animals or activities that might disturb denning activities shall be prohibited within the buffer zone. Once the pups have dispersed, methods listed above for non-natal dens may be used to discourage den reuse. After verification that the den is unoccupied, it shall then be excavated by hand and backfilled to ensure that no animals are trapped in the den.

If canine distemper is reported in desert kit fox on the site or surrounding areas, then CVWD shall coordinate with CDFW to identify appropriate actions prior to continuing implementation of this mitigation measure in respect to desert kit fox. Any observations of a kit fox that appears sick or any kit fox mortality shall be reported to CDFW within one work day.

In the event that passive relocation techniques fail, CVWD shall contact CDFW to explore other relocation options.

All den monitoring and excavation activities and passive relocations shall be documented and reported to the CDFW.

CVMSHCP/NCCP: American badger and desert kit fox are not covered by the CVMSHCP/ NCCP. This measure is required for private and federal lands.

CEQA Significance Conclusion

American badger and desert kit fox have a high potential for occurrence in the Project Study Area. Impacts to American badger and desert kit fox would be significant without mitigation. Implementation of EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan), and BIO-18 (Conduct Surveys and Avoidance for American Badger and Desert Kit Fox) would reduce impacts to badger and kit fox to a less-than-significant level (Class II).

Invertebrates

Two special-status invertebrates potentially occur in the Study Area: Coachella Valley giant sand-treader cricket and Coachella Valley Jerusalem cricket.

Impact BIO-12: The Project could result in the loss of Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket.

Both Coachella Valley giant sand-treader cricket and Coachella Valley Jerusalem cricket are CDFW Special Animals and are covered under the CVMSHCP.

The Coachella Valley giant sand-treader cricket occurs in active sand hummocks and dunes in the Coachella Valley. The Coachella Valley Jerusalem cricket occurs in sandy to somewhat gravelly soils in the Coachella Valley. Both species are cryptic and difficult to detect. The Study Area is within or near the current or historic range of both species, but neither was observed during surveys. Suitable habitat occurs in Reaches 3 and 4 of the Project.

Construction and O&M of the Project could directly affect both cricket species and their habitat, should they occur on or near the Project site or downstream or downwind of the Project site or in the floodway, by loss and degradation of habitat; fragmentation of habitat; mortality due to crushing by foot traffic, vehicles, or heavy equipment; crushing of burrows; alteration of microhabitat conditions to the degree the species can no longer survive (e.g., removal of vegetation debris or rocks under which the crickets shelter); fugitive dust; release of hazardous materials; alterations to downstream hydrology leading to alteration of habitat (e.g., removing surface or soil water source, or causing inundation of an upland species occurrence); sand compaction; disruption of fluvial and aeolian sand transport, and increased noise and disturbance. Indirect impacts include the introduction and spread of invasive weeds, and increased human presence, including OHV use.

Construction and O&M activities that result in mortality or the loss, degradation, and fragmentation of habitat utilized by Coachella Valley giant sand-treader cricket and Coachella Valley Jerusalem cricket would be adverse.

As a part of the proposed Project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). This component of the proposed Project would serve to protect and manage habitat for special-status invertebrates. Land acquisition in the floodway would offset direct impacts if the acquired land is managed and maintained as habitat for special-status species.

To further reduce impacts to Coachella Valley giant sand-treader cricket and Coachella Valley Jerusalem cricket, CVWD would implement EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), and EC B-3 (Avoid Impacts to Sensitive Species). In addition, EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. This would avoid and minimize any damage to the crickets, their eggs, food plants, and habitat from contact with Project-related hazardous materials.

In addition to the ECs, Mitigation Measures BIO-1 through BIO-8 (see Impact BIO-1) and BIO-10 (see Impact BIO-2) would minimize or avoid direct and indirect Project impacts to Coachella Valley giant sand-treader cricket and Coachella Valley Jerusalem cricket.

CVMSHCP Consistency

Both cricket species are covered under the CVMSHCP. Participation in the CVMSHCP would provide incidental take authorization, subject to mitigation and other requirements of the CVMSHCP as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. The CVMSHCP does not specify avoidance and minimization requirements for Coachella Valley

giant sand-treader cricket or Coachella Valley Jerusalem cricket that would apply to the Project. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS and Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-12

EC B-1 (Weed Abatement Program)

EC B-2 (Biological Monitoring and Relocation of Sensitive Species)

EC B-3 (Avoid Impacts to Sensitive Species)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-1 (Conduct Pre-construction Biological Resources Surveys)

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

See Impact BIO-2 for the complete text of the following mitigation measure:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

CVMSHCP/NCCP: Both cricket species are covered under the CVMSHCP/NCCP. This measure is required only for federal lands.

CEQA Significance Conclusion

Coachella Valley giant sand-treader cricket and Coachella Valley Jerusalem cricket were not observed in the Project Study Area during surveys but are cryptic and difficult to detect. Impacts to these species and their habitat would be significant without mitigation. Implementation of EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), and BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan) would reduce impacts to Coachella Valley giant sand-treader cricket and Coachella Valley Jerusalem cricket to a less-than-significant level (Class II).

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified by local, State, or federal agencies (Criterion BIO2).

Impact BIO-13: The Project could result in temporary and permanent loss and degradation of native vegetation and habitat.

The alluvial fans, sand fields, and shallow drainages present in the Study Area support a broad assemblage of native vegetation, dunes, and invasive non-native species. Road construction and improvements, site preparation for construction of levees, channels, and the energy dissipater, excavation of borrow sites, and other Project activities would necessitate removing existing vegetation and habitat. Construction of the proposed Project would result in 175.47 acres of permanent and 286.35 acres of temporary disturbance to vegetation and habitat types including sand dunes (Tables 4.6-3). Of the 461.82 acres, approximately 213.40 acres is located at the new soil deposition area south of Avenue 38. Table 4.6-4 represents a summary of sensitive versus common habitat types impacted by construction of the proposed Project.

Permanent impacts would preclude most natural vegetation and habitat function throughout the life of the Project or longer. Examples of permanent impacts are removal of vegetation for levees, channels, and other Project-related structures.

Temporary impacts to vegetation and habitat would occur during construction and some recruitment may occur after construction of the levees and channels. However, natural recovery rates vary according to the vegetation type and the nature and severity of the impact. For example, some vegetation may recover naturally within a few years after crushing by heavy vehicles (Gibson et al., 2004), whereas more severe damage involving vegetation removal and soil disturbance can take from 50 to 300 years for partial recovery, and complete ecosystem recovery may require much longer (Lovich and Bainbridge, 1999). In the desert environments, ecological restoration techniques are typically unable to dependably establish a trend toward restoration of habitat values within a five-year period. Therefore, except for dune areas located at the spoil site supporting ruderal vegetation temporary impacts to vegetation and habitat will be considered permanent for this analysis.

Table 4.6-3. Vegetation and Cover Types in Disturbance Areas (acres)

	Reach 1		Reach 2		Reach 3		Reach 4		New Soil Deposition Site*	Concrete Batch Plant/ Marshaling Yard	Total	
Vegetation Type	**Perm.**	**Temp.**	**Perm.**	**Temp.**	**Perm.**	**Temp.**	**Perm.**	**Temp.**	**Temp.**	**Temp.**	**Perm.**	**Temp.**
Abandoned Agriculture	0.00	0.00	0.00	0.00	0.00	0.00	5.12	0.65	35.99	0.00	**5.12**	**36.64**
Active Sand Dune/ Stabilized Sand Field (Desert dunes)	0.00	0.00	0.00	0.00	0.00	0.00	26.78	2.57	46.08	0.00	**26.78**	**48.65**
Asian Mustard Stand (Non-native vegetation)	0.58	0.25	0.00	0.00	17.66	1.90	7.12	0.74	0.00	0.00	**25.36**	**2.89**
Cheesebush scrub	0.00	0.00	0.00	0.00	3.62	0.84	0.00	0.00	0.00	0.00	**3.62**	**0.84**
Creosote Hummocks	0.00	0.00	0.00	0.00	0.00	0.00	32.53	0.52	51.83	37.04	**32.53**	**89.39**
Creosote Scrub	32.28	13.63	4.66	0.97	13.64	2.48	4.31	0.02	0.00	0.00	**54.89**	**17.10**
Disturbed/Developed (Ruderal)	10.18	4.10	0.00	0.00	5.59	0.97	11.40	6.27	79.50	0.00	**27.17**	**90.84**
Total	**43.04**	**17.98**	**4.66**	**0.97**	**40.51**	**6.19**	**87.26**	**10.77**	**213.40**	**37.04**	**175.47**	**286.35**

*No permanent impacts anticipated at the soil deposition site.

Table 4.6-4. Summary of Vegetation and Cover Types in Disturbance Areas (acres)			
	Total for All Reaches		
Vegetation Type	Permanent Impacts	Temporary Impacts	Permanent and Temporary Impacts
Desert dunes	26.78	48.65	**75.43**
Non-sensitive native vegetation types	91.04	107.33	**198.37**
Non-native, ruderal, and abandoned agriculture	57.65	130.37	**188.02**
Total	**175.47**	**286.35**	**461.82**

Direct impacts of the proposed Project would result in the loss of vegetation, altered soil conditions, sand compaction, loss of native seed banks, release of hazardous materials, and temporary changes in the topography. Grading and other activities including vehicle travel on dirt roads could result in increased fugitive dust to native vegetation in adjacent areas. Wind-blown dust can degrade soils and vegetation over a wide area (Okin et al., 2001). Dust can have deleterious physiological effects on plants and may affect their productivity and nutritional qualities (Sharifi et al., 1997). Fugitive dust can kill plants by burial and abrasion, interrupt natural processes of nutrient accumulation, and allow the loss of soil resources. The destruction of plants and soil crusts by windblown dust exacerbates the erodibility of soil and accelerates the loss of nutrients (Okin et al., 2001).

Indirect impacts from construction and O&M activities could include dust caused by Project activities, sand compaction, interruption of surface flows and water or sediment supply to downstream habitat, and the introduction or spread of invasive species. Impacts to fluvial and aeolian sand migration impacts and mitigation are described in Section 4.5.

Effects to vegetation and habitat on the Project site would occur primarily during construction but may also occur during O&M. O&M activities may include the removal of vegetation along Project facilities to provide reliable access to the flood control structure and to protect the structure from damage due to root penetration. Maintenance may also include selective removal of non-native vegetation within the Project site. These impacts would take place within access roads, levees, and channels where construction impacts are considered permanent. O&M for the Project also includes excavation of the sand that accumulates along Project levees and channels and distribution of this material (if suitable) on the floodway area within the wind corridor. See Sections 3.5 and 4.5 (Sand Migration) for additional details.

The severity of impacts to native vegetation depends on the type of action conducted (i.e., grading, mowing, or drive and crush) compared to the sensitivity and location of habitat and the plants or wildlife that occur in that area. Impact would be relatively minor for vegetation and habitat removal in areas with little native habitat value (e.g., unvegetated/developed, non-native vegetation, and ruderal areas). In other areas, loss of native vegetation would reduce or degrade habitat availability for native plants and wildlife, including special-status species. Degradation to areas below the levees would occur to some extent however these areas would still receive rainfall and would be expected to support pre-construction vegetation communities. In some cases, project-related disturbance to unvegetated windblown sand habitat also would degrade habitat for native species. In some cases, sensitive habitat that supports listed threatened or endangered species or other special-status species (e.g., desert dunes), would be removed or degraded.

To reduce impacts of the Project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). Land acquisition in the floodway would offset direct impacts from habitat loss if the acquired land is managed and maintained as habitat for special-status species. In addition, CVWD would implement Environmental

Commitments found in Section 2.2.4. The Environmental Commitments that would serve to mitigate potential impacts native vegetation communities and reduce impacts from the proposed Project. To address construction-related dust impacts, CVWD would implement the control measures required under SCAQMD Rule 403 and 403.1, which include the extensive use of water and non-toxic chemical stabilizers for fugitive dust control.

Implementation of EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would avoid and minimize the release of hazardous materials (e.g., fuel, grease, lubricants, etc.) from vehicles or equipment and require that any spills be cleaned up immediately. Mitigation Measures SM-1 (Minimize Sand Impacts) and SM-2 (Prepare and Implement a Sand Migration Management Plan) would also avoid and minimize impacts to sand habitat. See Section 4.5 (Sand Migration) for details. To avoid and minimize sand compaction and stabilization impacts, CVWD would also implement Mitigation Measures BIO-2 through BIO-4, BIO-6, and BIO-7.

Mitigation Measure BIO-6 (Compensate for Habitat Loss) requires compensation for loss of native habitat from the project's direct and indirect impacts. This measure would offset the loss or degradation of habitat from alteration of hydrology on the Project site. To reduce weed-related impacts to native vegetation and habitat, CVWD would implement EC B-1 (Weed Abatement Program) to prevent or reduce the potential spread of invasive weeds, control existing weed populations, and plant native species after construction. This would avoid or minimize habitat degradation due to proliferation of invasive weeds and resulting stabilization of loose sands and avoid or minimize competition for water and nutrients between non-native weeds and native plants. In addition to EC B-1, Mitigation Measures BIO-4, BIO-5, BIO-7 and BIO-8 (see Impact BIO-1) would minimize or avoid direct and indirect Project impacts on native vegetation and habitat.

CVMSHCP Consistency

The CVMSHCP requires that land uses adjacent to or within a Conservation Area that use chemicals that are potentially toxic or may adversely affect wildlife, plants, habitat, or water quality shall incorporate measures to ensure that chemicals are not discharged in the Conservation Area. Implementation of EC W-1 and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would ensure consistency with this requirement.

The CVMSHCP includes conservation measures for desert dunes and the following measures would apply:

- Conserve the sand source/transport systems to ensure sustainability of the sand dunes and sand fields. Maintain and enhance aeolian (wind-blown) and fluvial (water-borne) sand transport systems and existing hydrological regimes.
- Control disturbance and compaction of sand dunes and sand fields.
- Avoid stabilization of sand dunes due to spread of non-native plant species and effects from adjacent development.

Mitigation Measures SM-1 (Minimize Sand Impacts) and SM-2 (Prepare and Implement a Sand Migration Management Plan) would also avoid and minimize impacts to desert dunes habitat. See Section 4.5 (Sand Migration) for details.

To avoid and minimize disturbance and removal of habitat, CVWD would also implement Mitigation Measures BIO-2 through BIO-4, BIO-6, and BIO-7.

Potential impacts to vegetation and habitat, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS and Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-13

EC B-1 (Weed Abatement Program)

EC W-1 (Hazardous Spills)

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Section 4.5 (Sand Migration) for the complete text of the following mitigation measures:

MM SM-1 (Minimize Sand Impacts)

MM SM-2 (Prepare and Implement a Sand Migration Management Plan)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

CVMSHCP/NCCP: This measure is required only for federal lands.

CEQA Significance Conclusion

The Project Study Area supports native vegetation and habitat, including sensitive desert dune habitat. The Project would result in the permanent loss and degradation of native vegetation and habitat through direct habitat disturbance and removal, and indirect fugitive dust, spills of hazardous materials, sand compaction and stabilization, interruption of sand transport, and alterations in local hydrology. These impacts would be significant without mitigation. Implementation of EC B-1 (Weed Abatement Program), EC W-1 (Hazardous Spills), EC SM-1 (Sand Removal and Distribution or Disposal), EC SM-2 (Adaptive Management Plan), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), SM-1 (Minimize Sand Impacts), SM-2 (Prepare and Implement a Sand Migration Management Plan), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), and BIO-8 (Prepare and Implement an Integrated Weed Management Plan), would reduce impacts to native vegetation and sand habitat to a less-than-significant level (Class II).

Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (Criterion BIO3).

Impact BIO-14: The Project would result in impacts to jurisdictional waters and downstream habitat.

The preliminary jurisdictional determination and delineation of waters report identified approximately 19.88 acres and 21,568 linear feet of CDFW jurisdictional waters within the proposed Project area (see Appendix D). Approximately 37.01 acres and 91,715 linear feet of CDFW jurisdictional waters were identified downstream of the Project. In addition, approximately 20,398 linear feet of jurisdictional Waters of the U.S. and State waters within the proposed Project area, totaling approximately 15.12 acres of non-wetland waters under the jurisdiction of USACE and RWQCB within the proposed Project (see Appendix D). Approximately 17.98 acres and 75,407 linear feet of jurisdictional Waters of the U.S. and State were identified downstream of the Project. Federal, State, and CDFW wetland waters do not occur in the Project area and would not be impacted by construction or O&M activities.

The Project would affect jurisdictional waters of CDFW, Waters of the State, and Waters of the U.S. during construction and O&M, by placing fill material into jurisdictional waters to construct levees; constructing channels or other flood control structures across jurisdictional drainages; and redirecting runoff away from existing natural channels. Direct impacts would include the removal of native vegetation, the discharge of fill, degradation of water quality, and altered hydrology. Indirect impacts could include alterations to the existing topographical and hydrological conditions and the introduction of non-native, invasive plant species. O&M impacts would be similar to direct and indirect impacts and would primarily occur as a result of sediment removal activities or repairs along the upstream side of the levees and channels or during the collection and distribution of windblown sand. These impacts are summarized in Table 4.6-5.

Table 4.6-5. Impacts to Jurisdictional Waters of CDFW, Waters of the U.S., and Waters of the State.

Location	Impact Type	Area (acres)	Length (linear feet)
CDFW Jurisdictional Waters			
Reach 1	Permanent	3.34	9,420
	Temporary	0.64	1,377
Reach 2	Permanent	0.63	2,527
	Temporary	0.06	208
Reach 3	Permanent	5.76	2,935
	Temporary	0.86	392
Reach 4	Permanent	5.26	3,218
	Temporary	3.34	1491
Downstream	Indirect	37.01	91,715
Permanent Total		**14.98**	**18,100**
Temporary Total		**4.9**	**3,468**
Grand Total**		**19.88**	**21,568**
Waters of the State and the U.S.*			
Reach 1	Permanent	2.23	10,042
	Temporary	0.37	1,527
Reach 2	Permanent	0.41	2,319
	Temporary	0.02	127

Table 4.6-5. Impacts to Jurisdictional Waters of CDFW, Waters of the U.S., and Waters of the State.			
Location	**Impact Type**	**Area (acres)**	**Length (linear feet)**
Reach 3	Permanent	4.97	2,355
	Temporary	0.76	331
Reach 4	Permanent	3.01	2,446
	Temporary	3.35	1,251
Downstream	Indirect	17.98	75,407
Permanent Total		**10.62**	**17,162**
Temporary Total		**4.50**	**3,236**
Grand Total**		**15.12**	**20,398**

* Waters of the U.S. and Waters of the State overlap, as such jurisdictional acreages are not additive.
** Grand total calculation only includes Permanent and Temporary impacts, not Indirect.

The importance of intermittent and ephemeral streams to wildlife in arid environments is well known (Levick et al., 2008). Ephemeral washes similar to those on the proposed sediment disposal site provide unique habitat that is distinct from the surrounding uplands providing more continuous vegetation cover and microtopographic diversity than the surrounding uplands. Ephemeral and intermittent streams in the arid west provide important habitat for wildlife and are responsible for much of the biotic diversity (Levick et al., 2008). They have higher moisture content and provide shade and cooler temperatures within the channel. In cases where the habitat is distinct in species composition, structure, or density, wash communities provide habitat values not available in the adjacent uplands. Wash dependent vegetation along desert washes drive food webs, provide seeds for regeneration, habitat for wildlife, access to water, and create cooler, more hospitable microclimatic conditions essential for a number of plant and animal species. Baxter (1988) noted that washes, because of their higher diversity plant communities, are probably important foraging locations for desert tortoise; in smaller washes, there is greater cover and diversity of spring annuals, providing important food sources.

The levees, channels, and other Project facilities will redirect water flows towards the east, reducing or eliminating the surface flow south (downstream) of the Project. Downstream habitat that could be affected by reduced or eliminated surface flow is similar to that in the adjacent reaches, and it is inter-spersed with developed areas. Some of the habitat is in isolated patches surrounded by development. As compared with habitat upstream of the proposed Project, the adjacent and interspersed land uses reduce the downstream habitat value for most special-status wildlife species.

Construction of the levees and channels would redirect runoff and sediment along the upstream sides of the linear project features. This alteration of natural runoff patterns could affect native vegetation and habitat above the levees by inundating, scouring, or covering it in sediment. In addition, interruption, impoundment, or redirection of natural flows (including infrequent storm flows) would prevent surface flows and sediment from reaching downstream vegetation and habitat in the channels. This effect could reduce vegetation productivity and related wildlife habitat values (e.g., food, shade, and shelter) along the intermittent channels and reduce availability of silt and sand as habitat substrate for plants and wildlife downstream.

Habitat functions in much of the Project area have been compromised to some degree from illegal dumping, invasive weeds, and OHV use. Reach 1 is located immediately north of a utility rights of way which bisect the drainages in the area and provides access for illegal dumping and vehicle passage. Although transient individuals of CVFTL and other species may occur in Reach 1 the drainages in this area

are compromised and have degraded habitat functions. OHV use is also common in the drainages along Reach 3. Nonetheless, impacts to these drainages from the Project would be considered adverse.

All Project impacts to waters of the State or waters of the U.S. (including construction and O&M phases) will be subject to permitting under the California Fish and Game Code and federal Clean Water Act (CWA). CVWD must prepare and submit appropriate applications, notifications, and fees to the USACE (per Section 404 of the CWA), the CDFW (per Sections 1600-1616 of the California Fish and Game Code), and the California Regional Water Quality Control Board (per Section 401 of the CWA). Federal CWA permitting is required for projects that would place dredged or fill material into jurisdictional waters of the U.S. State authorization is required if projects would 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 or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

As a part of the proposed Project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). The floodway will preserve a total of 70.41 acres (1.54 acres of USACE waters in Reach 1; 47.86 acres in Reach 2; and 21.00 acres in Reach 3). The total acres that need to be mitigated based on the proposed ratios provided in Table 5 is 30.28. Therefore, the floodway will preserve and enhance about two times the anticipated required mitigation for impacts to waters of the U.S. In addition, several drainages will receive increased connectivity, and flows that have been partially obstructed upstream. Land acquisition in the floodway would offset impacts if the acquired land is managed and maintained as habitat for special-status species. Potential impacts to vegetation and habitat would be reduced through implementation of a Storm Water Pollution Prevention Plan (SWPPP) including Best Management Practices (BMPs) in compliance with the conditions set forth in State and federal permits or authorizations (California Fish & Game Code Sections 1600-1616 and CWA Sections 401 and 404).

Mitigation Measure BIO-6 (Compensate for Habitat Loss) requires compensation for loss of native habitat from the project's direct and indirect impacts. This measure would offset the loss or degradation of habitat from alteration of hydrology on the Project site and on the downstream and downwind areas and the floodway by requiring off-site habitat compensation.

Mitigation Measure BIO-19 (Minimize and Mitigate Impacts to Jurisdictional Waters) requires minimization of impacts and requires off-site compensation for permanent impacts to jurisdictional waters and associated habitat. This measure would work in concert with Mitigation Measure BIO-6 (Compensate for Habitat Loss) to offset the loss or degradation of habitat from alteration of hydrology on the Project site and on the downstream and downwind areas and the floodway by requiring off-site habitat compensation.

Implementation of these measures would compensate for the effects of hydrology alteration to biological resources on the Project site and in downstream locations.

To reduce weed-related impacts to native vegetation and habitat, CVWD would implement EC B-1 (Weed Abatement Program) to prevent or reduce the potential spread of invasive weeds, control existing weed populations, and plant native species after construction. This would avoid or minimize habitat degradation due to proliferation of invasive weeds and resulting stabilization of loose sands and avoid or minimize competition for water and nutrients between non-native weeds and native plants. In addition to EC B-1, Mitigation Measures BIO-4, BIO-5, BIO-7 and BIO-8 (see Impact BIO-1) would minimize or avoid direct and indirect Project impacts on native vegetation and habitat that occurs within the drainages.

CVMSHCP Consistency

The CVMSHCP requires that land uses adjacent to or within a Conservation Area that use chemicals that are potentially toxic or may adversely affect wildlife, plants, habitat, or water quality shall incorporate measures to ensure that chemicals are not discharged in the Conservation Area. Implementation of EC W-1 and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), and PS-4 (Human Waste) would ensure consistency with this requirement. In addition, development projects within or adjacent to a Conservation Area shall incorporate plants to ensure quality and quantity of drainage is not altered when compared to existing conditions. Because the proposed Projects alignment would set the official boundary for the Conservation Area this condition would be achieved.

ECs and Mitigation Measures Applicable to Impact BIO-14

EC B-1 (Weed Abatement Program)

EC W-1 (Hazardous Spills)

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Section 4.5 (Sand Migration) for the complete text of the following mitigation measures:

MM SM-1 (Minimize Sand Impacts)

MM SM-2 (Prepare and Implement a Sand Migration Management Plan)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

MM BIO-19 **Minimize and Mitigate Impacts to Jurisdictional Waters.** CVWD shall mitigate direct and indirect impacts to State and federal waters through the acquisition and preservation of the 550-acre floodway. CVWD prepared a Conceptual Mitigation Plan that preserves approximately 70.41 acres of existing jurisdictional streambeds that occur in the 550-acre floodway to off-set the permanent loss of approximately 10.62 acres of waters of the US and indirect impacts to approximately 17.98 acres of waters of the US. The Plan describes the methods to assess functions and services and provides framework consistent with USACE requirements. Compensatory ratios range from 3:1 to 1:1 for permanent impacts to non-wetland jurisdictional areas. Ephemeral drainages that have lost connectivity below the levees and channels shall be mitigated at a ratio of 1:1. The total required compensatory mitigation is 30.28 acres. If the development footprint changes or existing features are lost to other development actions CVWD will verify project impacts and mitigation consistent with the guidelines identified in the Conceptual Mitigation Plan. Alternatively, CVWD may participate in a mitigation strategy consistent with the USEPA

2008 Rules for Compensatory mitigation, such as an in-lieu fee program or permittee responsible mitigation.

CVWD shall provide evidence to the USACE, RWQCB, and CDFW of an acceptable mitigation approach prior to construction or by an agreed upon date with the USACE, RWQCB, and CDFW.

Clean Water Act and California Fish and Game Code permit compliance. CVWD shall not proceed with any alteration or fill activities in potentially jurisdictional waters until obtaining applicable permits or authorizations, or written agency confirmation that no permit or authorization is required. CVWD shall implement all terms or conditions of each permit or authorization. Regardless of any conditions specified in permits or authorizations, CVWD shall prevent contaminants or pollutants from entering any state or federal jurisdictional waters.

CVMSHCP/NCCP: This measure is required on private and federal lands.

CEQA Significance Conclusion

The Project would result in temporary and permanent loss and degradation to jurisdictional waters of the State and waters of the US through direct habitat disturbance and removal, and indirect fugitive dust, potential spills of hazardous materials, and alterations in local hydrology. These impacts would be significant without mitigation. Implementation of EC B-1 (Weed Abatement Program), EC W-1 (Hazardous Spills), EC SM-1 (Sand Removal and Distribution or Disposal), EC SM-2 (Adaptive Management Plan), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), SM-1 (Minimize Sand Impacts), SM-2 (Prepare and Implement a Sand Migration Management Plan), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), and BIO-19 (Minimize and Mitigate Impacts to Jurisdictional Waters) would reduce impacts to State and waters of the US to a less-than-significant level (Class II).

Interfere with the movement of any native resident or migratory species or an established migratory corridor, or impede the use of native wildlife nursery sites (Criterion BIO4).

As discussed in Section 3.6 (Biological Resources), movement and dispersal corridors that connect large blocks of habitat are essential to the long-term viability of plant and wildlife populations. Fragmentation and isolation of natural habitat may cause loss of native species diversity in fragmented habitats. In the short term, wildlife movement may also be important to an animal's ability to occupy home ranges if a species range extends across a potential movement barrier. These considerations are especially important for rare, threatened, or endangered species, and wide-ranging species such as large mammals, which exist in low population densities.

Habitat-related Impacts to Wildlife

Impact BIO-15: The Project could cause disturbance to wildlife in adjacent habitat.

The scrub and dune habitats adjacent the proposed Project provide refugia and breeding habitat for a variety of common and sensitive reptiles, small mammals, birds, and invertebrates.

Some of the species known from the area are permanent residents such as desert iguana, zebra-tailed lizard, western whiptail, black-tailed jackrabbit, white-tailed antelope squirrel, and Gambel's quail. Other

species are winter residents that forage in and adjacent to the Project area. How the Project would affect individual species depends on many factors, including how a species tolerates disturbance and the ability of a species to adapt to features such as the access roads, levees and channels, increased noise levels (i.e., grading and construction), and periodic human presence.

While there would be no direct impacts to adjacent habitat, potential indirect impacts from the proposed Project would include fugitive dust, increased noise levels due to heavy equipment and vehicle traffic, light impacts from construction during low-light periods, alterations to existing topographical and hydrological conditions, increased erosion and sediment transport, and the establishment of noxious weeds. Noise and disturbance from construction and O&M activities could affect wildlife in adjacent habitats by interfering with breeding or foraging activities and movement patterns, causing animals to temporarily avoid areas adjacent to the construction zone. Nocturnal wildlife would be affected less by construction and O&M than diurnal species since activities would occur primarily during daylight hours. However, activities may also occur during dusk and dawn when many species are highly active. More mobile species such as birds and larger mammals would be likely to disperse into adjacent habitat areas during construction and O&M activities. However, smaller animals would be less able to disperse. Disturbance to wildlife in adjacent habitat would be adverse.

Implementation of EC PS-3 (Worker Training) would help to minimize the project's disturbance to wildlife in adjacent habitat. In addition, Mitigation Measures BIO-2 through BIO-4, BIO-7, BIO-8, and BIO-10 would minimize or avoid Project disturbance to wildlife in adjacent habitat.

CVMSHCP Consistency

The CVMSHCP requires that development adjacent to or within a Conservation Area will incorporate methods to minimize effects of lighting and noise. Implementation of Mitigation Measure BIO-10 would ensure consistency with this requirement. Potential disturbance to wildlife in adjacent habitat, and mitigation for any such impacts, would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS and Appendix C.5.

ECs and Mitigation Measures Applicable to Impact BIO-14

EC B-1 (Weed Abatement Program)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the complete text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

See Impact BIO-1 for the complete text of the following mitigation measures:

MM BIO-2 (Conduct Biological Monitoring and Reporting)

MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program)

MM BIO-4 (Minimize Native Vegetation and Habitat Loss)

MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas)

MM BIO-6 (Compensate for Habitat Loss)

MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan)

MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan)

See Impact BIO-2 for the complete text of the following mitigation measure:

MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan)

See Impact BIO-13 for the complete text of the following mitigation measure:

MM BIO-19 (Minimize and Mitigate Impacts to Jurisdictional Waters

CVMSHCP/NCCP: These measures are required on private and federal lands.

CEQA Significance Conclusion

Project-related impacts to common wildlife are typically not considered significant under CEQA. However, the large scale of the proposed Project and the ongoing O&M activities would result in long-term operational impacts to a wide variety of common wildlife species. Impacts to common wildlife from the loss of habitat or disturbance from construction or O&M activities would be considered less than significant (Class III).

Although not required, CVWD would implement EC B-1 (Weed Abatement Program) and EC W-1 (Hazardous Spills) to reduce impacts to wildlife habitat and disturbance to wildlife in adjacent habitat. Measures required to mitigate other Project impacts would also reduce impacts to wildlife habitat and disturbance to wildlife in adjacent habitat. These measures are Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), and BIO-19 (Minimize and Mitigate Impacts to Jurisdictional Waters).

Impact BIO-16: The Project could interfere with wildlife movement.

The Project site is located at the south and southwestern boundary of the Thousand Palms Conservation Area (Figure 3.6-1, Land Ownership). The CVMSHCP designates the Thousand Palms Conservation Area as a movement corridor or linkage that maintains biological connectivity with other conservation areas and Joshua Tree National Park (~~CVAG~~ CVCC, 2007), which are located to the north, east, and west of the Thousand Palms Conservation Area. Populations of CVFTL occur west of the proposed Project and in the large dune system near Reach 4. Preserving connectivity between these populations may prevent local extirpations. Habitat connectivity to the south and southwest is limited by urban development and by the I-10 freeway.

Construction activities would result in localized short-term disruption to movement by resident or migratory wildlife due to temporary noise, lighting, dust, and human activity in the work area. These activities may temporarily limit terrestrial wildlife movement in the Project area but would be limited to the different construction phases. The proposed Project would be constructed in phases commencing with Reach 4 and moving west in subsequent phases. This would allow wildlife to maintain movement and access to areas along the project corridor. Following construction, the Project levees and channels could form a localized movement barrier to some species, particularly small terrestrial species, and could isolate individuals in fragmented habitat areas downstream of the Project from larger habitat areas on the upstream side. Wildlife would be able to cross the earthen and soil cement structures across most of the levee and road crossings at two locations would allow mobile wildlife to cross the levee, albeit moving into residential areas.

The channels would be fenced for safety purposes which could restrict the movement of some animals. Wildlife located south of Reach 4 would have to cross the new Avenue 38 roadway and the flood control channel to move between the remaining open area and the Refuge. However, this area may pose a sink for wildlife as the area is frequented by OHV use and illegal dumping. Similarly, the channel at Reach 3 would be located in close proximity to development which would limit adverse effects to movement. Due to the existing barriers to the south and southwest, the Project would have minimal effects on wildlife between those areas and the Thousand Palms Conservation Area.

Construction would not directly affect wildlife moving among between the Thousand Palms Conservation Area and the other habitat areas to the north, east, and west. CVWD would maintain a floodway in front of the levees that would provide a movement corridor for local wildlife. This floodway width and ranges from a low of 20 feet to a high of over 300 feet. In addition, large blocks of land north of the proposed Project have been preserved (See Figure 2.1, Reach 1 and 2 Alignments). In addition, wildlife would maintain access south of Reach 1 along the existing utility corridor.

CVMSHCP Consistency

The CVMSHCP requires installation of culverts or under crossings under specific roads in Conservation Areas to maintain biological corridors. For the Thousand Palms Conservation Area, the CVMSHCP requires that, if Ramon Road, Washington Street, or Thousand Palms Canyon Road are widened to four lanes or more, undercrossing will be provided for Coachella Valley fringe-toed lizard, flat-tailed horned lizard, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse. The Project would include a conveyance system to direct stormwater flows under Washington Street, and some road realignment may be necessary. However, widening of Washington Street is not proposed as part of the Project (see Section 2.0, Project Description). The Project would not include any alteration of Ramon Road or Thousand Palms Canyon Road. Potential impacts to wildlife movement would not conflict with the CVMSHCP. Please also refer to the discussion of CVMSHCP consistency under Impact BIO 16 in this section of the EIS and Appendix C.5.

CEQA Significance Conclusion

The Project may result in localized and generally short-term hindrance of movement for resident or migratory wildlife, but the impact would not be significant (Class III).

Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan (Criterion BIO5).

There are no applicable local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The Project is within the plan area for the CVMSHCP. No other approved Habitat Conservation Plans, Natural Community Conservation Plans, or other approved conservation plans apply.

The Project is covered under the CVMSHCP, and therefore CVWD has “take” authorization for covered species’ habitat within the Plan Area, subject to conditions of applicable state and federal authorizations. Proposed Project components that are within CVMSHCP conservation areas are subject to the Joint Project Review process with the Coachella Valley Conservation Commission (CVCC), to allow the CVCC to facilitate and monitor implementation of the CVMSHCP. The Joint Project Review process determined that the Project is covered under the CVMSHCP (Appendix C.5), and therefore separate ESA and CESA authorizations would not be required.

Impact BIO-17: The Project could conflict with the CVMSHCP.

The CVMSHCP is described in Section 3.6.2.4. When the CVMSHCP was adopted in 2007, it included the earlier version of the Project as a covered activity, subject to the terms and conditions of the earlier Biological Opinion (BO, US Fish and Wildlife Service 2000). Therefore, the project's consistency with the CVMSHCP is addressed here to include both the CVMSHCP itself and the 2000 BO. As discussed earlier in Section 4.6.2, the current design of the Project does not conflict with the goals of the CVMSHCP (Appendix C.5). For impacts to federal species on federal lands a project-specific CDFW Incidental Take Permit and USFWS Section 7 consultation and Biological Opinion would be required for potential take of species listed under the California Endangered Species Act (CESA) and federal Endangered Species Act (ESA).

The CVMSHCP identifies four conservation areas in the Coachella Valley: Thousand Palms, Whitewater Floodplain, Willow Hole, and Edom Hill. According to the CVMSHCP, the final Project design was expected to cause a minor adjustment of the Thousand Palms Conservation Area such that the levees define the Conservation Area boundary but would not be within the Conservation Area itself (CVMSHCP, page 4-96; ~~CVAG~~ CVCC, 2007). However, in the intervening years, the Conservation Area boundaries have been established as shown on Figure 3.6-2, and the current Project design has been modified (approximately 0.7 percent difference in design, or 183 acres) from that described in the 2000 EIS/EIR. The proposed 2021 Project alignment will result in an approximately 1.16 percent (301 acres) change to the existing Conservation Area boundaries (Appendix C.5).

The Project's potential impacts to each species covered under the CVMSHCP are described above, and mitigation measures are identified to minimize these impacts. The proposed Project, with implementation of the identified mitigation measures, would be consistent with the CVMSHCP. In addition, the CVMSHCP identifies specific avoidance and minimization requirements for certain species in particular conservation areas. The species with avoidance and minimization requirements applicable to the Project are burrowing owl, crissal thrasher, and Le Conte's thrasher. These requirements are discussed in the analyses (above) of potential impacts to each species. The proposed Project, with implementation of the mitigation measures identified above, would not conflict with the applicable CVMSHCP avoidance and minimization requirements. Desert dunes located on the Project are identified as a sensitive habitat type, as defined by the CVMSHCP. The proposed Project, with implementation of mitigation measures identified in Section 4.5 (Sand Transport) would be consistent with the CVMSHCP. In addition, the CVMSHCP identifies specific conservation objectives for Sections 7 and 8 (i.e., the location of Project Reach 1) to minimize future impacts to sand transport as follows:

- Development shall not impede fluvial sand transport;
- Development shall be limited to 50% of parcels less than 4 acres and limited to 2 acres on parcels larger than 4 acres, undeveloped portions shall be permanently conserved as open space
- Driveways shall be at grade
- CVCC shall continue acquisition of vacant parcels
- CVCC and the County shall implement a land exchange program

The proposed Project, with implementation of mitigation measures identified in Section 4.5 (Sand Transport) would minimize potential impediment of fluvial sand transport. The other four conservation objectives listed above are not applicable to the Project.

Operation and maintenance (O&M) of the Project within existing rights-of-way or easements would be consistent with the CVMSHCP. For CVWD flood control facilities, covered O&M activities are defined in Section 7.3.1.1 (page 7-48) of the CVMHCP:

- The removal of sand, silt, sediment, debris, rubbish, woody, and herbaceous vegetation in existing flood control facilities in order to maintain design capacity of the facility and/or compliance with local fire regulations.
- Control of weeds and vegetation by non-chemical means, and control of debris on all access roads and CVWD rights-of-way.
- The repair or replacement of constructed flood control facilities, such as channels, basins, drop structures, and levees, as necessary to maintain the structural integrity and hydraulic capacity of the facility.

The proposed Project would be subject to the CVMSHCP Joint Project Review Process, to ensure consistent implementation and oversight of the CVMSHCP. The Joint Review Process analyzes the Project's potential impacts to Conservation Objectives for the Conservation Area, CVMSHCP Required Measures for the Conservation Area, Covered Species' Goals and Objectives, and maintenance of Rough Step in the Conservation Area (Rough Step analysis is done to ensure that CVMSHCP objectives are met). If the analysis identifies inconsistencies between the proposed Project and CVMSHCP objectives and requirements, the permittee and CVCC staff will meet and confer to identify requirements necessary to achieve compliance (~~CVAG~~ CVCC, 2007). The Joint Project Review process determined that the proposed Project constitutes a Covered Project under Section 7.3.1 and is consistent with the CVMSHCP (Appendix C.5).

CVMSHCP Consistency

The proposed Project does not conflict with the CVMSHCP (Appendix C.5). The Project's potential impacts to each species covered under the CVMSHCP are described above, and mitigation measures are identified to minimize these impacts. The proposed Project, with implementation of the identified mitigation measures, would be consistent with the CVMSHCP.

CEQA Significance Conclusion

The Project does not conflict with the CVMSHCP and no impacts would occur (Class III).

4.6.2.2 Removal of Reach 2 (Alternative 2)

For this alternative Reach 2 would not be constructed. Reaches 1, 3, and 4 would be implemented as described for the proposed Project. Construction activities would be exactly as described in Section 2.2.2 for the proposed Project (Alternative 1), except that no construction would occur along the proposed Reach 2.

Operation and maintenance activities associated with Alternative 2 would be the same as described in Section 2.2.3 for the proposed Project (Alternative 1), except that sand removal activities would not occur along Reach 2.

Direct and Indirect Effects Analysis

Have a substantial adverse direct or indirect effect on any candidate, sensitive, or special-status species identified by local, State, or federal agencies (Criterion BIO1).

Threatened, Endangered, and Special-status Plants

Impact BIO-1: The Project could affect special-status plants including Coachella Valley milk-vetch or its critical habitat.

Implementation of Alternative 2 would result in the same impacts to sensitive plants including Coachella Valley milk-vetch and its critical habitat from habitat loss and from the spread of invasive plant species as described for the proposed Project. Reach 2 is located outside of critical habitat for this species and Coachella Valley milk-vetch has not been observed near this location. Although the removal of Reach 2 would reduce disturbance to some natural lands, the habitat located adjacent to the SCE substation has been disturbed and sensitive plants have not been detected in this area. Under Alternative 2 impacts from construction O&M activities to sensitive plants including Coachella Valley milk-vetch and its critical habitat would be the same as the proposed Project.

CVMSHCP Consistency

On private lands the Coachella Valley milk-vetch is a covered species under the CVMSHCP. Direct impacts to this species is considered a covered activity and mitigated through participation in the CVMSHCP. The CVMSHCP does not specify avoidance and minimization requirements for Coachella Valley milk-vetch that would apply to the proposed Project.

On federal lands the Coachella Valley milk-vetch is not covered by the CVMSHCP and would require take authorization from the USFWS. CVWD and the USACE must obtain a “no jeopardy” opinion from the USFWS if the project would result in adverse modification to Coachella Valley milk-vetch critical habitat or may adversely affect Coachella Valley milk-vetch.

Chaparral sand-verbena and the other non-listed special-status plant species that may occur on the Project site are not covered by the CVMSHCP. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-1

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-1 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Threatened, Endangered, and Special-status Wildlife

Reptiles

Impact BIO-2: The Project could result in loss or disturbance to Coachella Valley fringe-toed lizard or flat-tailed horned lizard.

Implementation of Alternative 2 would result in the same types of construction impacts to CVFTL and FTHL as described for the proposed Project. The removal of Reach 2 would reduce permanent impacts to designated critical habitat for CVFTL from 85.72 acres to 81.06 acres compared to the proposed Project and reduce temporary impacts from 23.77 acres to 22.80 acres. However, there is only marginal habitat for CVFTL in Reach 2 and this species has not been observed there.

The removal of Reach 2 is not expected to alter the wind corridor but could reduce the amount of sediment that is transported through the system. Sediment flowing from Reach 1 may become trapped along the northern border of the SCE sub-station or become lost to the system if sediment is allowed to accumulate in this area. Under the proposed Project this material would flow along the face of Reach 2 intercepting Reach 3 below Ramon Road.

Under Alternative 2 impacts from O&M to FTHL, CVFTL and its critical habitat would be lower compared to the proposed Project.

CVMSHCP Consistency

On private lands the CVFTL and FTHL are covered species under the CVMSHCP. Direct impacts to these species are considered a covered activity and mitigated through participation in the CVMSHCP. The CVMSHCP does not specify avoidance and minimization requirements for either species that would apply to the proposed Project. Potential impacts to CVTHL or FTHL, and mitigation for any such impacts, would not conflict with the CVMSHCP.

On federal lands the CVFTL is not covered by the CVMSHCP and would require take authorization from the USFWS. CVWD and the USACE must obtain a “no jeopardy” opinion from the USFWS if the project would result in adverse modification to CVFTL critical habitat or may adversely affect CVFTL. then CVWD must obtain an Incidental Take Permit (ITP) for CVFTL from CDFW per the California Endangered Species Act (CESA) Section 2081.

ECs and Mitigation Measures Applicable to Impact BIO-2

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would reduce impacts to designated critical habitat for CVFTL compared to the proposed Project (Alternative 1); although this habitat is not expected to be occupied. Under Alternative 2 there may be a marginal reduction in sediment transport which would increase impacts to these species compared to the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-3: The Project could result in loss or disturbance to desert tortoise.

Desert tortoise have not been detected in the Project Study Area. If present implementation of Alternative 2 would result in the same types impacts as described for the proposed Project. Although the removal of

Reach 2 would reduce disturbance to some natural lands the habitat located adjacent to the SCE substation has been disturbed and desert tortoise have not been detected in this area. Under Alternative 2 O&M impacts would be lower compared to the proposed Project.

CVMSHCP Consistency

On private lands the desert tortoise are covered species under the CVMSHCP. Direct impacts to these species are considered a covered activity and mitigated through participation in the CVMSHCP. The CVMSHCP specifies avoidance and minimization requirements for desert tortoise within CVMSHCP modeled desert tortoise habitat. However, there is no CVMSHCP modeled desert tortoise habitat within the Project's temporary or permanent disturbance areas or in downstream areas or the floodway and the CVMSHCP avoidance and minimization requirements for desert tortoise do not apply.

On federal lands the desert tortoise is not covered by the CVMSHCP and would require take authorization from the USFWS. CVWD and the USACE must obtain a "no jeopardy" opinion from the USFWS if the project adversely affect desert tortoise. CVWD must obtain an Incidental Take Permit (ITP) from CDFW per the California Endangered Species Act (CESA) Section 2081.

ECs and Mitigation Measures Applicable to Impact BIO-3

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would reduce impacts to desert tortoise habitat compared to the proposed Project (Alternative 1); although this habitat is not expected to be occupied by this species. If present these impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Birds

No federal or State-listed bird species have the potential to permanently occupy or nest in the Project Study Area.

Impact BIO-4: The Project could result in disturbance to golden eagle.

Implementation of Alternative 2 would result in the same types of impacts to golden eagles as described for the proposed Project. Although the removal of Reach 2 would reduce disturbance to some natural lands the habitat located adjacent to the SCE substation is adjacent to development and golden eagles likely limit their presence in this area. Under Alternative 2 impacts from O&M activities would be lower compared to the proposed Project.

CVMSHCP Consistency

Golden eagle is not covered by the CVMSHCP. Potential impacts, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-4

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would reduce impacts to golden eagle habitat compared to the proposed Project (Alternative 1); although this habitat is not expected to be utilized by this species. If present these impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-5: The Project could result in disturbance of nesting birds.

Implementation of Alternative 2 would result in the same types of impacts to nesting birds as described for the proposed Project. The removal of Reach 2 would reduce disturbance to natural lands that support nesting birds including red tailed hawks which have been detected nesting in the towers adjacent to the substation. Under Alternative 2 impacts from O&M activities would be lower compared to the proposed Project.

CVMSHCP Consistency

Aside from burrowing owl, crissal thrasher, and Le Conte's thrasher (discussed below), the CVMSHCP does not specify avoidance and minimization requirements for nesting birds that would apply to the Project. Most nesting bird species that may occur on the Project site are not covered by the CVMSHCP. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-5

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-5 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-6: The Project could result in the loss of burrowing owl or its habitat.

Implementation of Alternative 2 would result in the same types of impacts to burrowing owls as described for the proposed Project. The removal of Reach 2 would reduce disturbance to natural lands that could support burrowing owls. Under Alternative 2 O&M impacts would be lower compared to the proposed Project.

CVMSHCP Consistency

Burrowing owl is considered a covered species under the CVMSHCP. Direct impacts to these species are considered a covered activity and mitigated through participation in the CVMSHCP. CVMSHCP would provide incidental take authorization for burrowing owl habitat, subject to mitigation and other requirements of the CVMSHCP, as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. The CVMSHCP has specific avoidance and minimization requirements for burrowing owl.

ECs and Mitigation Measures Applicable to Impact BIO-6

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-6 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-7: The Project could result in disturbance to special-status raptors and songbirds.

Implementation of Alternative 2 would result in the same types of impacts to special status raptors and songbirds as described for the proposed Project. The removal of Reach 2 would reduce disturbance to natural lands that could support these species including red tailed hawks which have been detected nesting in the towers adjacent to the substation. Under Alternative 2 impacts from O&M activities would be lower compared to the proposed Project.

CVMSHCP Consistency

Crissal thrasher and Le Conte's thrasher are covered species under the CVMSHCP. Participation in the CVMSHCP would provide incidental take authorization for crissal thrasher and Le Conte's thrasher, subject to mitigation and other requirements of the CVMSHCP as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. CVMSHCP modeled habitat for Le Conte's thrasher is found throughout most of the Project site, downstream areas, and floodway. CVMSHCP modeled habitat for crissal thrasher is found north of Reach 3. The CVMSHCP has specific avoidance and minimization requirements for crissal thrasher and Le Conte's thrasher in CVMSHCP modeled habitat.

ECs and Mitigation Measures Applicable to Impact BIO-6

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-7 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Mammals

No federal or State-listed mammals have the potential to occur in the Project Study Area.

Impact BIO-8: The Project could affect special-status bats, including Townsend's big-eared bat.

Implementation of Alternative 2 would result in the same types of impacts to special status bats as described for the proposed Project. The removal of Reach 2 would reduce disturbance to natural lands that could support foraging for these species. Under Alternative 2 impacts from O&M activities that could affect sensitive bats would be the same as the proposed Project.

CVMSHCP Consistency

Of the special-status bat species with potential to occur in the Project Study Area, only the western (southern) yellow bat is covered by the CVMSHCP. The CVMSHCP does not specify avoidance and minimization requirements for western yellow bat that would apply to the Project. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-8

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-8 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-9: The Project could result in disturbance to Nelson's bighorn sheep or mountain lion.

Implementation of Alternative 2 would result in the same types of impacts to Nelson's bighorn sheep and mountain lion as described for the proposed Project. The removal of Reach 2 would reduce disturbance to natural lands that could support foraging for these species; however, it is extremely unlikely this species would forage in this location due to the proximity of residential development and ongoing disturbance regimes. Under Alternative 2 impacts from O&M activities that could affect Nelson's bighorn sheep would be the same as the proposed Project.

CVMSHCP Consistency

Nelson's bighorn sheep and mountain lion are not covered by the CVMSHCP. Potential impacts to Nelson's bighorn sheep and mountain lion, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-9

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-9 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-10: The Project could result in mortality of, and loss of habitat for, special-status small mammals.

Implementation of Alternative 2 would result in the same types of impacts to for special-status small mammals as described for the proposed Project. The removal of Reach 2 would reduce disturbance to natural lands that could support habitat for these species. Under Alternative 2 impacts from O&M activities that could affect for special-status small mammals would be lower compared to the proposed Project.

CVMSHCP Consistency

Of the special-status small mammals potentially present on the Project site, only the Palm Springs pocket mouse and Palm Springs (Coachella Valley) round-tailed ground squirrel are covered under the CVMSHCP. Participation in the CVMSHCP would provide incidental take authorization for their habitat loss, subject to mitigation and other requirements of the CVMSHCP as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. The CVMSHCP does not specify avoidance and minimization requirements for Palm Springs pocket mouse or Palm Springs (Coachella

Valley) round-tailed ground squirrel that would apply to the Project. Potential impacts to small mammals, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-10

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-10 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-11: The Project could result in mortality of, and loss of habitat for, American badger or desert kit fox.

Implementation of Alternative 2 would result in the same types of impacts to American badger and desert kit fox as described for the proposed Project. The removal of Reach 2 would reduce disturbance to natural lands that could support habitat for these species; however, neither has been observed in this area. Under Alternative 2 impacts from O&M activities that could affect American badger and desert kit fox would be lower compared to the proposed Project.

CVMSHCP Consistency

American badger and desert kit fox are not covered by the CVMSHCP. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-11

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-11 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Invertebrates

Two special-status invertebrates potentially occur in the Study Area: Coachella Valley giant sand-treader cricket and Coachella Valley Jerusalem cricket. Other sensitive species could include shoulderband snails.

Impact BIO-12: The Project could result in the loss of Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket.

Implementation of Alternative 2 would result in the same types of impacts to sensitive invertebrates as described for the proposed Project. The removal of Reach 2 would reduce disturbance to natural lands; however, the Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket are more commonly associated with sandy soils that do not occur in Reach 2. The reduction in habitat may reduce impacts to other invertebrates if present. Under Alternative 2 impacts from O&M activities that could affect Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket would be lower compared to the proposed Project.

CVMSHCP Consistency

Both cricket species are covered under the CVMSHCP. Participation in the CVMSHCP would provide incidental take authorization, subject to mitigation and other requirements of the CVMSHCP as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. The CVMSHCP does not specify avoidance and minimization requirements for Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket that would apply to the Project. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-12

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-12 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified by local, State, or federal agencies (Criterion BIO2).

Impact BIO-13: The Project could result in temporary and permanent loss and degradation of native vegetation and habitat.

Implementation of Alternative 2 would result in the same types of impacts to native vegetation communities as described for the proposed Project. The removal of Reach 2 would reduce disturbance to 66.36 acres of total impacts to creosote scrub, a common native vegetation community, as opposed to 71.99 acres of total impacts (see Table 3.4-3). Under Alternative 2 impacts from O&M activities that could affect native vegetation communities would be lower compared to the proposed Project.

CVMSHCP Consistency

The CVMSHCP requires that land uses adjacent to or within a Conservation Area that use chemicals that are potentially toxic or may adversely affect wildlife, plants, habitat, or water quality shall incorporate measures to ensure that chemicals are not discharged in the Conservation Area. The CVMSHCP also includes conservation measures for desert dunes and the following measures would apply. Potential impacts to vegetation and habitat, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-13

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-13 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-14: The Project would result in impacts to jurisdictional waters and downstream habitat.

Implementation of Alternative 2 would result in the same types of impacts to CDFW, State, and non-wetland federal waters as described for the proposed Project. The removal of Reach 2 would reduce the amount of permanent loss to Waters of the U.S. and State by approximately2,318 linear feet and 0.41 acres when compared to the proposed Project (Alternative 1). This alternative would temporarily impact approximately 4.48 acres and 3,109 linear feet of State and federal waters due to construction activities, including staging and storage (a reduction of 0.02 acre and 127 linear feet compared to Alternative 1). Approximately 18.15 acres and 78,258 linear feet of State and federal waters located below the levees would be impacted through a reduction of hydrology (an increase of 0.17 acres and 2,851 linear feet compared to Alternative 1). The permanent loss to CDFW jurisdictional waters would be decreased by approximately 0.63 acres and 2,527 linear feet, but the impacts to downstream CDFW jurisdictional waters would be increased by approximately 0.23 acres and 735 linear feet. Temporary loss to CDFW jurisdictional waters would be decreased by approximately 0.06 acres and 208 linear feet. The floodway would retain a similar configuration under this alternative, and impacts would be similar to the proposed Project.

CVMSHCP Consistency

The CVMSHCP requires that land uses adjacent to or within a Conservation Area that use chemicals that are potentially toxic or may adversely affect wildlife, plants, habitat, or water quality shall incorporate measures to ensure that chemicals are not discharged in the Conservation Area. Potential impacts to jurisdictional waters and downstream habitat, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-14

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-14 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Interfere with the movement of any native resident or migratory species or an established migratory corridor, or impede the use of native wildlife nursery sites (Criterion BIO4).

Habitat-related Impacts to Wildlife

Impact BIO-15: The Project could cause disturbance to wildlife in adjacent habitat.

Implementation of Alternative 2 would result in the same types of impacts to common wildlife as described for the proposed Project. The removal of Reach 2 would reduce disturbance to natural lands that supports wildlife. Under Alternative 2 impacts from O&M activities that could affect wildlife in adjacent areas would be lower compared to the proposed Project.

CVMSHCP Consistency

The CVMSHCP requires that development adjacent to or within a Conservation Area will incorporate methods to minimize effects of lighting and noise. Implementation of Mitigation Measure BIO-10 would

ensure consistency with this requirement. Potential disturbance to wildlife in adjacent habitat, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-15

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-15 as described for the proposed Project (Alternative 1). Project-related impacts to common wildlife are typically not considered significant under CEQA. Impacts to common wildlife from the loss of habitat or disturbance from construction or O&M activities would be considered less than significant (Class III).

Impact BIO-16: The Project could interfere with wildlife movement.

Implementation of Alternative 2 would result in the same types of impacts that restrict or inhibit movement as described for the proposed Project. The removal of Reach 2 would reduce disturbance to natural lands that supports wildlife and would reduce a potential barrier to species with limited mobility. However, Reach 2 is located near an existing facility and on its own would not be expected to pose a substantial barrier to wildlife. Under Alternative 2 impacts from O&M activities that could affect wildlife movement would be lower compared to the proposed Project.

CVMSHCP Consistency

The CVMSHCP requires installation of culverts or under crossings under specific roads in Conservation Areas to maintain biological corridors. For the Thousand Palms Conservation Area, the CVMSHCP requires that, if Ramon Road, Washington Street, or Thousand Palms Canyon Road are widened to four lanes or more, under crossings will be provided for Coachella Valley fringe-toed lizard, flat-tailed horned lizard, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse. The Project would include a conveyance system to direct stormwater flows under Washington Street, and some road realignment may be necessary. However, widening of Washington Street is not proposed as part of the Project (see Section 2.0, Project Description). The Project would not include any alteration of Ramon Road or Thousand Palms Canyon Road. Potential impacts to wildlife movement would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-16

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 2 would result in the same types of impacts under Impact BIO-16 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan (Criterion BIO5).

Impact BIO-17: The Project could conflict with the CVMSHCP.

Implementation of Alternative 2 would require the same actions to conform to the CVMSHCP as described for the proposed Project.

CVMSHCP Consistency

The proposed Project does not conflict with the CVMSHCP (Appendix C.5). The Project's potential impacts to each species covered under the CVMSHCP are described above, and mitigation measures are identified to minimize these impacts. The proposed project, with implementation of the identified mitigation measures, would be consistent with the CVMSHCP. In August 2021, CVCC determined that the proposed Project is consistent with the CVMSHCP/NCCP and constitutes a Covered Project under Section 7.3.1 (Appendix C.5).

ECs and Mitigation Measures Applicable to Impact BIO-17

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

The Project does not conflict with the CVMSHCP and no impacts would occur (Class III).

4.6.2.3 Modified Reach 3 (Alternative 3)

Under this alternative there are two possible alignments of Reach 3. Each would be adjusted so the upstream portion of the levee angles more to the west/southwest compared to the proposed Project (Figure 2-9, Alternative 3a and 3b Alignments). Two options for this alternative are under consideration. Option A would tilt the levee portion of Reach 3 approximately six to 10 degrees to the west/southwest and Option B would tilt the levee approximately 17 degrees to the west/southwest respectively when compared to the levee for the proposed Project (Alternative 1).

Reaches 1, 2, and 4 would be implemented as described for the proposed Project.

Direct and Indirect Effects Analysis

Have a substantial adverse direct or indirect effect on any candidate, sensitive, or special-status species identified by local, State, or federal agencies (Criterion BIO1).

Threatened, Endangered, and Special-status Plants

Impact BIO-1: The Project could affect special-status plants including Coachella Valley milk-vetch or its critical habitat.

Implementation of Alternative 3 would result in the same types of impacts to sensitive plants including Coachella Valley milk-vetch and its critical habitat as described for the proposed Project. Reach 3 is located outside of critical habitat for this species and Coachella Valley milk-vetch has not been observed near this location. Option A and B both move Reach 3 further out of the wind corridor which may increase the amount of windblown sand available to the Refuge. Option B would provide the greatest reduction to impacts to the wind corridor and would allow greater area to be available above the levee when compared to the proposed Project (Alternative 1). Under Alternative 3 impacts from construction and O&M activities to sensitive plants including Coachella Valley milk-vetch and its critical habitat would be the same as the proposed Project.

CVMSHCP Consistency

On private lands the Coachella Valley milk-vetch is a covered species under the CVMSHCP. Direct impacts to this species is considered a covered activity and mitigated through participation in the CVMSHCP. The

CVMSHCP does not specify avoidance and minimization requirements for Coachella Valley milk-vetch that would apply to the proposed Project.

On federal lands the Coachella Valley milk-vetch is not covered by the CVMSHCP and would require take authorization from the USFWS. CVWD and the USACE must obtain a "no jeopardy" opinion from the USFWS if the project would result in adverse modification to Coachella Valley milk-vetch critical habitat or may adversely affect Coachella Valley milk-vetch.

Chaparral sand-verbena and the other non-listed special-status plant species that may occur on the Project site are not covered by the CVMSHCP. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-1

Alternative 2 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-1 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Threatened, Endangered, and Special-status Wildlife

Reptiles

Impact BIO-2: The Project could result in loss or disturbance to Coachella Valley fringe-toed lizard or flat-tailed horned lizard.

Implementation of Option A or Option B for Alternative 3 would result in the same types of construction impacts to CVFTL and FTHL as described for the proposed Project. Shifting Reach 3 would reduce permanent impacts to designated critical habitat for CVFTL from 85.72 acres to 85.32 acres for Option A and from 85.72 acres to 81.54 acres for Option B when compared to the proposed Project. However, there is only marginal habitat for CVFTL in the portion of Reach 3 where the alignment shift would occur and this species has not been observed there. Temporary impacts to critical habitat would remain similar (Alt 1- 23.77 acres, Option A- 23.23 acres, and Option B-22.47 acres).

Under both options of Alternative 3 impacts from O&M to FTHL, CVFTL and its critical habitat would be lower compared to the proposed Project.

CVMSHCP Consistency

On private lands the CVFTL and FTHL are covered species under the CVMSHCP. Direct impacts to these species are considered a covered activity and mitigated through participation in the CVMSHCP. The CVMSHCP does not specify avoidance and minimization requirements for either species that would apply to the proposed Project. Potential impacts to CVTHL or FTHL, and mitigation for any such impacts, would not conflict with the CVMSHCP.

On federal lands the CVFTL is not covered by the CVMSHCP and would require take authorization from the USFWS. CVWD and the USACE must obtain a "no jeopardy" opinion from the USFWS if the project would result in adverse modification to CVFTL critical habitat or may adversely affect CVFTL. Then CVWD

must obtain an Incidental Take Permit (ITP) for CVFTL from CDFW per the California Endangered Species Act (CESA) Section 2081.

ECs and Mitigation Measures Applicable to Impact BIO-2

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-2 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-3: The Project could result in loss or disturbance to desert tortoise.

Desert tortoise have not been detected in the Project Study Area and would not be expected to occur in the alignment for Option A or Option B for Reach 3. If present implementation of either Option for Alternative 3 would result in the same types impacts as described for the proposed Project. Although modifications to the alignment would protect allow greater natural lands to occur above the Reach the habitat located in this area has been disturbed and desert tortoise have not been detected in this area. Option B would reduce impacts to habitat when compared to the proposed Project or Option A. Under Alternative 3 O&M impacts would be the same compared to the proposed Project.

CVMSHCP Consistency

On private lands the desert tortoise are covered species under the CVMSHCP. Direct impacts to these species are considered a covered activity and mitigated through participation in the CVMSHCP. The CVMSHCP specifies avoidance and minimization requirements for desert tortoise within CVMSHCP modeled desert tortoise habitat. However, there is no CVMSHCP modeled desert tortoise habitat within the Project's temporary or permanent disturbance areas or in downstream areas or the floodway and the CVMSHCP avoidance and minimization requirements for desert tortoise do not apply.

On federal lands the desert tortoise is not covered by the CVMSHCP and would require take authorization from the USFWS. CVWD and the USACE must obtain a "no jeopardy" opinion from the USFWS if the project adversely affect desert tortoise. CVWD must obtain an Incidental Take Permit (ITP) from CDFW per the California Endangered Species Act (CESA) Section 2081.

ECs and Mitigation Measures Applicable to Impact BIO-3

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-3 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Birds

No federal or State-listed bird species have the potential to permanently occupy or nest in the Project Study Area.

Impact BIO-4: The Project could result in disturbance to golden eagle.

Implementation of Option A or Option B for Alternative 3 would result in the same types of construction impacts to golden eagles as described for the proposed Project. Shifting Reach 3 would increase permanent impacts to potential foraging habitat by approximately 0.57 acres (Option A) or reduce permanent impacts by approximately 0.25 acres (Option B) respectively. Option B would reduce impacts to habitat when compared to the proposed Project or Option A. However, golden eagles are not likely to forage in this area due to the proximity of residential development.

Under Alternative 3 O&M impacts would be the same compared to the proposed Project.

CVMSHCP Consistency

Golden eagle is not covered by the CVMSHCP. Potential impacts, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-4

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-4 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-5: The Project could result in disturbance of nesting birds.

Implementation of Option A or Option B for Alternative 3 would result in the same types of construction impacts to nesting birds as described for the proposed Project. Shifting Reach 3 would increase permanent impacts to potential foraging habitat by approximately 0.57 acres (Option A) or reduce permanent impacts by approximately 0.25 acres (Option B), respectively. Option B would reduce impacts to habitat when compared to the proposed Project or Option A.

Under Alternative 3 O&M impacts would be the same compared to the proposed Project.

CVMSHCP Consistency

Aside from burrowing owl, crissal thrasher, and Le Conte's thrasher (discussed below), the CVMSHCP does not specify avoidance and minimization requirements for nesting birds that would apply to the Project. Most nesting bird species that may occur on the Project site are not covered by the CVMSHCP. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-5

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-5 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-6: The Project could result in the loss of burrowing owl or its habitat.

Implementation of Option A or Option B for Alternative 3 would result in the same types of construction impacts to burrowing owl as described for the proposed Project. Shifting Reach 3 would increase permanent impacts to potential foraging habitat by approximately 0.57 acres (Option A) or reduce permanent impacts by approximately 0.25 acres (Option B), respectively. Option B would reduce impacts to habitat when compared to the proposed Project or Option A. Under Alternative 3 O&M impacts would be the same compared to the proposed Project.

CVMSHCP Consistency

Burrowing owl is considered a covered species under the CVMSHCP. Direct impacts to these species are considered a covered activity and mitigated through participation in the CVMSHCP. CVMSHCP would provide incidental take authorization for burrowing owl habitat, subject to mitigation and other requirements of the CVMSHCP, as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. The CVMSHCP has specific avoidance and minimization requirements for burrowing owl.

ECs and Mitigation Measures Applicable to Impact BIO-6

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-6 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-7: The Project could result in disturbance to special-status raptors and songbirds.

Implementation of Option A or Option B for Alternative 3 would result in the same types of construction impacts to special-status raptors and songbirds as described for the proposed Project. Shifting Reach 3 would increase permanent impacts to potential foraging habitat by approximately 0.57 acres (Option A) or reduce permanent impacts by approximately 0.25 acres (Option B), respectively. Option B would reduce the most impacts to habitat when compared to the proposed Project or Option A. Under Alternative 3 O&M impacts would be the same compared to the proposed Project.

CVMSHCP Consistency

Crissal thrasher and Le Conte's thrasher are covered species under the CVMSHCP. Participation in the CVMSHCP would provide incidental take authorization for crissal thrasher and Le Conte's thrasher, subject to mitigation and other requirements of the CVMSHCP as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. CVMSHCP modeled habitat for Le Conte's thrasher is found throughout most of the Project site, downstream areas, and floodway.

CVMSHCP modeled habitat for crissal thrasher is found north of Reach 3. The CVMSHCP has specific avoidance and minimization requirements for crissal thrasher and Le Conte's thrasher in CVMSHCP modeled habitat.

ECs and Mitigation Measures Applicable to Impact BIO-7

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-7 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Mammals

No federal or State-listed mammals have the potential to occur in the Project Study Area.

Impact BIO-8: The Project could affect special-status bats, including Townsend's big-eared bat.

Implementation of Option A or Option B for Alternative 3 would result in the same types of construction impacts to special-status bats as described for the proposed Project. Shifting Reach 3 would increase permanent impacts to potential foraging habitat by approximately 0.57 acres (Option A) or reduce permanent impacts by approximately 0.25 acres (Option B), respectively. Roosting habitat for yellow bat would not be affected by either option. Option B would reduce the most impacts to habitat when compared to the proposed Project or Option A. Under Alternative 3 O&M impacts would be the same compared to the proposed Project.

CVMSHCP Consistency

Of the special-status bat species with potential to occur in the Project Study Area, only the western (southern) yellow bat is covered by the CVMSHCP. The CVMSHCP does not specify avoidance and minimization requirements for western yellow bat that would apply to the Project. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-8

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-8 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-9: The Project could result in disturbance to Nelson's bighorn sheep or mountain lion.

Nelson's bighorn sheep have not been detected in the Project Study Area and would not be expected to occur in the alignment for Option A or Option B for Reach 3. Mountain lion may occur as a periodic nocturnal visitor to the area. If present implementation of either Option for Alternative 3 would result in

the same types of impacts as described for the proposed Project. Although modifications to the alignment would protect allow greater natural lands to occur above the Reach these species are not expected to occur in this area. Option B would reduce impacts to habitat when compared to the proposed Project or Option A. Under Alternative 3 O&M impacts would be the same compared to the proposed Project.

CVMSHCP Consistency

Nelson's bighorn sheep and mountain lion are not covered by the CVMSHCP. Potential impacts to Nelson's bighorn sheep and mountain lion, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-9

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-9 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-10: The Project could result in mortality of, and loss of habitat for, special-status small mammals.

Implementation of Option A or Option B for Alternative 3 would result in the same types of construction impacts to, special-status small mammals as described for the proposed Project. Shifting Reach 3 would increase permanent impacts to potential foraging habitat by approximately 0.57 acres (Option A) or reduce permanent impacts by approximately 0.25 acres (Option B), respectively. Option B would reduce the most impacts to habitat when compared to the proposed Project or Option A. Under Alternative 3 O&M impacts would be the same compared to the proposed Project.

CVMSHCP Consistency

Only the Palm Springs pocket mouse and Palm Springs (Coachella Valley) round-tailed ground squirrel are covered under the CVMSHCP. Participation in the CVMSHCP would provide incidental take authorization for their habitat loss, subject to mitigation and other requirements of the CVMSHCP as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. The CVMSHCP does not specify avoidance and minimization requirements for Palm Springs pocket mouse or Palm Springs (Coachella Valley) round-tailed ground squirrel that would apply to the Project. Potential impacts to small mammals, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-10

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-10 as described for the proposed Project (Alternative 1). These impacts would be considered

significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-11: The Project could result in mortality of, and loss of habitat for, American badger or desert kit fox.

Implementation of Option A or Option B for Alternative 3 would result in the same types of construction impacts to American badger or desert kit fox as described for the proposed Project. Shifting Reach 3 would increase permanent impacts to potential foraging habitat by approximately 0.57 acres (Option A) or reduce permanent impacts by approximately 0.25 acres (Option B), respectively. Option B would reduce the most impacts to habitat when compared to the proposed Project or Option A. Under Alternative 3 O&M impacts would be the same compared to the proposed Project.

CVMSHCP Consistency

Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-11

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-11 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Invertebrates

Two special-status invertebrates potentially occur in the Study Area: Coachella Valley giant sand-treader cricket and Coachella Valley Jerusalem cricket.

Impact BIO-12: The Project could result in the loss of Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket.

Implementation of Option A or Option B for Alternative 3 would result in the same types of construction impacts to Coachella Valley giant sand-treader cricket and Coachella Valley Jerusalem cricket as described for the proposed Project. Shifting Reach 3 will result in the same impacts to suitable dune habitat for the Coachella Valley giant sand-treader cricket and Coachella Valley Jerusalem cricket as the proposed Project (Alternative 1). Under Alternative 3 O&M impacts would be the same compared to the proposed Project.

CVMSHCP Consistency

Both cricket species are covered under the CVMSHCP. Participation in the CVMSHCP would provide incidental take authorization, subject to mitigation and other requirements of the CVMSHCP as well as any additional mitigation measures specified in this EIR/EIS and adopted in the USACE's Record of Decision. The CVMSHCP does not specify avoidance and minimization requirements for Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket that would apply to the Project. Potential impacts to these species, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-12

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts under Impact BIO-12 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified by local, State, or federal agencies (Criterion BIO2).

Impact BIO-13: The Project could result in temporary and permanent loss and degradation of native vegetation and habitat.

Implementation of Option A or Option B for Alternative 3 would result in the same acreage impacts to the same native vegetation communities as described for the proposed Project (see Table 3.4-3). Under Alternative 3 impacts from O&M activities that could affect native vegetation communities would be the same as the proposed Project.

CVMSHCP Consistency

The CVMSHCP requires that land uses adjacent to or within a Conservation Area that use chemicals that are potentially toxic or may adversely affect wildlife, plants, habitat, or water quality shall incorporate measures to ensure that chemicals are not discharged in the Conservation Area. The CVMSHCP also includes conservation measures for desert dunes and the following measures would apply. Potential impacts to vegetation and habitat, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-13

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 3 would result in the same types of impacts under Impact BIO-12 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Impact BIO-14: The Project would result in impacts to jurisdictional waters and downstream habitat.

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts to State and non-wetland federal waters as described for the proposed Project. Construction activities would be exactly as described for the proposed Project (Alternative 1), except that the physical location of Reach 3 would be changed.

Option A would directly permanently impact approximately 5.72 acres and 16,818 linear feet of Waters of the U.S. and the State compared to 10.62 acres and 17,162 linear feet for the proposed Project (a reduction of 4.9 acres and 344 linear feet). Option A would decrease impacts to downstream Waters of

the U.S. and the State cut off by the levee and channels from 17.98 acres and 75,407 linear feet for the proposed Project to approximately 9.5 acres and 74,203 linear feet for Option A (a reduction of 8.48 acres and 1,204 linear feet). Option A would directly permanently impact approximately 11.65 acres and 17,611 linear feet of CDFW jurisdictional waters compared to the 14.98 acres and 18,100 linear feet for the proposed Project (a reduction of 3.33 acres and 489 linear feet). Option A would decrease the impacts to downstream CDFW jurisdictional waters cut off by the levee and channels from 37.01 acres and 19,715 linear feet for the proposed Project to approximately 28.74 acres and 91,154 linear feet for Option A (a reduction of 8.27 acres and 561 linear feet).

Option B would directly permanently impact approximately 7.29 acres and 16,192 linear feet of Waters of the U.S., which would result in a reduction of permanent impacts by 3.33 acres and 970 linear feet compared to the proposed Project. This option would reduce impacts to downstream features from 17.98 acres and 75,407 linear feet for the proposed Project to approximately 11.04 acres and 72,383 linear feet (a reduction of 6.94 acres and 3,024 linear feet). Option B would directly permanently impact approximately 11.56 acres and 17,127 linear feet of CDFW jurisdictional waters compared to the 14.98 acres and 18,100 linear feet for the proposed Project (a reduction of 3.42 acres and 973 linear feet). Option B would increase the acreage impacts to downstream CDFW jurisdictional waters cut off by the levee and channels from 37.01 acres for the proposed Project to approximately 51.86 acres for Option B (an increase of 14.85 acres). Option B would decrease the linear feet impacts from 91,715 linear feet for the proposed Project to approximately 91,451 linear feet for Option B (a decrease of 264 linear feet).

CVMSHCP Consistency

The CVMSHCP requires that land uses adjacent to or within a Conservation Area that use chemicals that are potentially toxic or may adversely affect wildlife, plants, habitat, or water quality shall incorporate measures to ensure that chemicals are not discharged in the Conservation Area. Potential impacts to jurisdictional waters and downstream habitat, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-14

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 3 would result in the same types of impacts under Impact BIO-14 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Interfere with the movement of any native resident or migratory species or an established migratory corridor, or impede the use of native wildlife nursery sites (Criterion BIO4).

Habitat-related Impacts to Wildlife

Impact BIO-15: The Project could cause disturbance to wildlife in adjacent habitat.

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts to common wildlife as described for the proposed Project. Shifting the alignment for either Option A or B would substantially alter the projects impacts to wildlife in adjacent habitat. Under Alternative 3 impacts from O&M activities would be the same as the proposed Project.

CVMSHCP Consistency

The CVMSHCP requires that development adjacent to or within a Conservation Area will incorporate methods to minimize effects of lighting and noise. Implementation of Mitigation Measure BIO-10 would ensure consistency with this requirement. Potential disturbance to wildlife in adjacent habitat, and mitigation for any such impacts, would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-15

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 3 would result in the same types of impacts under Impact BIO-15 as described for the proposed Project (Alternative 1). Project-related impacts to common wildlife are typically not considered significant under CEQA. Impacts to common wildlife from the loss of habitat or disturbance from construction or O&M activities would be considered less than significant (Class III).

Impact BIO-16: The Project could interfere with wildlife movement.

Implementation of Option A or Option B for Alternative 3 would result in the same types of impacts to wildlife movement as described for the proposed Project. Shifting the alignment for either Option A or B would substantially alter the projects impacts to wildlife in adjacent habitat or alter movement patterns. Under Alternative 3 impacts from O&M activities would be the same as the proposed Project.

CVMSHCP Consistency

The CVMSHCP requires installation of culverts or under crossings under specific roads in Conservation Areas to maintain biological corridors. For the Thousand Palms Conservation Area, the CVMSHCP requires that, if Ramon Road, Washington Street, or Thousand Palms Canyon Road are widened to four lanes or more, under crossings will be provided for Coachella Valley fringe-toed lizard, flat-tailed horned lizard, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse. The Project would include a conveyance system to direct stormwater flows under Washington Street, and some road realignment may be necessary. However, widening of Washington Street is not proposed as part of the Project (see Section 2.0, Project Description). The Project would not include any alteration of Ramon Road or Thousand Palms Canyon Road. Potential impacts to wildlife movement would not conflict with the CVMSHCP.

ECs and Mitigation Measures Applicable to Impact BIO-15

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Alternative 3 would result in the same types of impacts under Impact BIO-16 as described for the proposed Project (Alternative 1). These impacts would be considered significant. Implementation of the same ECs and mitigation measures as for the proposed Project would reduce impacts to a less-than-significant level (Class II).

Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan (Criterion BIO5).

Impact BIO-16: The Project could conflict with the CVMSHCP.

Implementation of Option A or Option B for Alternative 3 would require the same actions to conform to the CVMSHCP as described for the proposed Project.

CVMSHCP Consistency

The proposed Project does not conflict with the CVMSHCP. The Project's potential impacts to each species covered under the CVMSHCP are described above, and mitigation measures are identified to minimize these impacts. The proposed project, with implementation of the identified mitigation measures, would be consistent with the CVMSHCP. In August 2021, CVCC determined that the proposed Project is consistent with the CVMSHCP/NCCP and constitutes a Covered Project under Section 7.3.1 (Appendix C.5).

ECs and Mitigation Measures Applicable to Impact BIO-16

Both options of Alternative 3 would implement the same requirements as the proposed Project (Alternative 1).

CEQA Significance Conclusion

Implementation of Option A or Option B for Alternative 3 does not conflict with the CVMSHCP and no impacts would occur (Class III).

4.6.2.4 No Action Alternative (Alternative 4)

Under the No Action Alternative, Project construction would not occur and flood risk to the area would remain. Flood protection to the developed areas within the FEMA-designated Flood Hazard Area would not be provided. Impacts to sensitive biological resources would not occur from any Project-related activities. However, ongoing sediment removal conducted by the county on Avenue 38 would continue to occur as needed. Sensitive resources found in that location including CVFTL would be subject to periodic loss during sediment removal activities. Without the levee on Reach sediment would continue to be lost from the system as storm flows carry material into developed areas south of the proposed Project. Without this material dune communities, would continue to erode with limited soil replenishment. In the event of catastrophic flooding some of the dune areas could be washed away and or repairs and/or construction activities would be expected that could impact sensitive resources.

4.6.2.5 Direct and Indirect Effects Analysis

Have a substantial adverse direct or indirect effect on any candidate, sensitive, or special-status species identified by local, State, or federal agencies (Criterion BIO1).

Under the No Action/No Project Alternative impacts to listed plant populations critical habitat (Impact BIO-1), Coachella Valley fringe-toed lizard and flat-tailed horned lizard (Impact BIO-2), desert tortoise (Impact BIO-3), golden eagle (Impact BIO-4), and nesting birds (impact BIO-5, Impact BIO-6, and Impact BIO-7) would not occur. Overtime, habitat in the dunes would continue to degrade as sediment is lost to the system and sand is transported south of Avenue 38. Under the No Action/No Project Alternative impacts to sensitive mammals (Impact BIO-8, Impact BIO-9, Impact BIO-10, and Impact BIO-11) and sensitive invertebrates (Impact BIO-12) would also not occur. The loss of sediment may have long term consequences for sand dependent species. In addition, in the event of catastrophic flooding portions of critical habitat including the dune community located near Reach 4 could be damaged.

CEQA Significance Conclusion

In the event of catastrophic flooding impacts to biological resources would be similar should major repairs be required to restore access roads and or damaged property when compared to the proposed Project. These impacts would be considered significant (Class II).

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified by local, State, or federal agencies (Criterion BIO2).

Under the No Action/No Project Alternative impacts to native vegetation (impact BIO-13) and jurisdictional features (Impact BIO-14) would not occur.

CEQA Significance Conclusion

In the event of catastrophic flooding impacts to biological resources would be similar should major repairs be required to restore access roads and or damaged property when compared to the proposed Project. These impacts would be considered significant (Class II).

Interfere with the movement of any native resident or migratory species or an established migratory corridor, or impede the use of native wildlife nursery sites (Criterion BIO4).

Under the No Action/No Project Alternative impacts to wildlife (Impact BIO-15) and wildlife movement or nursery sites (Impact BIO-16) would not occur. Although impacts to wildlife movement were expected to be limited for the proposed Project implementation of the Under the No Action/No Project Alternative would remove a potential barrier for small low mobility animals.

CEQA Significance Conclusion

In the event of catastrophic flooding impacts to wildlife and wildlife movement would be similar should major repairs be required to restore access roads and or damaged property when compared to the proposed Project. These impacts would be considered less than significant (Class III).

Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan (Criterion BIO5).

Under the No Action/No Project Alternative the project would not be constructed and there would be no conflicts with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan.

CEQA Significance Conclusion

The No Action/No Project Alternative does not conflict with the CVMSHCP and no impacts would occur (Class III).

4.6.3 Impact Summary – Biological Resources

Table 4.6-6 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to biological resources. Refer to Section 4.6.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures.

Table 4.6-6. Summary of Impacts and Mitigation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	Alt. 4: No Action	
BIO-1: The Project could disturb Coachella Valley milk-vetch or its critical habitat.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste) MM BIO-1 (Conduct Pre-construction Biological Resources Surveys) MM BIO-2 (Conduct Biological Monitoring and Reporting) MM BIO-3 (Prepare and Implement Worker Environmental Awareness Program) MM BIO-4 (Minimize Native Vegetation and Habitat Loss) MM BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas) MM BIO-6 (Compensate for Habitat Loss) MM BIO-7 (Prepare and Implement an Operations & Maintenance Plan) MM BIO-8 (Prepare and Implement an Integrated Weed Management Plan) MM BIO-9 (Minimize and Mitigate Impacts to Special-status Plants)
BIO-2: The Project could result in the loss of non-listed special-status plants.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-9
BIO-3: The Project could result in loss or disturbance to Coachella Valley fringe-toed lizard.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM AQ-x (Control Fugitive Dust) MM PS-2 through PS-4 MM BIO-1 through BIO-8 MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan) MM BIO-11 (Conduct Coachella Valley Fringe-toed Lizard and Flat-tailed Horned Lizard Surveys, Monitoring, and Avoidance)
BIO-4: The Project could result in loss or disturbance to desert tortoise.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10

Table 4.6-6. Summary of Impacts and Mitigation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	Alt. 4: No Action	
					MM BIO-12 (Conduct Desert Tortoise Surveys, Monitoring, and Avoidance and Prepare a Desert Tortoise Relocation Plan) MM BIO-13 (Prepare and Implement Raven Monitoring, Management, and Reporting Plan)
BIO-5: The Project could result in loss or disturbance to flat-tailed horned lizard.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10 and BIO-11
BIO-6: The Project could result in disturbance to golden eagle.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10
BIO-7: The Project could result in disturbance to Townsend's big-eared bat.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-2 through BIO-8, BIO-10 MM BIO-15 (Prepare and Implement a Nesting Bird Management Plan)
BIO-8: The Project could result in disturbance to Nelson's bighorn sheep or mountain lion.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10
BIO-9: The Project could result in the loss of Coachella Valley giant sand-treader cricket or Coachella Valley Jerusalem cricket.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10
BIO-10: The Project would result in the loss of burrowing owl or its habitat.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10 BIO-14 (Conduct Surveys and Avoidance for Burrowing Owl) BIO-15 (Prepare and Implement a Nesting Bird Management Plan)

Table 4.6-6. Summary of Impacts and Mitigation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	Alt. 4: No Action	
BIO-11: The Project could result in disturbance to special-status raptors and songbirds.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10, and BIO-15
BIO-12: The Project could result in disturbance of nesting birds.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10, and BIO-15
BIO-13: The Project could result in mortality of, and loss of habitat for, special-status bats.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10, BIO-15 BIO-16 (Conduct Surveys and Avoidance for Bat Roosts)
BIO-14: The Project could result in mortality of, and loss of habitat for, special-status small mammals.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10 BIO-17 (Conduct Surveys and Avoidance for Special-status Small Mammals)
BIO-15: The Project could result in mortality of American badger or desert kit fox.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC B-2 (Biological Monitoring and Relocation of Sensitive Species) EC B-3 (Avoid Impacts to Sensitive Species) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, BIO-10 BIO-18 (Conduct Surveys and Avoidance for American Badger and Desert Kit Fox)
BIO-16: The Project would result in temporary and permanent loss and degradation of native vegetation and habitat.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) EC W-1 (Hazardous Spills) EC SM-1 (Sand Removal and Distribution or Disposal) EC SM-2 (Adaptive Management Plan) MM PS-2 through PS-4 MM SM-1 (Minimize Sand Impacts) MM SM-2 (Prepare and Implement a Sand Migration Management Plan) MM BIO-2 through BIO-8 BIO-19 (Minimize and Mitigate Impacts to Jurisdictional Waters)

Table 4.6-6. Summary of Impacts and Mitigation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	Alt. 4: No Action	
BIO-17: The Project could result in the establishment and spread of invasive weeds.	Class II	Class II	Class II	Class II	EC B-1 (Weed Abatement Program) MM BIO-4, BIO-5, BIO-7, and BIO-8
BIO-18: The Project would cause the loss or degradation of habitat for wildlife or result in disturbance to wildlife in adjacent habitat.	Class III	Class III	Class III	Class III	EC B-1 (Weed Abatement Program) EC W-1 (Hazardous Spills) MM PS-2 through PS-4 MM BIO-1 through BIO-8, and BIO-19
BIO-19: The Project would result in impacts to jurisdictional waters and downstream habitat.	Class II	Class II	Class II	Class II	MM BIO-6 and BIO-19
BIO-20: The Project would interfere with wildlife movement.	Class III	Class III	Class III	Class III	None proposed.
BIO-21: The Project could conflict with the CVMSHCP.	Class III	Class III	Class III	Class III	None proposed.

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.7 Cultural and Traditional Cultural Properties

Presented within this section are potential impacts to cultural resources, and Traditional Cultural Properties (TCP) associated with construction and O&M of the Project and alternatives. Refer to Section 3.7.1 for a description of the existing cultural resources environment, and Section 3.7.2 for the regulatory framework applicable to the Project. Please refer to Sections 3.1.5 and 4.1.5 for baseline data and discussions on potential impacts to Tribal cultural resources.

4.7.1 Issues Identified During Scoping

4.7.2 Environmental Consequences

Significance Criteria. To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the Project and alternatives. Appropriate criteria have been identified and utilized to make these significance conclusions. The following significance criteria for cultural resources were derived from CEQA Guidelines Appendix G.

Impacts are considered significant if the Project or alternatives would:

- **Criterion CUL1:** Cause a substantial adverse change in the significance of a cultural resource.
- **Criterion CUL2:** Cause a disturbance to human remains, including those interred outside of formal cemeteries.
- **Criterion CUL3:** Cause a substantial adverse change in the significance of a Traditional Cultural Property.

Direct Impacts under CEQA and NEPA. Direct impacts to cultural resources are those associated with project development, construction, and co-existence. Construction usually entails surface and subsurface disturbance of the ground, and direct impacts to archaeological resources may result from the immediate disturbance of the deposits, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation, or demolition of overlying structures. Construction can have direct impacts on historical built-environment resources when those buildings or structures must be removed to make way for new buildings or structures or when the vibrations of construction impair the stability of historical buildings or structures nearby. New buildings or structures can have direct impacts on historical built environment resources when the new buildings or structures are stylistically incompatible with their historical neighbors and the setting, or when the new buildings or structures produce a harmful effect to the materials or structural integrity of the historical built environment resources, such as emissions or vibrations.

Direct impacts to TCPs are associated with construction activities that cause disturbance to surface and subsurface deposits (e.g., vegetation removal, grading, or excavation). These activities can result in new or increased erosion, soil compaction, or flooding that change immediate and surrounding soils and landforms of TCPs.

Indirect Impacts under CEQA and NEPA. Generally speaking, indirect impacts to cultural resources are those that may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource components due to improved accessibility. Similarly, historical built environment resources can suffer indirect impacts when project construction creates potentially damaging noise and vibration, visual intrusions into the historical setting of resources, improved access-ibility and vandalism, or greater weather exposure. It should also be noted that NEPA requires the consid-eration of effects to both National Register of Historic Places (NRHP)-eligible cultural resources (identified through the Section 106 process), as well as effects to resources that may not be eligible. This includes consideration of cultural resources identified through the tribal consultation process.

Indirect impacts to TCPs may result from improved vehicular or pedestrian access that allows more visitors to access TCPs, a subsequent rise in vandalism and the removal of tribally sensitive materials. Indirect impacts can also result from new structures that alter or diminish the physical, visual, or audible aspects of existing TCPs.

Adverse Effects under Section 106. Rather than creating separate categories of direct and indirect impacts, the Section 106 regulations are focused on effects more broadly to historic properties. The regulatory definition of "effect," pursuant to 36 CFR § 800.16(i), is that the term "means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the NRHP." The National Historic Preservation Act (NHPA) is specifically concerned about adverse effects to those properties. The regulations identify adverse effects as occurring when an undertaking is found to "alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association (36 C.F.R. § 800.5(a)(1))." "Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative (36 C.F.R. § 800.5(a)(1))."

Impact Assessment Methodology. The impact analysis is based on an assessment of baseline conditions relevant to cultural and tribal cultural resources, presented in Section 3.7.1 (Environmental Baseline), and an assessment of Project-related and alternative-related effects on baseline conditions during Project construction, long-term operation, and long-term maintenance. The potential for impacts to cultural resources depends on whether such resources are present and whether they would be encountered during project activities. Cultural resources include materials (e.g., artifacts, structures, or land modifications) that reflect the history of human development as well as places that are valued by Native Americans or local national/ethnic groups. Information gathered from the cultural resources literature, records searches, and field surveys was also used to assess the potential for encountering previously unrecorded cultural resources in the Project Area of Potential Effect (APE). As discussed previously in Section 3.7, the term APE in this EIR/EIS defines the same area as the Permit Area established by USACE in accordance with the agency's procedures. For this project, the Permit Area and the APE define identical geographic areas and the term APE is used as an inclusive term for both.

The impacts analysis for TCPs is based on an assessment of information gathered during government-to-government consultation between the USACE and two federally recognized tribes that responded to consultation letters, the Agua Caliente Band of Cahuilla Indians, and the Cahuilla Band of Indians. A summary of tribal consultations is presented in Section 3.7.1 (Baseline Data Collection Methodology). Information gathered during tribal consultation was used to assess the potential for encountering previously unrecorded TCPs in the Project APE.

Area of Potential Effects. Section 106 of the NHPA, and its implementing regulations at 36 CFR 800, define the APE as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if such properties exist. The APE is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR 800.16(d)). For purposes of complying with Section 106, the APE for the proposed Project consists of the following:

- For archaeological resources (both historic and prehistoric), the APE for direct effects is defined as all portions of the Project area. This includes the maximum depth that would be reached by all Project activities as described in detail in Chapter 2 (Project Description).
- The indirect effects APE identifies historic properties whose settings could be adversely affected by industrial development. Visual, auditory, and atmospheric effects from the proposed project are

considered in this analysis. The indirect effects APE is defined as encompassing a radius of one-quarter mile surrounding the proposed project.

- The APE for ethnographic resources is often identified in consultation with Native Americans and other ethnic groups. These resources may include properties to which tribes attach religious or cultural significance. Considered in this analysis are direct effects and indirect effects, including: visual, auditory, and atmospheric effects to cultural resources.

Cultural Resources Inventory. The records search conducted for the Project (see Section 3.7.1.1, Baseline Data Collection Methodology) revealed that no cultural resources have been recorded within Reaches 1-4. However, a total of 21 cultural resources have been documented within a one-mile radius, as listed in Table 4.7-1. Although no resources were identified within the Project area during the record searches, this does not preclude encountering additional, unknown subsurface resources during construction.

Two numbering systems for cultural resources are used in California: the trinomial system featuring the State abbreviation followed by a three-letter abbreviation of the county and a sequential number (e.g., CA-RIV-785) and the P-number system, composed of a "P" followed by a numerical county indicator and then a sequential number (e.g., P-33-000785). Most archaeological and some built environment resources have identifiers assigned in both numbering systems.

Table 4.7-1. Previously Recorded Cultural Resources within One-Mile of Project Area

Primary	Trinomial	Description
P-33-000785	CA-RIV-785	Prehistoric habitation site with cremation burial; Phase II testing and excavations at the site
P-33-003222	CA-RIV-3222	Fire-affected clay and sands; no artifacts present
P-33-003439	CA-RIV-3439	Historical Thousand Palms Dry Camp and Siding; overpass constructed and site is no longer extant
P-33-004215	CA-RIV-4215	Prehistoric ceramic scatter
P-33-004729	CA-RIV-4729	Prehistoric habitation site; Phase II testing
P-33-005619	—	Historical Bell Ranch / San Cayetano Ranch
P-33-005621	—	Historical Willis Palms Oasis
P-33-005622	—	Historical Desert Moon Ranch
P-33-005623	—	Stables and Garage of the Desert Moon Ranch
P-33-005788	CA-RIV-5520H	Historical refuse scatter, predominately cans
P-33-007846	—	Mano fragment
P-33-009498	CA-RIV-6381H	Union Pacific Railroad
P-33-010818	—	US Army Corps of Engineers survey marker designated "Yano"
P-33-013395	CA-RIV-7447	Historical refuse scatter
P-33-013561	—	Adobe ruins with some historical refuse
P-33-015429	—	Prehistoric ceramic and lithic scatter
P-33-015430	—	Prehistoric ceramic scatter
P-33-015431	—	Isolated mano
P-33-015432	—	Isolated glass insulator
P-33-018164	—	Isolated binocular fragment
P-33-022102	—	Three isolated cans

Source: George and Smallwood, 2015.

One historic-period cultural resource, CA-RIV-11851 (P-33-024101) was identified within Reach 1 of the Project APE by the USACE. A description of the field conditions and any cultural materials located within the survey area follows, organized by reach alignment.

Survey Results

Reach 1

The majority of Reach 1 was surveyed in 2010 by USACE archaeologists; however, the proposed energy dissipater area was not surveyed. The proposed facility is approximately 7.3 acres in size and is located along the eastern end of the Reach 1 levee (Figure 2-2, Reach 3 Alignment). The area surveyed in 2010 had excellent ground visibility. One cultural resource, CA-RIV-11851, was recorded in 2010 and resurveyed in 2013 by Applied Earthworks to evaluate its eligibility for the National and California Registers of Historic Places. Applied Earthworks recommended the site as not eligible for the National and California Registers.

CA-RIV-11851 (P-33-024101)

This historic period resource is a compound composed of the remains of five separate adobe structures, one discrete refuse deposit, and one concrete slab foundation. Additionally, a dirt driveway enters the parcel and a circular driveway curves between the ruins of the adobe structures. A single prehistoric buffware pottery sherd was identified, but likely was moved into the site through erosion. Four of the adobe structures remains consist of partially buried rectangular stone-and-mortar footings constructed using local field stones and a mortar of cement mixed with local sand and gravel. Around the perimeter of the footings is adobe wall melt made from locally obtained Lake Cahuilla lakebed clay. Remnants of wood roof framing is scattered throughout the site. The fifth adobe structure appears to be the remains of a separate, smaller structure, such as a shed. It is a partially buried stone-and-mortar patio and south wall footing with adobe wall melt around its perimeter.

No definitive explanation of the use and function of the various structures at CA-RIV-11851 have been identified through the analysis of the archaeological remains or through historical background research. However, based on what is known of the history of the region, the general appearance of the structures, their layout and methods of construction, and time period of artifacts found onsite, the compound may have been developed in the late 1940s as some form of desert retreat or guest ranch.

CA-RIV-11851 has been recommended as not eligible for the National or California Registers of Historic Places because it could not be associated with important events or persons in history, and the adobe ruins do not exemplify any outstanding architectural characteristics. In addition, as an archaeological resource, the ruins have not yielded any information important to the study of local, State, or national history, and it is unlikely that additional study through archaeological excavations or historical research will yield important information. While the resource has retained integrity of location and setting, it does not have integrity of design, materials, workmanship, feeling, and association. In addition, the State Historic Preservation Office (SHPO) sent a letter of concurrence regarding the ineligibility of this resource to the USACE on August 25, 2021 (see Appendix E).

Reach 2

The entirety of the Reach 2 alignment was surveyed in 2010. The area had excellent ground visibility. The ground surface appeared to be actively disturbed by seasonal sheet flooding episodes. No cultural resources were identified during the pedestrian survey of Reach 2.

Reach 3

The entirety of the Reach 3 alignment was surveyed in 2010. The area had excellent ground visibility. There were mud cracks throughout the ground surface of the northwestern half of the alignment and low

sand dunes present in the southern half. No cultural resources were identified during the pedestrian survey of Reach 3.

Reach 4

The entirety of the Reach 4 alignment was surveyed in 2012. Ground surface visibility was excellent, with coppice dunes and small silt pans. Some areas along the Reach 4 alignment (western and central portions) were previously and/or currently farmed for jojoba. Much of the Reach 4 alignment (especially the eastern half) is highly disturbed by grading and introduced fill in some areas, as well as farming activities. A dispersed scatter of modern refuse and debris was observed throughout the Reach 4 alignment. Along the Reach 4 alignment, areas are divided roughly every 750 feet by linear rows of tamarisk trees oriented north-south that were likely planted to form wind/sand breaks. While the Chuckwalla Ranch was noted on both the 1941 Edom, CA, and 1958 Thousand Palms, CA historical USGS maps encompassing the eastern terminus of the Reach 4 alignment, no historical ranch remnants were observed within the Project area during the survey. The area is graded flat and has been highly modified in recent decades by activities associated with the construction of Washington Street. No potentially significant cultural resources were identified during the pedestrian survey of Reach 4 in 2012.

On June 9, 2021, a pedestrian survey of the area south of Reach 4 was conducted to verify site conditions. This area will be subject to disturbance to support construction of the project and includes a concrete batch plant/marshalling yard and an area that would be used for soil deposition. The two areas were surveyed using intuitive, opportunistic transect intervals. No prehistoric or historic aged resources were identified within the concrete batch plant/marshalling yard area, or the area designated for soil deposition. After the conclusion of the 2021 supplemental survey, the entire APE has been surveyed for cultural resources. The SHPO sent a letter to the USACE on August 25, 2021, concurring with USACE's finding of no historic properties affect by this Project (see Appendix E).

Traditional Cultural Properties. Tribal consultation conducted for the Project (see Section 3.7.1, Baseline Data Collection Methodology) revealed that there are no known TCPs within Reaches 1-4. Consulting tribes identified Reaches 1 through 3 as sensitive areas that may include as-of-yet unidentified TCPs located beneath the ground surface.

4.7.2.1 Proposed Project (Alternative 1)

Direct and Indirect Effects Analysis

Cause a substantial adverse change in the significance of a cultural resource (Criterion CUL1).

Impact CUL-1: The Project could cause a substantial adverse change in the significance of a cultural resource.

Construction

Direct Effects. Construction of the proposed Project would require clearing, storing, grading, trenching, and excavation to install the levees and channel facilities described in Section 2.2.2 (Construction). As such, Project construction could result in the direct impact to unanticipated cultural resources including damage and/or displacement of resources, resulting in the loss of information about history and prehistory. Buried or otherwise obscured cultural resources may be present within portions of the Project APE associated with ground disturbance.

One recorded cultural resource (CA-RIV-11851) is located within the Project APE but is recommended ineligible for listing on the California or National Registers. While no known significant cultural resources are located within the Project APE, twenty-one cultural resources are documented within one-mile of the Project APE and the area is sensitive for prehistoric and historical cultural resources. Therefore, the only potential for direct impacts to cultural resources during the construction phase of the proposed Project is from unanticipated or inadvertent cultural resource discoveries. Due to various surface conditions or changes over time, not all cultural resources are visible on the surface. Any project with ground disturbing components has the potential to directly impact unanticipated cultural resources. If such resources are encountered, impacts would be reduced through the implementation of ECs C-1 (Unanticipated Discovery), C-2 (Cultural Resources Monitoring), and C-3 (Cultural Resources Worker Environmental Awareness Program).

Indirect Effects. Construction of the proposed Project has potential to cause indirect adverse effects associated with increased erosion, exposure to inclement weather, or visual intrusions into the historic setting of as-yet unidentified cultural resources. ECs C-1, C-2, and C-3 would reduce the impacts on as-yet unidentified cultural resources resulting from Project construction.

Operation and Maintenance

Direct Effects. O&M of the proposed Project as described in Section 2.2.3 (Operation and Maintenance) would require occasional clearing, grading, trenching, and excavation that could directly affect cultural resources sites by damaging and displacing artifacts and features, resulting in loss of information about history and prehistory, thereby degrading the preservation value of these resources. However, O&M activities would have a low potential to directly affect (i.e., damage or destroy) any buried cultural resources that might be present because it is less than likely that previously undisturbed soils would be disturbed during O&M activities. Therefore, the potential for adverse direct effects on cultural resources is low. Furthermore, ECs C-1, C-2, and C-3 would minimize the potential for direct impacts from O&M to as-yet-unidentified cultural resources. Therefore, based on the information available, the potential for adverse direct effects on cultural resources is low.

Indirect Effects. O&M of the proposed Project has potential to cause indirect adverse effects associated with increased erosion, exposure to inclement weather, or visual intrusions into the historic setting of as-yet unidentified cultural resources. ECs C-1, C-2, and C-3 would reduce the adverse effects from proposed Project O&M to cultural resources.

ECs and Mitigation Measures Applicable to Impact CUL-1

EC C-1 (Unanticipated Discovery)

EC C-2 (Cultural Resources Monitoring)

EC C-3 (Cultural Resources Worker Environmental Awareness Program)

CEQA Significance Conclusion

Alternative 1 would not have any direct or indirect effects on any cultural resources sites that are on the National or California Registers or eligible for listing on those Registers because the one cultural resource located within the APE (CA-RIV-11851) is ineligible for listing. However, the geologic unit underlying the Project area consists of Holocene deposits. These deposits date to a period of geologic time during which humans are known to have lived on and used the landscape. The presence of Holocene deposits indicates moderate to high potential that these landforms contain unidentified buried cultural resources that could be adversely affected by proposed Project activities. O&M activities may also result in indirect effects to

yet unidentified cultural resources. Implementation of ECs C-1, C-2, and C-3, the potential impacts to unidentified buried cultural resources would be less than significant (Class III).

Impact CUL-2: The Project could disturb human remains, including those interred outside of formal cemeteries.

No human remains are known to be located within the Project APE. However, there is always the possibility that unmarked burials may be unearthed during construction. The geologic unit underlying the Project area consists of Holocene deposits, which date to a period of geologic time during which humans are known to have lived on and used the landscape. The presence of Holocene deposits indicates moderate to high potential that these landforms contain unidentified buried human remains that could be adversely affected by proposed Project activities.

ECs and Mitigation Measures Applicable to Impact CUL-2

EC C-1 (Unanticipated Discovery)

EC C-2 (Cultural Resources Monitoring)

EC C-3 (Cultural Resources Worker Environmental Awareness Program)

CEQA Significance Conclusion

No human remains are known to be located within the Project APE. However, there is always the possibility that unmarked burials may be unearthed during construction. Implementation of ECs C-1, C-2, and C-3 would reduce potential impacts to unidentified human remains to less than significant (Class III).

Impact CUL-3: The Project could cause a substantial adverse change in the significance of a Traditional Cultural Property.

No TCPs are known to be located within the Project APE. However, there is always the possibility that unidentified TCPs located beneath the ground surface may be unearthed during construction.

ECs and Mitigation Measures Applicable to Impact CUL-3

EC C-1 (Unanticipated Discovery)

MM CUL-1 Tribal Cultural Resources Monitoring. One or more tribal monitors who are authorized by a consulting Tribe under Section 106 shall be present to monitor for tribal cultural resources full-time during construction work. The tribal monitor(s) will participate in CVWD's Worker Environmental Awareness Program training prior to beginning monitoring work. The tribal monitor is vested with the authority to halt construction work if an inadvertent discovery of a TCP occurs and will report any concerns immediately to the on-site Project Manager or designated USACE tribal liaison.

CEQA Significance Conclusion

No TCPs are known to be located within the Project APE. However, there is always the possibility that unidentified TCPs may be unearthed during construction. Implementation of EC C-1 and Mitigation Measure CUL-1 would reduce potential impacts to unidentified TCPs to less than significant (Class II).

4.7.2.2 Removal of Reach 2 (Alternative 2)

Direct and Indirect Effects Analysis

Cause a substantial adverse change in the significance of a cultural resource (Criterion CUL1).

Impact CUL-1: The Project could cause a substantial adverse change in the significance of a cultural resource.

Alternative 2 would not have any direct or indirect effects on the one cultural resource (CA-RIV-11851, NRHP-ineligible) located within the APE. However, the geologic unit underlying the Project area consists of Holocene deposits indicating moderate to high potential that these landforms contain unidentified buried cultural resources that could be adversely affected by Alternative 2 construction activities. O&M of Alternative 2 would only be slightly reduced compared to the proposed Project (Alternative 1) with the removal of Reach 2 and would therefore have essentially the same potential to cause indirect adverse effects associated with increased erosion, exposure to inclement weather, or visual intrusions into the historic setting of as-yet unidentified cultural resources. Potential impacts would be minimized with implementation of ECs C-1 through C-3.

ECs and Mitigation Measures Applicable to Impact CUL-1

EC C-1 (Unanticipated Discovery)

EC C-2 (Cultural Resources Monitoring)

EC C-3 (Cultural Resources Worker Environmental Awareness Program)

CEQA Significance Conclusion

Alternative 2 has the potential to cause substantial adverse changes in the significance of unidentified buried cultural resources, as well as result in indirect effects on yet unidentified cultural resources. Implementation of ECs C-1, C-2, and C-3 would reduce impacts to less than significant (Class III).

Impact CUL-2: The Project could disturb human remains, including those interred outside of formal cemeteries.

Alternative 2 would not cause disturbance to any known human remains located within the APE. However, the geologic unit underlying the Project area consist primarily of Holocene deposits, which indicates moderate to high potential that these landforms contain unidentified buried human remains that could be adversely affected by Alternative 2 activities. Potential impacts would be minimized with implementation of ECs C-1 through C-3.

ECs and Mitigation Measures Applicable to Impact CUL-2

EC C-1 (Unanticipated Discovery)

EC C-2 (Cultural Resources Monitoring)

EC C-3 (Cultural Resources Worker Environmental Awareness Program)

CEQA Significance Conclusion

No formal cemeteries or human remains are known to be located within the Project APE. However, the Alternative 2 has the potential to disturb unidentified buried human remains. Implementation of ECs C-1, C-2, and C-3 would reduce potential impacts to unidentified human remains to less than significant (Class III).

Impact CUL-3: The Project could cause a substantial adverse change in the significance of a Traditional Cultural Property.

Alternative 2 would not cause disturbance to any known TCPs within the APE. However, there is always the possibility that unidentified TCPs located beneath the ground surface may be unearthed during construction. Potential impacts would be minimized with implementation of EC C-1 and Mitigation Measure CUL-1.

ECs and Mitigation Measures Applicable to Impact CUL-3

EC C-1 (Unanticipated Discovery)

See Impact CUL-3 for the full text of the following mitigation measure:

MM CUL-1 (Tribal Cultural Resources Monitoring)

CEQA Significance Conclusion

No TCPs are known to be located within Alternative 2 APE. However, there is always the possibility that unidentified TCPs may be unearthed during construction. Implementation of EC C-1 and Mitigation Measure CUL-1 would reduce potential impacts to unidentified TCPs to less than significant (Class II).

4.7.2.3 Modified Reach 3 (Alternative 3)

Direct and Indirect Effects Analysis

Cause a substantial adverse change in the significance of a cultural resource (Criterion CUL1).

Impact CUL-1: The Project could cause a substantial adverse change in the significance of a cultural resource.

Alternative 3 would not have any direct or indirect effects on the one cultural resource (CA-RI V-11851, NRHP-ineligible) located within the APE. However, the geologic unit underlying the Project area consist primarily of Holocene deposits indicating moderate to high potential that these landforms contain unidentified buried cultural resources that could be adversely affected by Alternative 3 construction activities. O&M of Alternative 3 would be only slightly reduced compared to the proposed Project (Alternative 1) with the realignment of Reach 3 and would therefore have essentially the same potential to cause indirect adverse effects associated with increased erosion, exposure to inclement weather, or visual intrusions into the historic setting of as-yet unidentified cultural resources. Potential impacts would be minimized with implementation of ECs C-1 through C-3.

ECs and Mitigation Measures Applicable to Impact CUL-1

EC C-1 (Unanticipated Discovery)

EC C-2 (Cultural Resources Monitoring)

EC C-3 (Cultural Resources Worker Environmental Awareness Program)

CEQA Significance Conclusion

Alternative 3 has the potential to cause substantial adverse changes in the significance of unidentified buried cultural resources, as well as result in indirect effects on yet unidentified cultural resources. Implementation of ECs C-1, C-2, and C-3 would reduce impacts to less than significant (Class III).

Impact CUL-2: The Project could disturb human remains, including those interred outside of formal cemeteries.

Alternative 3 would not cause disturbance to any known human remains located within the APE. However, the geologic unit underlying the Project area consist primarily of Holocene deposits, which indicates moderate to high potential that these landforms contain unidentified buried human remains that could be adversely affected by Alternative 3 activities. Potential impacts would be minimized with implementation of ECs C-1 through C-3.

ECs and Mitigation Measures Applicable to Impact CUL-2

EC C-1 (Unanticipated Discovery)

EC C-2 (Cultural Resources Monitoring)

EC C-3 (Cultural Resources Worker Environmental Awareness Program)

CEQA Significance Conclusion

No formal cemeteries or human remains are known to be located within the Project APE. However, Alternative 3 has the potential to disturb unidentified buried human remains. Implementation of ECs C-1, C-2, and C-3 would reduce potential impacts to unidentified human remains to less than significant (Class III).

Impact CUL-3: The Project could cause a substantial adverse change in the significance of a Traditional Cultural Property.

Alternative 3 would not cause disturbance to any known TCPs within the APE. However, there is always the possibility that unidentified TCPs located beneath the ground surface may be unearthed during construction. Potential impacts would be minimized with implementation of EC C-1 and Mitigation Measure CUL-1.

ECs and Mitigation Measures Applicable to Impact CUL-3

EC C-1 (Unanticipated Discovery)

See Impact CUL-3 for the full text of the following mitigation measure:

MM CUL-1 (Tribal Cultural Resources Monitoring)

CEQA Significance Conclusion

No TCPs are known to be located within Alternative 3 APE. However, there is always the possibility that unidentified TCPs may be unearthed during construction. Implementation of EC C-1 and Mitigation Measure CUL-1 would reduce potential impacts to unidentified TCPs to less than significant (Class II).

4.7.2.4 No Action (Alternative 4)

Direct and Indirect Effects Analysis

Under the No Action alternative, the proposed Project, or its alternatives, would not be constructed and the surrounding area would remain as part of the existing FEMA flood hazard maps. In the event of catastrophic flooding, unknown buried resources could be inadvertently unearthed either during natural flooding processes or during ground-disturbing activities associated with construction or repair activities. While unknown, it is likely similar procedures and provisions as ECs C-1, C-2, C-3, may be necessary to address inadvertent discoveries and provide detail on how these activities would be implemented.

4.7.3 Impact Summary – Cultural Resources

Table 4.7-2 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to cultural and tribal cultural resources. Refer to Section 4.7.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures, and Table 2-4 for the full text of the environmental commitments.

Table 4.7-2. Summary of Impacts and Mitigation Measures – Cultural Resources

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
CUL-1: The Project could cause a substantial adverse change in the significance of a cultural resource.	Class III	Class III	Class III	EC C-1 (Unanticipated Discoveries) EC C-2 (Cultural Resources Monitoring) EC C-3 (Cultural Resources Worker Environmental Awareness Program)
CUL-2: The Project could disturb human remains, including those interred outside of formal cemeteries.	Class III	Class III	Class III	EC C-1 (Unanticipated Discoveries) EC C-2 (Cultural Resources Monitoring) EC C-3 (Cultural Resources Worker Environmental Awareness Program)
CUL-3: The Project could cause a substantial adverse change in the significance of a Traditional Cultural Property.	Class II	Class II	Class II	EC C-1 (Unanticipated Discoveries) MM CUL-1 (Tribal Cultural Resources Monitoring)

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.8 Land Use and Recreation

Presented within this section are potential land use (including agriculture; habitat conservation; and housing) and recreation impacts associated with construction and O&M of the Project and alternatives. Refer to Section 3.8.1 for a description of the existing land uses, including recreation, and Section 3.8.2 for the regulatory framework applicable to the Project.

4.8.1 Issues Identified During Scoping

Table 4.8-1 below provides a list of recreation and land use issues raised during the public scoping period for the EIR/EIS (see Appendix A, Public Scoping). Issues are listed by agency or members of the public providing comment. The table also includes a brief discussion of the applicability of each issue to the environmental analysis and where that issue is addressed in the EIR/EIS.

Table 4.8-1. Scoping Issues Relevant to Recreation and Land Use

Comment	Consideration in the EIR/EIS
Noble & Company, LLC	
Concern regarding possible impacts to transmission lines from Reach 3 and to future land development by Noble & Company in the vicinity, specifically Riverside County Specific Plan No 386.	Modified Reach 3 is discussed in detail in the Project Description, Section 2.3.2, and shown on Figure 2-9, Alternative 3a and 3b Alignments. Sections 3.8/4.8 (Land Use and Recreation) contain a discussion of the land uses which may be affected by the Project. The proposed Project and alternatives would neither enter Specific Plan No. 386 nor cross the SCE transmission line right-of-way.
Roy Nokes, Resident	
Requests proposed Project be built to the north along Thousand Palms foothills; states present design would damage the Desert Moon Ranch and multispecies habitat area.	Section 3.8/4.8 (Land Use and Recreation) contain a detailed discussion of the potential land use impacts.

4.8.2 Environmental Consequences

Significance Criteria. To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the Project and alternatives. Appropriate criteria have been identified and utilized to make these significance conclusions. The following significance criteria for land use and recreation were derived from Appendix G of CEQA and based on public comments. Impacts are considered significant if the Project or alternatives would:

- **Criterion L1:** Physically divide an established community.
- **Criterion L2:** Conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating adverse environmental effects.
- **Criterion L3:** Permanently alter the quality, character, or availability of an existing land use, including but not limited to recreational, educational, religious, and scientific uses.
- **Criterion L4:** Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use(s), and/or conflict with existing zoning for agricultural use, including Williamson Act contract(s).
- **Criterion L5:** Result in increased use of recreational resource(s) such that substantial physical deterioration of the resource(s) would occur or be accelerated.

Impact Assessment Methodology. The impact analysis is based on an assessment of baseline conditions relevant to the site land uses, presented in Section 3.8.1 (Land Use and Recreation – Environmental Baseline), and an assessment of Project-related and alternative-related effects on baseline conditions during Project construction, long-term operation, and long-term maintenance using appropriate technical analysis and the impact significance criteria.

4.8.2.1 Proposed Project (Alternative 1)

Direct and Indirect Effects Analysis

Physically divide an established community (Criterion L1).

Impact L-1: Construction of the Project could create a physical barrier between residences in the community of Thousand Palms.

Reach 1 of the proposed Project is comprised of a 12,667-foot-long (2.4 miles) levee. Road crossings would be constructed over the Reach 1 levee at Via Las Palmas and at Desert Moon Drive to maintain access between the communities north and south of Levee 1. These road crossings would preclude dividing these communities. The Xavier Preparatory High School and the Classic Club Golf Course are located south of Reach 3. North of Reach 3 is the Coachella Valley Preserve. The proposed levee/channel would provide a barrier to this conservation area, which currently has restricted access (these are fenced federal preserve lands) (Appendix C.5). Reaches 2 and 4 are located along the north and west side of the developed portion of the Coachella Valley. The built environment in the vicinity of Reaches 2 and 4 is located to the south and east of the corridor. Therefore, the proposed Project in the Reaches 2 and 4 corridors would not physically divide an established community.

CEQA Significance Conclusion

Implementation of Reaches 1-4 would not create physical barriers between residences in the community of Thousand Palms, as road crossings would be provided where development is located to the north of Reach 1 (Class III).

Conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating adverse environmental effects (Criterion L2).

Impact L-2: The Project could conflict with applicable land use policies.

Construction of flood control improvements would be designed to comply with federal, State, and local regulations and would be consistent with applicable land use plans. As described in the 2000 Final EIR/EIS, this proposed Project was developed to be consistent with the goals of the Coachella Valley Multiple Species Habitat Conservation Plan/Natural Community Conservation Plan (CVMSHCP/NCCP) and other plans and policies. Therefore, the project is also consistent with the HCP developed to protect habitat and populations of the Coachella Valley fringe-toed lizard (CVFTL). The CVFTL HCP is a comprehensive plan for the conservation of the CVFTL and it established the conditions under which local governments can exercise traditional land use controls in compliance with the Endangered Species Act (USACE, 2000). The HCP recognizes the need for flood control to protect existing and future development in the study area. Particularly along Reach 3, the Project includes flood control features that border the Coachella Valley Preserve direct stormwater runoff toward the preserve without degrading its overall quality. Therefore, the proposed Project is considered consistent with the CVMSHCP/NCCP and no amendments to this plan would be required. Further, CVCC determined the proposed Project to be consistent with the CVMSHCP and confirmed that it is a Covered Project under Section 7.3.1 (Appendix C.5).

The policies associated with the County's general plan designations specify the following: conservation of open space and maintenance of the environmental character of open space and rural areas; maximizing public safety by encouraging flood control infrastructure; requiring cooperation with appropriate agencies in the development process; and requirements that new public facilities protect sensitive uses, such as schools and residences, from the impacts of noise, light, fumes, odors, vehicular traffic, parking, and operational hazards. Potential conflicts with these policies would be mitigated to a less-than-significant level with implementation of environmental commitments and mitigation measures presented in this EIR/EIS. Refer to Sections 4.3 (Air Quality and Greenhouse Gases), 4.9 (Noise), 4.10 (Public Safety), and 4.12 (Transportation and Traffic) for the full-text of the mitigation measures listed below.

Upon issuance of a Public Use Permit by the County, the proposed Project would comply with the County's Zoning Ordinance.

ECs and Mitigation Measures Applicable to Impact L-2

EC L-2 (Coordinate with California State Lands Commission)

EC AQ-1 (Concrete Batch Plant)

EC GHG-1 (Construction Waste Recycling)

EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors)

EC N-2 (Use Proper Mufflers)

EC P-1 (Design Channels with Fencing)

See Impact AQ-2 in Section 4.3 (Air Quality) for the full text of the following mitigation measure:

MM AQ-1 (Off-Road Equipment Engines)

See Section 4.9 (Noise) for the full text of the following mitigation measures:

MM N-1 (Address Construction Noise Complaints)

MM N-2 (Coordinate Construction with Xavier Preparatory High School)

See Section 4.11 (Public Safety) for the full text of the following mitigation measures:

MM PS-1 (Standard Measures to Reduce Fire Risk)

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

With implementation of the ECs and mitigation measures listed above, potential conflicts with applicable plans and policies would be less than significant (Class II).

Permanently alter the quality, character, or availability of an existing land use, including but not limited to recreational, educational, religious, and scientific uses (Criterion L3).

Impact L-3: Construction of the Project could permanently disrupt or displace existing residential, business, educational, and recreational land uses.

During the previous decade, segments of the Project area have experienced development of residential, recreational, commercial, and industrial land uses. Development in the area is expected to continue.

The proposed Project would result in a beneficial effect to the area and existing land uses because it would provide regional flood protection for existing and continuing development in the area. The implementation of a regional flood protection system would allow for the safe development of areas that are currently threatened by periodic flooding. Without implementation of the Proposed Action, flood protection would be required on a project-by-project basis. This piecemeal approach to flood protection would protect specific developments but would leave adjacent lands vulnerable to damage by flood; and is therefore not considered a viable option for regional flood control.

Although the proposed Project would provide a beneficial effect on existing land use in the area by preventing damage from periodic flooding, some specific existing land uses would be negatively impacted. The proposed Project would affect the following existing and planned land uses:

- Reach 1 would traverse seven developed residential properties (see Figure 2-6, Affected Properties – Reach 1 Alignment).
- The Reach 3 channel would traverse the northeast corner of the Xavier College Preparatory High School property, cross the northern and eastern portions of the Pegasus Therapeutic Riding facility, and terminate at the Classic Club Golf Course (see Figure 2-7, Affected Properties – Reach 3 Alignment).
- The Reach 4 channel would divert stormwater flows from the southeast end of the Classic Club Golf Course and continue south then east, adjacent to the south of the planned alignment of Avenue 38. The land immediately south of Reach 4, between the Reach 4 Channel and I-10, has been approved by the County to be developed as a residential/commercial area under the Mirasera and Valanté Specific Plans. The status regarding construction of these development projects is currently unknown. The Valanté development is dependent on construction of a regional flood control project, such as the proposed Project, and therefore has not been constructed. Construction of the Mirasera development, however, is not dependent on a regional flood control project as the Specific Plan and EIR were approved with mitigation measures and flood control requirements and could technically proceed; although, the developer has not proceeded. Implementation of the proposed Project would place approximately 726,000 cubic yards of excavated material south of Avenue 38 (on the Mirasera site and adjacent eastern property), which would increase the elevation by approximately two feet. The Valanté site would be utilized during construction as a marshalling yard with a temporary concrete batch plant to support construction activities.

Disturbance and/or Displacement of Residences and Businesses

The proposed Project would result in short-term disturbances to residents and businesses during construction. The primary disturbance would be temporary noise and traffic. As discussed in Section 4.9 (Noise), recommended Mitigation Measures N-1 (Address Construction Noise Complaints) and N-2 (Coordinate Construction with Xavier Preparatory High) would ensure coordination with affected residents and businesses related to temporary construction noise. As discussed in Section 4.13 (Transportation), recommended Mitigation Measure TR-3 (Notification to Property Owners and Tenants) would ensure coordination with affected residents and businesses related to temporary construction and maintenance traffic trips. The implementation of these measures would reduce these adverse temporary disturbances to residents and businesses.

The proposed Project would require the permanent removal of seven residential properties and 37 non-residential properties (the majority of which are currently vacant land) from within the Reach 1 impact area (see Figure 2-6). The Reach 3 impact area would traverse the northern and eastern portions of the property (Pegasus Therapeutic Riding facility), permanently effecting this business (see Figure 2-7). These are unavoidable impacts that would permanently displace existing residences, disrupt any plans

for use of these private vacant parcels, and potentially result in the relocation or alteration of existing businesses.

The limits of land acquisition depend on the percent of the parcel crossed by the final Project alignment and the temporary construction access needs. If the existing use of any parcel impacted by the Project cannot be maintained, the entire parcel may be acquired. CVWD would first seek to acquire these properties under fair market negotiations. However, should fair market negotiations fail, CVWD would implement eminent domain to acquire the lands needed to construct and operate the proposed Project. The CVWD has authority for using eminent domain for protecting life and property from flooding. The CVWD has established certain prescribed land acquisition procedures implemented by CVWD or by any person having an agreement with or acting on behalf of CVWD. Listed below are the steps CVWD would follow to acquire property:

1. Decision by CVWD to appraise property.
2. Decision or determination to acquire property by CVWD, or a decision by CVWD not to acquire the property.
3. Submittal to the owner of a written offer to acquire property, or notification to the owner of the decision not to acquire the property. Landowner may obtain their own appraisal at CVWD cost up to $5,000.
4. At the time CVWD makes an offer to acquire the property, it will provide the owner with a written statement of the basis for determination of just compensation. If the owner is not satisfied with CVWD's offer of just compensation, the owner will be given a reasonable opportunity to present relevant material, which CVWD will carefully consider.
5. If a voluntary agreement cannot be reached, CVWD, as soon as possible, will either institute formal eminent domain proceedings to acquire the property, or abandon its intention to acquire the property, giving the owner notification of its intention not to acquire.

Should agreements between CVWD and affected property owners (seven affected residential properties and 37 affected non-residential properties) be reached, the land use disturbance/disruption impacts would not be considered adverse. However, in the event eminent domain is used for acquiring a property, impacts would be considered adverse as land use disruptions are considered involuntary. No mitigation is feasible for reducing or avoiding such adverse impacts. The use of eminent domain is a formal proceeding.

Disturbance to Educational Land Uses

The proposed Project was previously designed and assessed by the Corps Planning Division – during that planning process, the Corps Planning Division coordinated with Xavier College Preparatory High School regarding conflicts between Reach 3 and the high school property; through that coordination, the design of Reach 3 was realigned and the levee changed to a channel in this area to minimizes disruptions to the high school property while still achieving the goals of flood protection. As noted above, the current design of Reach 3 would traverse the northeast corner of the high school property. The existing athletic fields and school buildings would not be directly impacted by the proposed Project. Indirect impacts, such as air quality (Section 4.3) and noise (Section 4.9) during construction, are assessed in the respective issue area analyzes within Chapter 4 of this EIR/EIS.

Disturbance to Recreational Resources

The proposed Project includes modifications to the previously analyzed Project that seek to minimize negative impacts to existing land uses. These modifications include: the realignment and channelization

of a portion of Reach 3 in order to minimize impacts to the Classic Golf Course, and the realignment and channelization of Reach 4 in order to minimize impacts to the Preserve. The proposed Project would permanently impact the Classic Club Golf Course to tie the Reach 3/4 channels into the golf course's existing stormwater conveyance system; and temporarily impact the trails within the detention basin/ greenbelt of the Del Webb/Sun City development, which would be deepened to accommodate flows diverted by the proposed Project. Additionally, Reach 1 and 3 would bisect a regional trail (see Figure 3.8-4, Recreational Resources), which may limit the through-access of the trail or require rerouting of the trail. The Class 1 bike path along Washington Street would only be temporarily impacted during Project construction activities. Implementation of ECs L-1 and L-2 and Mitigation Measure L-1 would reduce impacts to recreational and educational uses; however, construction of the proposed Project would continue to result in permanent displacement of recreational land uses.

ECs and Mitigation Measures Applicable to Impact L-3

EC L-1 (Incorporate Recreational Uses and Educational Signs to Protect Sensitive Habitats)

EC L-2 (Coordinate with California State Lands Commission)

See Section 4.9 (Noise) for the full text of the following mitigation measures:
MM N-1 (Address Construction Noise Complaints)

MM N-2 (Coordinate Construction with Xavier Preparatory High)

See Section 4.13 (Transportation) for the full text of the following mitigation measure:

MM TR-3 (Notification to Property Owners and Tenants)

MM L-1 **Identify and Provide Noticing of Alternate Recreation Areas.** The CVWD shall coordinate with applicable local or regional agencies (e.g., Riverside County) for all recreational areas (e.g., trails, bike paths, golf course) affected by Project construction for the following purposes:

- Identify recreational areas that would be closed or limited in use during Project construction activities;
- To the extent feasible, for recreation areas that would be unavailable to the public due to Project construction, schedule construction activities to avoid heavy recreational use periods (including major holidays);
- Post a public notice that identifies construction information (e.g., schedule, contact person) at or near the recreational areas affected (e.g., at the access points for trails);
- Restore affected recreational areas to pre-construction conditions or to a condition agreed upon with the landowner; and
- Provide access, which may include rerouting around the levee and channels, for trails bisected by the Project.

CEQA Significance Conclusion

With implementation of ECs L-1 and L-2 and Mitigation Measures L-1, N-1, N-2 and TR-3, temporary impacts to land uses would be reduced; however, the proposed Project would result in the permanent displacement of residences and recreational land uses. While impacted property owners, tenants, and businesses would be given the financial opportunity to relocate locally, this impact is considered significant and unavoidable (Class I).

Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use(s), and/or conflict with existing zoning for agricultural use, including Williamson Act contract(s) (Criterion L4).

Impact L-4: The Project would traverse Farmland but not result in conflicts with the County's Residential-Agriculture zoning designation.

Reach 1, 2, 3, and 4 would traverse the County's Residential-Agriculture zoning designation. Although agricultural activities may occur within the private residences, the primary land use is residential, and agricultural uses are secondary.

In addition, based on the Department of Conservation's Farmland Mapping and Monitoring Program map for this area, Reach 1 and 2 are entirely within the Other Lands designation, which generally consists of low density rural development and/or areas not suitable for agricultural production. Reach 3 and 4 fall within the Other Lands Designation and Urban and Built-Up Land as well as parcels designated as Farmland of Local Importance. The parcels designated as Farmland of Local Importance are mainly associated with the Residential-Agriculture zoning designation described above. As described in Section 3.8.1.2 (Agricultural Land Uses), the definition of Farmland of Local Importance includes land identified by city or county ordinance as agricultural zones or contracts. There are no Williamson Act contracts or County-designated agricultural preserves in the vicinity of the Project site. Therefore, the proposed Project's potential conflict with this agricultural designation would not result in the conversion of land that is recognized as viable agricultural lands.

CEQA Significance Conclusion

The proposed Project would traverse parcels designated as Farmland of Local Importance, but the primary land use is residential. Therefore, the proposed Project would not conflict with the County's Residential-Agriculture-zoned parcels. Impacts would be less than significant (Class III).

Result in increased use of recreational resource(s) such that substantial physical deterioration of the resource(s) would occur or be accelerated (Criterion L5).

Construction and O&M of the proposed Project would not result in an increase in population that would lead to the increased use of recreational resources (see Section 4.12, Socioeconomics and Environmental Justice). Thousand Palms is the largest land area available for future development in the Coachella Valley. Based on information provided by USACE, it is estimated that the area will be fully developed by the year 2029. As such, development pressure will remain regardless of whether a regional flood control system is constructed. As discussed under Impact L-3, the proposed Project would permanently disrupt established recreation areas (Xavier College Preparatory High School, Pegasus Therapeutic Riding facility, and regional and local trails); however, there are no components of construction or operation that would result in the physical deterioration of resources due to the increased use of recreational areas.

CEQA Significance Conclusion

There would be no impacts regarding the physical deterioration of recreational resources under this criterion.

4.8.2.2 Removal of Reach 2 (Alternative 2)

Direct and Indirect Effects Analysis

Physically divide an established community (Criterion L1).

Impact L-1: Construction of the Project could create a physical barrier between residences in the community of Thousand Palms.

As discussed in Section 2.3.1 (Removal of Reach 2), this alternative would remove Reach 2 from the proposed Project. As discussed above, the built environment in the vicinity of Reach 4 is located to the south and east of the corridor, such that Reach 4 would not physically divide an established community. Reaches 1 and 3 would still be constructed under this alternative and would not create a physical barrier between residences in the community of Thousand Palms, same as the proposed Project.

CEQA Significance Conclusion

Construction of Reaches 1, 3, and 4 would not create a physical barrier between residences in the community of Thousand Palms, as road crossings would be provided where development is located to the north of Reach 1 (Class III).

Conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating adverse environmental effects (Criterion L2).

Impact L-2: The Project could conflict with applicable land use policies.

Removal of Reach 2 under Alternative 2 would not change the Project's consistency with applicable land use plans and policies, as described for the proposed Project. Potential conflicts would be mitigated with implementation of the following mitigation measures and ECs.

ECs and Mitigation Measures Applicable to Impact L-2

EC L-2 (Coordinate with California State Lands Commission)

EC AQ-1 (Concrete Batch Plant)

EC GHG-1 (Construction Waste Recycling)

EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors)

EC N-2 (Use Proper Mufflers)

EC P-1 (Design Channels with Fencing)

See Section 4.3 (Air Quality) for the full text of the following mitigation measure:

MM AQ-1 (Off-Road Equipment Engines)

See Section 4.9 (Noise) for the full text of the following mitigation measures:

MM N-1 (Address Construction Noise Complaints)

MM N-2 (Coordinate Construction with Xavier Preparatory High School)

See Section 4.11 (Public Safety) for the full text of the following mitigation measures:

MM PS-1 (Standard Measures to Reduce Fire Risk)

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

With implementation of the ECs and mitigation measures noted above, the potential conflicts with applicable plans and policies would be less-than-significant (Class II).

Permanently alter the quality, character, or availability of an existing land use, including but not limited to recreational, educational, religious, and scientific uses (Criterion L3).

Impact L-3: Construction of the Project could permanently disrupt or displace existing residential and recreational land uses.

As discussed for the proposed Project, the Project area has experienced development during the previous decade, which is expected to continue. In general, the Project would result in a beneficial impact on land use because it would provide regional flood protection for existing and future development in the Thousand Palms area. Removal of Reach 2 would not reduce or remove aspects of the proposed Project which would otherwise negatively affect residential or recreational land uses. Properties within Reaches 1, 3, and 4 would be adversely impacted, as described for the proposed Project, even with implementation of ECs L-1 and L-2 and Mitigation Measures L-1, N-1, N-2, and TR-3.

ECs and Mitigation Measures Applicable to Impact L-3

EC L-1 (Incorporate Recreational Uses and Educational Signs to Protect Sensitive Habitats)

EC L-2 (Coordinate with California State Lands Commission)

See Section 4.9 (Noise) for the full text of the following mitigation measures:

MM N-1 (Address Construction Noise Complaints)

MM N-2 (Coordinate Construction with Xavier Preparatory High)

See Section 4.13 (Transportation) for the full text of the following mitigation measure:

MM TR-3 (Notification to Property Owners and Tenants)

See Impact L-3 for the full text of the following mitigation measure:

MM L-1 (Identify and Provide Noticing of Alternate Recreation Areas)

CEQA Significance Conclusion

With implementation of ECs L-1 and L-2 and Mitigation Measures L-1, N-1, N-2 and TR-3, temporary impacts to land uses would be reduced; however, Alternative 2 would result in the permanent displacement of residences and recreational land uses. While impacted property owners, tenants, and businesses would be given the financial opportunity to relocate locally, this impact is considered significant and unavoidable (Class I).

Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use(s), and/or conflict with existing zoning for agricultural use, including Williamson Act contract(s) (Criterion L4).

Impact L-4: The Project would traverse Farmland but not result in conflicts with the County's Residential-Agriculture zoning designation.

Alternative 2 would traverse the same lands as the proposed Project, with the exception of Reach 2. Reach 2 is located entirely within the Other Lands designation, which generally consists of low density rural development and/or areas not suitable for agricultural production. As discussed above, the proposed Project would traverse Farmland of Local Importance, but the primary use is residential. No conflicts with the County's Residential-Agricultural zoning designation would occur.

CEQA Significance Conclusion

Alternative 2 would traverse Farmland of Local Importance, but the primary use is residential. Alternative 2 would not conflict with the County's Residential-Agriculture-zoned parcels. Impacts would be less than significant (Class III).

Result in increased use of recreational resource(s) such that substantial physical deterioration of the resource(s) would occur or be accelerated (Criterion L5).

Same as the proposed Project, construction and O&M of Alternative 2 would not result in an increase in population that would lead to an increase in use of recreational resources.

CEQA Significance Conclusion

There would be no impacts regarding the physical deterioration of recreational resources under this criterion.

4.8.2.3 Modified Reach 3 (Alternative 3)

Direct and Indirect Effects Analysis

Physically divide an established community (Criterion L1).

Impact L-1: Construction of the Project could create a physical barrier between residences in the community of Thousand Palms.

As discussed above for the proposed Project, construction of Reaches 1-4 would not create a physical barrier between residences in the community of Thousand Palms. Both Options A and B would alter the footprint of Reach 3 by shifting it westward away from the active wind corridor (Figure 2-9); this would not result in a physical barrier to residences. North of Reach 3 is the Coachella Valley Preserve, where the proposed levee/channel would provide a natural barrier to this conservation area.

CEQA Significance Conclusion

Reaches 1-4, with the modification to Reach 3 (Option A or B), would not create a physical barrier between residences in the community of Thousand Palms, as road crossings would be provided where development is located to the north of Reach 1 (Class III).

Conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating adverse environmental effects (Criterion L2).

Impact L-2: The Project could conflict with applicable land use policies.

Realignment of Reach 3 under Alternative 3 would not change the Project's consistency with applicable land use plans and policies, as described for the proposed Project. Potential conflicts would be mitigated with implementation of the following ECs and mitigation measures.

ECs and Mitigation Measures Applicable to Impact L-2

EC L-2 (Coordinate with California State Lands Commission)

EC AQ-1 (Concrete Batch Plant)

EC GHG-1 (Construction Waste Recycling)

EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors)

EC N-2 (Use Proper Mufflers)

EC P-1 (Design Channels with Fencing)

See Section 4.3 (Air Quality) for the full text of the following mitigation measure:

MM AQ-1 (Off-Road Equipment Engines)

See Section 4.9 (Noise) for the full text of the following mitigation measures:

MM N-1 (Address Construction Noise Complaints)

MM N-2 (Coordinate Construction with Xavier Preparatory High School)

See Section 4.11 (Public Safety) for the full text of the following mitigation measures:

MM PS-1 (Standard Measures to Reduce Fire Risk)

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

With implementation of the ECs and mitigation measures described above, the potential conflicts with applicable plans and policies would be less-than-significant (Class II).

Permanently alter the quality, character, or availability of an existing land use, including but not limited to recreational, educational, religious, and scientific uses (Criterion L3).

Impact L-3: Construction of the Project could permanently disrupt or displace existing residential and recreational land uses.

As discussed above for the proposed Project, the Project area has experienced development during the previous decade, which is expected to continue. In general, the Project would result in a beneficial impact on land use because it provides regional flood protection for existing and future development in the Thousand Palms area. The realignment of the north end of Reach 3 would not reduce or remove aspects of the proposed Project which would otherwise negatively affect residential or recreational land uses. Properties within Reaches 1, 3, and 4 would be adversely impacted, as described for the proposed Project, even with implementation of ECs L-1 and L-2 and Mitigation Measures L-1, N-1, N-2, and TR-3.

ECs and Mitigation Measures Applicable to Impact L-3

EC L-1 (Incorporate Recreational Uses and Educational Signs to Protect Sensitive Habitats)

EC L-2 (Coordinate with California State Lands Commission)

See Section 4.9 (Noise) for the full text of the following mitigation measures:

MM N-1 (Address Construction Noise Complaints)

MM N-2 (Coordinate Construction with Xavier Preparatory High)

See Section 4.13 (Transportation) for the full text of the following mitigation measure:

MM TR-3 (Notification to Property Owners and Tenants)

See Impact L-3 for the full text of the following mitigation measure:

MM L-1 (Identify and Provide Noticing of Alternate Recreation Areas)

CEQA Significance Conclusion

With implementation of ECs L-1 and L-2 and Mitigation Measures L-1, N-1, N-2 and TR-3, temporary impacts to land uses would be reduced; however, Alternative 3 would result in the permanent displacement of residences and recreational land uses. While impacted property owners, tenants, and businesses would be given the financial opportunity to relocate locally, this impact is considered significant and unavoidable (Class I).

Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use(s), and/or conflict with existing zoning for agricultural use, including Williamson Act contract(s) (Criterion L4).

Impact L-4: The Project would traverse Farmland but would not result in conflicts with the County's Residential-Agriculture zoning designation.

The alteration of the Reach 3 footprint from the proposed Project would not introduce new potential conflicts or reduce conflicts related to agricultural uses. As discussed above, the proposed Project would traverse Farmland of Local Importance, but the primary use is residential. No conflicts with the County's Residential-Agricultural zoning designation would occur.

CEQA Significance Conclusion

Alternative 3 would traverse Farmland of Local Importance, but the primary use is residential. Alternative 3 would not conflict with the County's Residential-Agriculture-zoned parcels. Impacts would be less than significant (Class III).

Result in increased use of recreational resource(s) such that substantial physical deterioration of the resource(s) would occur or be accelerated (Criterion L5).

Same as the proposed Project, construction and O&M of Alternative 3 would not result in an increase in population that would lead to an increase in use of recreational resources.

CEQA Significance Conclusion

There would be no impacts regarding the physical deterioration of recreational resources under this criterion.

4.8.2.4 No Action (Alternative 4)

Direct and Indirect Effects Analysis

Under the No Action Alternative, the flood control project would not be constructed. Therefore, existing land uses and recreational resources would not be subject to the effects of the Project. If the proposed Project is not built it is possible that another project may be proposed in the future to address the area's flooding problem. It is unknown if future project(s) would share design features with the proposed Project or where such a project would be located. Under a scenario where catastrophic flooding occurs, adverse impacts could occur as a result of flood flows, cleanup, and/or repair activities which could affect the land uses or recreational resources in or near the Project area. However, the scale, duration, and location of such impacts is unknown and speculative.

4.8.3 Impact Summary – Land Use and Recreation

Table 4.8-2 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to land use and recreation. Refer to Section 4.8.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures.

Table 4.8-2. Summary of Impacts and Mitigation Measures – Land Use and Recreation

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
L-1: Construction of the Project could create a physical barrier between residences in the community of Thousand Palms.	Class III	Class III	Class III	None required.
L-2: The Project could conflict with applicable land use policies.	Class II	Class II	Class II	EC L-2 (Coordinate with California State Lands Commission) EC AQ-1 (Concrete Batch Plant) EC GHG-1 (Construction Waste Recycling) EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors) EC N-2 (Use Proper Mufflers) EC P-1 (Design Channels with Fencing) MM AQ-1 (Off-Road Equipment Engines) MM N-1 (Address Construction Noise Complaints) MM N-2 (Coordinate Construction with Xavier Preparatory High School) MM PS-1 (Standard Measures to Reduce Fire Risk) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste) MM PS-5 (Worker Environmental Awareness Program)

Table 4.8-2. Summary of Impacts and Mitigation Measures – Land Use and Recreation

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
L-3: Construction of the Project could permanently disrupt or displace existing residential and recreational land uses.	Class I	Class I	Class I	EC L-1 (Incorporate Recreational Uses and Educational Signs to Protect Sensitive Habitats) EC L-2 (Coordinate with California State Lands Commission) MM L-1 (Identify and Provide Noticing of Alternate Recreation Areas) MM N-1 (Address Construction Noise Complaints) MM N-2 (Coordinate Construction with Xavier Preparatory High School) MM TR-3 (Notification to Property Owners and Tenants)
L-4: The Project would traverse Farmland but not result in conflicts with the County's Residential-Agriculture zoning designation.	Class III	Class III	Class III	None required.

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.9 Noise

Presented within this section are potential noise impacts associated with construction and O&M of the Project and alternatives. Refer to Section 3.9.1 for a description of the existing noise environment, and Section 3.9.2 for the regulatory framework applicable to the Project.

4.9.1 Issues Identified During Scoping

There were no noise issues identified during the public scoping period. See Appendix A (Public Scoping) for a summary of issues relevant to the entire Project that were raised during the scoping process.

4.9.2 Environmental Consequences

Significance Criteria. To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the Project and alternatives. Appropriate criteria have been identified and utilized to make these significance conclusions. The following significance criteria for noise were derived from reviewing CEQA Appendix G, the regulatory framework presented in Section 3.9.2, and the predicted noise impacts associated with the Project. Impacts are considered significant if the Project or alternatives would:

- **Criterion N1:** Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- **Criterion N2:** Generation of excessive groundborne vibration or groundborne noise levels.
- **Criterion N3:** For a project located within the vicinity of a private airstrip or 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.

Impact Assessment Methodology. The impact analysis is based on an assessment of Project-related and alternative-related effects on baseline conditions during Project construction, long-term operation, and long-term maintenance using appropriate technical analysis and the impact significance criteria.

4.9.2.1 Proposed Project (Alternative 1)

Direct and Indirect Effects Analysis

Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (Criterion N1).

Impact N-1: Construction and O&M activities may be inconsistent with the Riverside County Noise Ordinance or General Plan.

Construction. As discussed in Section 3.9.2, per Riverside County Code Ordinance No. 847 Section 2, sound emanating from the following sources is exempt from the performance standards identified within the County's noise ordinance:

- Facilities owned or operated by or for a governmental agency.
- Capital improvement projects of a governmental agency.

- Private construction projects located within one-quarter (1/4) of a mile from an inhabited dwelling, provided that: (1) construction does not occur between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September or between the hours of 6:00 p.m. and 7:00 a.m. during the months of October through May.

As discussed in Chapter 2 (Project Description), the CVWD proposes to construct, operate, and maintain the Project. As a government agency and the Project being public property, the Project fulfills the requirements of Riverside County Code Ordinance No. 847 Section 2 and would be exempt from any construction or operational noise performance standards established by the County General Plan or Noise Ordinance. Furthermore, all construction work would be performed Monday through Friday between 7:00 a.m. and 3:30 p.m. No work would occur at night or on Saturday, Sunday, or holidays to meet schedule constraints or otherwise, without CVWD's written consent. Therefore, construction and O&M activities associated with the Project are not expected to generate noise outside the established construction hours or those specified in the Riverside County Noise Ordinance, without approval of the CVWD and only under special circumstances.

On-Site Construction Noise Sources. Equipment used during construction of the proposed Project would generate temporary noise. Table 4.9-1 presents typical noise levels generated by a variety of equipment types likely utilized during Project construction. These maximum construction-related noise levels would attenuate at an average rate of 6 dBA every doubling of distance (for point sources) depending on adjacent surfaces and noise spreading (FTA, 2006).

Table 4.9-1. Noise Levels from Construction Equipment, Actual Measured

Construction Equipment	Noise Level (Lmax dBA at 50 feet)
Backhoe	78
Compacter (ground)	83
Concrete Batch Plant	83
Concrete Mixer Truck	79
Concrete Pump Truck	81
Dozer	82
Dump Truck	76
Excavator	81
Flatbed Truck	84
Front End Loader	79
Grader	85
Paver	77
Pickup Truck	75
Scraper	84
Vacuum Street Sweeper	82

Source: FHWA, 2006

These maximum noise levels would not be continuous throughout the entire workday, but instead periodic and short-term. Furthermore, construction noise would move as activities progress along Reaches 1 through 4 over a two-year period and would be spread out across the alignment for each of the various tasks denoted in Table 2-2 (Proposed Project Construction Schedule) Section 2.2.2 (Construction). This table provides an overview of the expected timeframes for various construction activities in each Reach. Review of the expected construction equipment noise levels presented in Table 4.9-1 indicates that the loudest expected equipment generally emits Lmax noise up to 85 dBA at 50 feet (grader). Noise calculations were performed based on the noisiest activities within each task identified in Table 2-3, as shown in Table 4.9-2 (see Appendix F).

Table 4.9-2. Expected Maximum Construction Equipment Noise Levels, Hourly Leq		
Task	**Noise Level @ 50 feet**	**Noise Level @ Sensitive Receptors**
Reach 1 Levee – Excavate Soil Cement Trench	88.4 dBA	73.6 dBA @ 275 feet
Reach 2 Levee – Excavate Soil Cement Trench	88.7 dBA	68.7 dBA @ 500 feet
Reach 3 – Excavate Channel	92.1 dBA	75.8 dBA @ 330 feet
Reach 4 – Excavate Channel	92.4 dBA	76.8 dBA @300 feet
Reaches 2, 3, 4 – Soil Cement Lining	93.4 dBA	77.8 dBA @ 300 feet
Avenue 38 - Paving	87.1 dBA	71.6 dBA @ 300 feet
Sun City Collection Basin Excavation	86.8 dBA	86.8 dBA @ 50 feet

Source: Appendix F. Assumes activities are in a discrete area (i.e., not mobile noise sources).

As discussed in Section 3.9.2, the County's General Plan contains policies to ensure construction noise is controlled and minimized, to the extent feasible. Construction would have to occur in relatively close proximity to sensitive receptors, including residences of the Del Webb/Sun City development, the Xavier Preparatory College High School, as well as residences along Reaches 1-4. As such, the community would experience temporary increases in noise from construction. Mitigation Measure N-1 is proposed to establish a process to receive, assess, and address public nuisance complaints regarding construction noise and ensure ambient noise levels are reduced to the extent feasible. Mitigation Measure N-2 would reduce impacts to Xavier College Preparatory High School by scheduling construction activities along Reach 3 in coordination with the school, such as during the summer if possible, when classroom educational activities are at a minimum. With the implementation of these mitigation measures and environmental commitments to reduce and control temporary construction noise, construction of the Project is considered consistent with the General Plan.

Operation. As discussed in Section 3.9.2, per Riverside County Code Ordinance No. 847 Section 2, sound emanating from the maintenance or repair of properties is exempt, provided such maintenance occurs between the hours of 7:00 a.m. and 8:00 p.m. O&M activities for the proposed Project would occur between 7:00 a.m. and 5:00 p.m. Monday through Friday such that no conflicts with the noise ordinance would occur.

With respect to temporary O&M noise conflicting with the General Plan, for the majority of O&M activities, noise would be generated intermittently similar to construction. However, sand removal activities may occur periodically or as frequent as daily. The County of Riverside currently removes sand that accumulates along Avenue 38 several times per year (no longer be required under the proposed Project), such that these types of intermittent sand removal activities are already part of the existing ambient noise condition. Furthermore, this more frequent activity over the long-term would be dispersed, as trucks would travel along the levee and channels to assess sand accumulation, trucks would be loaded, and then travel to the National Wildlife Refuge Blow Sand Augmentation Area for sand disposal. As such, noise in any one area would occur over a short duration, such that ambient noise levels would not be permanently increased. As further assurance that noise impacts from O&M would not result in permanent noise impacts, EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors) and EC N-2 (Use Proper Mufflers) are included as part of the proposed Project, which would locate haul routes to avoid sensitive receptors wherever possible and maintain proper mufflers on equipment. With the implementation of these environmental commitments to reduce and control temporary O&M noise, construction of the Project is considered consistent with the General Plan.

ECs and Mitigation Measures Applicable to Impact N-1

EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors)

EC N-2 (Use Proper Mufflers)

MM N-1 **Address Construction Noise Complaints.** For the duration of Project construction, the CVWD shall implement the following measures to address public complaints regarding temporary noise:

- Inform property owners within 500 feet of the Project boundary of anticipated noise disturbances at least two to four weeks prior to construction, including a contact number to register noise complaints.
- Post a telephone number at work area construction entrances (when occurring within 300 feet of a sensitive receptor) that any complainant can call with questions or issues. All calls shall be returned within 24 hours to answer questions and handle complaints. Documentation of the complaint and resolution shall be maintained. A clear appeal process with the County of Riverside shall be established prior to construction commencement that allows for resolution of noise problems that cannot be immediately solved.
- If noise complaints are received, receptor exposure levels shall be determined and measures implemented to the extent feasible, such as installation of moveable barriers, relocation of equipment, reduced engine idling, or operation of fewer high-noise-level equipment, to reduce noise to below 15 dBA over ambient (without Project activities) for one-half day (4-hour Leq) at the receptor.

MM N-2 **Coordinate Construction with Xavier Preparatory High School.** Prior to construction, CVWD shall meet with Xavier Preparatory High School administration to discuss the construction schedule and make appropriate adjustments to the schedule if possible, to reduce impacts to school classroom educational activities, such as scheduling noisy construction activities to occur during the summertime when classroom educational activities are at a minimum.

CEQA Significance Conclusion

Per Riverside County Code Ordinance No. 847, the Project would be exempt from any performance standard of the County's noise ordinance. EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors) and EC N-2 (Use Proper Mufflers) are included as part of the proposed Project, which would locate haul routes to avoid sensitive receptors wherever possible and maintain proper mufflers on equipment. Temporary noise during construction would be further mitigated with implementation of Mitigation Measures N-1 (Address Construction Noise Complaints) and N-2 (Coordinate Construction with Xavier Preparatory High School). With the implementation of these environmental commitments to reduce and control temporary construction noise, construction of the Project is considered consistent with the General Plan. Impacts related to construction complying with an applicable plan or policy are less than significant (Class III).

O&M activities would generally occur intermittently and/or would be dispersed along the Project reaches (generally Reaches 3 and 4) and local roadways to access the National Wildlife Refuge blowsand augmentation area, such that ambient noise levels would not be permanently increased. Implementation of EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors) and EC N-2 (Use Proper Mufflers) would assure the Project is consistent with an applicable plan or policy and impacts are less than significant (Class III).

Construction would occur during established construction hours, which are within the exempted hours of the Riverside County Noise Ordinance. Any exception to these hours would require CVWD's written consent and therefore would not conflict with the local general plan or noise ordinance (Class III).

Generation of excessive groundborne vibration or groundborne noise levels (Criterion N2).

Impact N-2: Vibration from temporary construction equipment use or from Project operation could substantially disturb sensitive receptors or cause damage to structures.

Construction. During construction of the proposed Project, heavy truck trips and grading/excavation would produce short-term groundborne vibration. The main cause of vibration during vehicle transport is uneven road surfaces. However, in proximity to residential receptors the large truck trips would primarily occur on paved roads, likely producing negligible vibration levels on the order of 0.076 PPV at 25 feet (FTA, 2006 – Table 12-2, for loaded trucks). Additionally, vehicle speeds would be limited to 15 miles per hour on access roads within the Project area (not public roadways) per Mitigation Measure BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan). Therefore, grading and excavation would be the primary source of vibration during construction.

Typically, ground-borne vibrations generated by construction activities attenuate rapidly with distance from the source of the vibration. Ground vibrations from construction activities do not often reach the levels that can damage structures but can achieve the audible and feelable ranges in buildings very close to the source (FTA, 2006). Riverside County does not have established vibration performance standards in either the General Plan or Code of Ordinances. As shown in Tables 3.9-2 and 3.9-3, vibration levels at 0.24 inches per second would be distinctly perceptible and a minimum threshold to ensure no damage to fragile structures occurs. Grading and excavation activities would occur approximately 275 feet from the nearest occupied residential structure, except for the Washington Street Crossing work where activities would be located in closer proximity to homes in the Del Webb/Sun City development. Therefore, for the majority of the construction work, temporary vibration levels are expected to be well below 0.24 inches per second at any adjacent residential structures. For the Washington Street Crossing work, construction equipment would include use of various trucks, backhoes, excavators, compactors, loaders, graders, dozers, asphalt pavers, among others (see Table 2-3). Operation of a dozer, for example, is roughly equivalent to a small bulldozer, where construction vibration levels are estimated at 0.003 in/sec PPV at 25 feet (FTA, 2006 – Table 12-2). As noted above a loaded truck results in vibration levels around 0.076 PPV at 25 feet (FTA, 2006 – Table 12-2). Such ground-borne noise or vibration would attenuate rapidly (i.e., 200 feet or less) from the source and would be barely perceptible (0.0.35 PPV) to residences within close proximity to these construction activities.

Operation. Once constructed, the Project would include heavy truck trips for sand transport that could generate localized vibration. However, identical to construction, large truck trips would primarily occur on paved roads adjacent to residential receptors near the Project site and are expected to produce negligible vibration levels to adjacent receptors.

CEQA Significance Conclusion

Temporary vibration from the operation of vehicles and equipment during construction and O&M activities would generate localized vibration levels that are barely perceptible or not all, and therefore would result in a less-than-significant vibration impact (Class III).

Expose people residing or working in the Project area to excessive noise levels where there is an airport land use plan or where a public airport, public use airport, or private airstrip is located within two miles of the Project activities (Criterion N3).

Impact N-3: Project construction and O&M could expose workers to excessive airport noise.

The nearest airport to the Project site is Bermuda Dunes Airport, located approximately 2.5 miles southeast of Reach 4. The influence area is depicted through compatibility zones, which for this airport extend into the proposed Project area. Reach 4 and the sand disposal area south of Avenue 38 fall within Compatibility Zones C, D, and E (RCALUC, 2004 – Map BD-1). The sand disposal area south of Avenue 38 also falls within the 55 CNEL (community noise equivalent level) noise compatibility contour (RCALUC, 2004 – Map BD-3). From this distance, neither construction nor operation of the Project would subject temporary construction and maintenance workers to excessive aviation-generated noise levels; the Project site is not located within the Airspace Plan for the Bermuda Dunes Airport. The next closest airport is the Palm Springs International Airport. The proposed Project is located beyond the Palm Springs International Airport Compatibility Plan zones and noise compatibility contours (RCALUC, 2004). Therefore, while this issue is included within CEQA Appendix G, this issue is not discussed further.

CEQA Significance Conclusion

The proposed Project is located more than two miles from the closest airport and would not be located in an area with substantial airport-related noise levels that could affect construction personnel. Less-than-significant noise impacts related to airport operations would occur (Class III).

4.9.2.2 Removal of Reach 2 (Alternative 2)

Direct and Indirect Effects Analysis

Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (Criterion N1).

Impact N-1: Construction and O&M activities may be inconsistent with the Riverside County Noise Ordinance or General Plan.

Construction and O&M of Alternative 2, with the exception of Reach 2, would be completed in the same manner as the proposed Project. As discussed above for the proposed Project, the requirements of Riverside County Code Ordinance No. 847 Section 2 and the Riverside County General Plan would be met under Alternative 2; therefore, Alternative 2 would be consistent with the County General Plan and Noise Ordinance. Similarly, O&M work would be consistent with the County General Plan and Noise Ordinance.

CEQA Significance Conclusion

Per Riverside County Code Ordinance No. 847, the Project would be exempt from any performance standard of the County's noise ordinance. EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors) and EC N-2 (Use Proper Mufflers) are included as part of the proposed Project, which would locate haul routes to avoid sensitive receptors wherever possible and maintain proper mufflers on equipment. Temporary noise during construction would be further mitigated with implementation of Mitigation Measures N-1 (Address Construction Noise Complaints) and N-2 (Coordinate Construction with Xavier Preparatory High School). With the implementation of these environmental commitments to reduce and control temporary construction

noise, construction of Alternative 2 is considered consistent with the General Plan. Impacts related to construction and O&M complying with an applicable plan or policy are less than significant (Class III).

Generation of excessive groundborne vibration or groundborne noise levels (Criterion N2).

Impact N-2: Vibration from temporary construction equipment use or from Project operation could substantially disturb sensitive receptors or cause damage to structures.

As discussed above for the proposed Project, heavy truck trips and grading/excavation would be the primary source of vibration. Removal of Reach 2 under Alternative 2 would result in a reduction in the amount of heavy truck trips, as well as grading/excavation required to implement the Project. Typically, ground-borne vibrations generated by construction activities attenuate rapidly with distance from the source of the vibration. Ground vibrations from construction activities do not often reach the levels that can damage structures but can achieve the audible and feelable ranges in buildings very close to the source (FTA, 2006).

CEQA Significance Conclusion

Temporary vibration from the operation of vehicles and equipment during construction and O&M activities would generate localized vibration levels that are barely perceptible or not all, and therefore would result in a less-than-significant vibration impact (Class III).

Expose people residing or working in the Project area to excessive noise levels where there is an airport land use plan or where a public airport, public use airport, or private airstrip is located within two miles of the Project activities (Criterion N3).

Impact N-3: Project construction and O&M could expose workers to excessive airport noise.

Alternative 2 would be located in essentially the same place as the proposed Project. The Project site is not located within the Airspace Plan for the Bermuda Dunes Airport or the Palm Springs International Airport Compatibility Plan. As such, neither construction nor operation of Alternative 2 would subject temporary construction and maintenance workers to excessive aviation-generated noise levels.

CEQA Significance Conclusion

Alternative 2 is located more than two miles from the closest airport and would not be located in an area with substantial airport-related noise levels that could affect construction personnel. Less-than-significant noise impacts related to airport operations would occur (Class III).

4.9.2.3 Modified Reach 3 (Alternative 3)

Direct and Indirect Effects Analysis

Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (Criterion N1).

Impact N-1: Construction and O&M activities may be inconsistent with the Riverside County Noise Ordinance or General Plan.

Construction and O&M of Alternative 3 would be completed in the same manner as the proposed Project. As discussed above for the proposed Project, the requirements of Riverside County Code Ordinance No. 847 Section 2 and the Riverside County General Plan would be met under Alternative 3; therefore,

Alternative 3 would be consistent with the County General Plan and Noise Ordinance. Similarly, O&M work would be consistent with the County General Plan and Noise Ordinance.

CEQA Significance Conclusion

Per Riverside County Code Ordinance No. 847, the Project would be exempt from any performance standard of the County's noise ordinance. EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors) and EC N-2 (Use Proper Mufflers) are included as part of the proposed Project, which would locate haul routes to avoid sensitive receptors wherever possible and maintain proper mufflers on equipment. Temporary noise during construction would be further mitigated with implementation of Mitigation Measures N-1 (Address Construction Noise Complaints) and N-2 (Coordinate Construction with Xavier Preparatory High School). With the implementation of these environmental commitments to reduce and control temporary construction noise, construction of Alternative 3 is considered consistent with the General Plan. Impacts related to construction and O&M complying with an applicable plan or policy are less than significant (Class III).

Generation of excessive groundborne vibration or groundborne noise levels (Criterion N2).

Impact N-2: Vibration from temporary construction equipment use or from Project operation could substantially disturb sensitive receptors or cause damage to structures.

As discussed above for the proposed Project, heavy truck trips and grading/excavation would be the primary source of vibration. Realignment of Reach 3 under Alternative 3 would not result in an appreciable change in the amount of heavy truck trips or grading/excavation required to implement the Project. Typically, ground-borne vibrations generated by construction activities attenuate rapidly with distance from the source of the vibration. Ground vibrations from construction activities do not often reach the levels that can damage structures but can achieve the audible and feelable ranges in buildings very close to the source (FTA, 2006).

CEQA Significance Conclusion

Temporary vibration from the operation of vehicles and equipment during construction and O&M activities would generate localized vibration levels that are barely perceptible or not all, and therefore would result in a less-than-significant vibration impact (Class III).

Expose people residing or working in the Project area to excessive noise levels where there is an airport land use plan or where a public airport, public use airport, or private airstrip is located within two miles of the Project activities (Criterion N3).

Impact N-3: Project construction and O&M could expose workers to excessive airport noise.

Alternative 3 would be located in essentially the same place as the proposed Project. The Project site is not located within the Airspace Plan for the Bermuda Dunes Airport or the Palm Springs International Airport Compatibility Plan. As such, neither construction nor operation of Alternative 3 would subject temporary construction and maintenance workers to excessive aviation-generated noise levels.

CEQA Significance Conclusion

Alternative 3 is located more than two miles from the closest airport and would not be located in an area with substantial airport-related noise levels that could affect construction personnel. Less-than-significant noise impacts related to airport operations would occur (Class III).

4.9.2.4 No Action (Alternative 4)

Direct and Indirect Effects Analysis

Under the No Action Alternative 4, the flood control project would not be constructed and the existing drainage patterns, ambient noise levels, and flood risk would remain. Noise associated with Project construction and O&M would not occur, although noise associated with the cleanup of Avenue 38 would continue. In the event of catastrophic flooding, cleanup activities would impact the ambient noise levels of the area and could result in adverse impacts to a much larger portion of the Thousand Palms community.

4.9.3 Impact Summary – Noise

Table 4.9-3 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to noise. Refer to Section 4.9.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures.

Table 4.9-3. Summary of Impacts and Mitigation Measures – Noise

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
N-1: Construction and O&M activities may be inconsistent with the Riverside County Noise Ordinance or General Plan.	Class III	Class III	Class III	EC N-1 (Locate Construction and O&M Activities to Avoid Sensitive Receptors) EC N-2 (Use Proper Mufflers) MM N-1 (Address Construction Noise Complaints) MM N-2 (Coordinate Construction with Xavier Preparatory High School)
N-2: Vibration from temporary construction equipment use or from Project operation could substantially disturb sensitive receptors or cause damage to structures.	Class III	Class III	Class III	None required.
N-3: Project construction and O&M could expose workers to excessive airport noise.	Class III	Class III	Class III	None required.

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.10 Paleontological Resources

Presented within this section are potential paleontological resources impacts associated with construction and O&M of the Project and alternatives. Refer to Section 3.10.1 for a description of the existing paleontological resources, and Section 3.10.2 for the regulatory framework applicable to the Project. This information is generally derived from the *Paleontological Resource Assessment for the Proposed Thousand Palms Flood Control Project, Riverside County, California* prepared by Applied EarthWorks, Inc. (2016; see in Appendix G).

4.10.1 Issues Identified During Scoping

There were no paleontological issues identified during the public scoping period. See Appendix A (Public Scoping) for a summary of issues relevant to the Project raised during the scoping process.

4.10.2 Environmental Consequences

Significance Criteria. To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the proposed Project and alternatives. Appropriate criteria have been identified and utilized to make these significance conclusions. The following significance criteria were derived from Appendix G of the CEQA Guidelines.

Impacts are considered significant if the proposed Project or alternatives would:

- Criterion PR1: Directly or indirectly disturb or destroy a unique paleontological resource or site or unique geologic feature.

Impact Assessment Methodology. The impact analysis is based on an assessment of baseline conditions relevant to paleontological resources, presented in Section 3.10.1 (Paleontological Resources – Environmental Baseline), and an assessment of Project-related and alternative-related effects on baseline conditions during Project construction, long-term operation, and long-term maintenance using appropriate technical analysis and the impact significance criteria.

4.10.2.1 Proposed Project (Alternative 1)

Directly or indirectly disturb or destroy a unique paleontological resource or site or unique geologic feature (Criterion PR1).

Impact PR-1: Construction of the Project could destroy or disturb significant paleontological resources.

As discussed in Section 3.10.1.3 (Paleontological Resource Potential Based on Geologic Units), the geologic deposits underlying the Project area would have a low paleontological sensitivity, as they are generally too young to preserve fossil material. However, these deposits may be underlain at moderate depth by older Pleistocene alluvium or the Pliocene-Pleistocene Ocotillo Conglomerate, which have proven to yield an abundant and diverse vertebrate fauna from exposures within the Riverside County and the Coachella Valley. Consequently, the likelihood of impacts to scientifically significant vertebrate fossils as a result of the proposed Project development is low, unless excavations disturb older underlying sensitive units. Therefore, further paleontological resource management is recommended for the proposed Project, including retaining a qualified paleontologist on call in the event that a fossil resource is encountered during the course of ground-disturbing activities. Implementation of Mitigation Measures PR-1 and PR-2 would provide for worker training to allow for the identification of fossil resources; provide for an on-call qualified paleontologist in the event a paleontological resource is encountered; and procedures to follow

to protect, recover, and curate paleontological resources. As such, the potential to disturb or destroy paleontological resources as a result of construction of the proposed Project would be low, and there would be no adverse impact on significant paleontological resources.

ECs and Mitigation Measures Applicable to Impact PR-1

MM PR-1 **Paleontological Training.** Prior to the initiation of construction, a qualified and permitted paleontologist (Project Paleontologist) shall be retained on an on-call basis in the event that a paleontological (fossil) resource is encountered during construction. All construction personnel and other on-site personnel shall be trained regarding the recognition of possible fossil) resources that may be encountered in the Project area. Training shall inform all personnel of the procedures to be followed in the event a fossil discovery is made, and provide contact information for the on-call Project Paleontologist. All personnel shall be instructed that unauthorized collection or disturbance of protected fossils is not allowed. Violators will be subject to prosecution under the appropriate State and federal laws, and violations will be grounds for removal from the Project. The training shall be developed by the Project Paleontologist, and may be conducted concurrent with other environmental training. The training may also be videotaped or presented in an informational brochure for future use by field personnel not present at the start of the Project.

The following issues shall be addressed in training or in preparation for construction:

- All construction contracts shall include clauses that require construction personnel to attend training so they are aware of the potential for inadvertently exposing subsurface paleontological resources, their responsibility to avoid and protect all such resources, and the penalties for collection, vandalism, or inadvertent destruction of paleontological resources.
- CVWD shall provide a background briefing for supervisory personnel describing the potential for exposing paleontological resources, and procedures and notifications required in the event of discoveries by Project personnel. Supervisory personnel shall enforce restrictions on collection or disturbance of fossils.

MM PR-2 **Unanticipated Discovery of Paleontological Resources.** In the event paleontological resources are discovered during construction activities, the on-call Project Paleontologist shall be immediately contacted; work in the vicinity of the find shall be halted; and a temporary construction exclusion zone of at least 50 feet, consisting at a minimum of lath and flagging tape, shall be erected around the discovery. The exclusion zone acts as a buffer around the discovery until the Project Paleontologist can assess the resource and make the appropriate notifications to CVWD. If the discovery is considered scientifically significant or potentially significant, the paleontological resource shall be recovered, documented, prepared, identified, and curated in accordance with Society of Vertebrate Paleontology (SVP) guidelines. Per the Riverside County SABER Policy (Safeguard Artifacts Being Excavated in Riverside County), paleontological resources found in Riverside County shall be curated in the Western Science Center in the City of Hemet. Immediately following fossil collection, the temporary construction exclusion zone will be removed and the Project Paleontologist will notify the Project Supervisor that grading activities may resume in the area of the find. If paleontological resources are inadvertently discovered during construction of the Project, a final report describing the results of the paleontological mitigation efforts associated with the Project shall be submitted to CVWD within 30 days following completion of field and laboratory work.

CEQA Significance Determination

The proposed Project is located in an area of low paleontological sensitivity, such that the likelihood of impacting scientifically significant vertebrate fossils as a result of proposed Project construction is low unless excavations disturb older underlying sensitive units. Mitigation Measures PS-1 and PS-2 would provide for worker training to allow for the identification of fossil resources; provide for an on-call qualified paleontologist; and set procedures to protect, recover, and curate any discovered paleontological resources. As such, the potential to disturb or destroy paleontological resources as a result of construction of the proposed Project would be less than significant (Class II).

4.10.2.2 Removal of Reach 2 (Alternative 2)

Direct and Indirect Effects Analysis

Directly or indirectly disturb or destroy a unique paleontological resource or site or unique geologic feature (Criterion PR1).

Impact PR-1: Construction of the Project could destroy or disturb significant paleontological resources.

Alternative 2 would be located in essentially the same place as the proposed Project, with the exception of Reach 2 which would not be constructed. Reaches 1, 3, and 4 would be constructed, operated, and maintained as described for the proposed Project. As discussed above for the proposed Project, the geologic deposits underlying the Alternative 2 area have low paleontological sensitivity; however, they may be underlain at moderate depth with more sensitive deposits. If older underlying sensitive units were to be disturbed, adverse impacts to paleontological resources could occur. Implementation of Mitigation Measures PR-1 and PR-2 would reduce impacts such that no adverse impact on significant paleontological resources would occur.

ECs and Mitigation Measures Applicable to Impact PR-1

MM PR-1 (Paleontological Training)

MM PR-2 (Unanticipated Discovery of Paleontological Resources)

CEQA Significance Conclusion

Same as the proposed Project, Alternative 2 is located in an area of low paleontological sensitivity, such that the likelihood of impacting scientifically significant vertebrate fossils as a result of construction is low unless excavations disturb older underlying sensitive units. Mitigation Measures PS-1 and PS-2 would provide for worker training to allow for the identification of fossil resources; provide for an on-call qualified paleontologist; and set procedures to protect, recover, and curate any discovered paleontological resources. As such, the potential to disturb or destroy paleontological resources as a result of construction of Alternative 2 would be less than significant (Class II).

4.10.2.3 Modified Reach 3 (Alternative 3)

Direct and Indirect Effects Analysis

Directly or indirectly disturb or destroy a unique paleontological resource or site or unique geologic feature (Criterion PR1).

Impact PR-1: Construction of the Project could destroy or disturb significant paleontological resources.

Alternative 3 would be located in essentially the same place as the proposed Project, with a slightly modified alignment for Reach 3. Reaches 1-4 would be constructed, operated, and maintained as described for the proposed Project. As discussed above for the proposed Project, the geologic deposits underlying the Alternative 3 area have low paleontological sensitivity; however, they may be underlain at moderate depth with more sensitive deposits. If older underlying sensitive units were to be disturbed, adverse impacts to paleontological resources could occur. Implementation of Mitigation Measures PR-1 and PR-2 would reduce impacts such that no adverse impact on significant paleontological resources would occur.

ECs and Mitigation Measures Applicable to Impact PR-1

MM PR-1 (Paleontological Training)

MM PR-2 (Unanticipated Discovery of Paleontological Resources)

CEQA Significance Conclusion

Same as the proposed Project, Alternative 3 is located in an area of low paleontological sensitivity, such that the likelihood of impacting scientifically significant vertebrate fossils as a result of construction is low unless excavations disturb older underlying sensitive units. Mitigation Measures PS-1 and PS-2 would provide for worker training to allow for the identification of fossil resources; provide for an on-call qualified paleontologist; and set procedures to protect, recover, and curate any discovered paleontological resources. As such, the potential to disturb or destroy paleontological resources as a result of construction of Alternative 3 would be less than significant (Class II).

4.10.2.4 No Action (Alternative 4)

Direct and Indirect Effects Analysis

Under the No Action alternative, the proposed Project, or its alternatives, would not be constructed and the surrounding area would remain as part of the existing FEMA flood hazard maps. In the event of catastrophic flooding, unknown buried resources could be inadvertently unearthed during ground-disturbing activities associated with construction or repair activities required after a catastrophic flood. While unknown, it is likely similar procedures and provisions as Mitigation Measures PR-1 and PR-2 would be necessary to address inadvertent discoveries and provide detail on how these activities would be implemented.

4.10.3 Impact Summary – Paleontological Resources

Table 4.10-1 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to paleontological resources. Refer to Section 4.10.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures.

Table 4.10-1. Summary of Impacts and Mitigation Measures – Paleontological Resources

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
PR-1: Construction of the Project could destroy or disturb significant paleontological resources.	Class II	Class II	Class II	MM PR-1 (Paleontological Training) MM PR-2 (Unanticipated Discovery of Paleontological Resources)

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.11 Public Safety

Presented within this section are potential public safety impacts, focusing on hazardous materials, environmental contamination, and hazards related to airports associated with construction and O&M of the Project and alternatives. Refer to Section 3.11.1 for a description of the existing environment related to public safety, and Section 3.11.2 for the regulatory framework applicable to the Project.

4.11.1 Issues Identified During Scoping

There were no public safety issues identified during the public scoping period. See Appendix A (Scoping Summary) for a summary of issues relevant to the Project raised during the scoping process.

4.11.2 Environmental Consequences

Significance Criteria. To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the prosed Project and alternatives. Appropriate criteria have been identified and utilized to make these significance conclusions. The following significance criteria were derived from Appendix G of the CEQA Guidelines. In addition, the following list includes significance criteria that were used in the 2000 Final EIS/EIR for the original alignment of the Project (USACE, 2000). Although this EIR/EIS is a stand-alone document, the 2000 Final EIS/EIR criteria were crafted by the U.S. Army Corps of Engineers (USACE) Planning Division (the NEPA Lead Agency at that time) specifically for the Project and are therefore considered applicable to the current Project.

Impacts are considered significant if the proposed Project or alternatives would:

- **Criterion PS1:** Substantially increase the need for government facilities, such that new or physically altered facilities are required to maintain acceptable service ratios, response times, or other performance objectives related fire or police protection.
- **Criterion PS2:** Present a safety hazard for people residing or working in the area, due to the presence of an airport land use plan, and/or the presence of a public airport, a public use airport, and/or a private airstrip within two miles of the project site.
- **Criterion PS3:** 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.
- **Criterion PS4:** Create conditions which would present potential dangers to the public or attract the public to a potentially hazardous area (e.g., attractive nuisances).
- **Criterion PS5:** Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through the reasonably foreseeable accidental release of such materials.
- **Criterion PS6:** Produce hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- **Criterion PS7:** Involve construction activities that could result in mobilizing contaminants currently existing in the soil, creating potential pathways of exposure to humans or wildlife.

Impacts related to Valley Fever, emergency access, and flood hazards are addressed in Sections 4.3 (Air Quality), 4.13 (Transportation), and 4.14 (Water Resources), respectively.

Impact Assessment Methodology. The impact analysis is based on an assessment of baseline conditions relevant to public safety, presented in Section 3.11.1 (Public Safety – Environmental Baseline), and an assessment of Project-related and alternative-related effects on baseline conditions during Project construction, long-term operation, and long-term maintenance using appropriate technical analysis and the impact significance criteria.

4.11.2.1 Proposed Project (Alternative 1)

Substantially increase the need for government facilities, such that new or physically altered facilities are required to maintain acceptable service ratios, response times, or other performance objectives related fire or police protection (Criterion PS1).

As discussed in Section 3.11.1.2 (Hazards), the proposed Project would be served by the Riverside County Fire Department from Station 35, Roy Wilson, which is located approximately two miles from the closest Project feature. The Riverside County Sheriff's Department contracts with the unincorporated cities of Thousand Palms to provide police protection services (RCSD, 2021). The Riverside County Sheriff's office is located at 72248 Northshore Street, Suite 101, Thousand Palms, which is within one mile of the proposed Project. As the proposed Project is located within five miles of the nearest fire and police station, no impacts with regard to acceptable response times would occur.

The proposed Project would construct levees and channels for the purposes of flood control, which would not increase demand on fire or police protection. No new or altered facilities would be required to support the proposed Project.

CEQA Significance Conclusion

The proposed Project is located within five miles of the nearest fire and police station, such that no impacts to existing facilities or response times would occur (No Impact).

Present a safety hazard for people residing or working in the area, due to the presence of an airport land use plan, and/or the presence of a public airport, a public use airport, and/or a private airstrip within two miles of the project site (Criterion PS2).

The County of Riverside has adopted an Airport Land Use Compatibility Plan to govern land use issues involving airports (RCALUC, 2004). This Airport Land Use Compatibility Plan provides compatibility maps and details what classifies as a *major land use action* which would require review by the Airport Land Use Commission. As described in Section 3.11.2, the nearest airport to the proposed Project is the Bermuda Dunes Airport, approximately 2.5 miles to the southeast. The influence area is depicted through compatibility zones, which for this airport extend into the proposed Project area. Reach 4 and the sand disposal area south of Avenue 38 fall within Compatibility Zones C, D, and E (RCALUC, 2004 – Map BD-1). The sand disposal area south of Avenue 38 also falls within the 55 CNEL (community noise equivalent level) noise compatibility contour (RCALUC, 2004 – Map BD-3). The proposed Project is not located within the Airspace Plan for the Bermuda Dunes Airport (RCALUC, 2004 – Map BD-2).

As described in the Airport Land Use Compatibility Plan, Section 1.5.3, *major land use actions* within Compatibility Zone C would have a height of 70 feet or 150 feet within Compatibility Zone D or E. The proposed levee would have a maximum height of 14 feet, which would not qualify as a major land use action and would not create a safety hazard. Equipment to be utilized during construction, such as excavator, dump truck, backhoe, loader, etc. would result in heights greater than 14 feet when operating on top of the levee; however, these equipment would not exceed the 70-foot limit. Furthermore, noise levels of 55 CNEL would not create a work environment that would present a safety

risk to construction personnel. As such, no safety hazards would result from the proposed Project being located within an airport land use plan.

CEQA Significance Conclusion

The proposed Project is located more than two miles from the closest airport, would not result in construction or use of equipment that would affect air traffic, and would not be located in an area with substantial airport noise levels that could affect construction personnel. No safety impacts related to airport operations would occur (No Impact).

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 (Criterion PS3).

Impact PS-1: The Project could trigger wildland fires.

The County of Riverside Multi-Jurisdictional Local Hazard Mitigation Plan defines a wildfire as "an uncontrolled fire spreading through vegetative fuels, posing danger and destruction to property" (Riverside County, 2018). Map 9 (Western Riverside County Wildfire Susceptibility Risks Map) of the report shows that the proposed Project lies within an area of little or no threat to moderate for wildfire. The proposed Project location does not lie in a Very High Fire Hazard Severity Zone (VHFHSZ), as shown on the CAL FIRE VHFHSZ – Western Riverside County map (CAL FIRE, 2021).

Fire protection, rescue, pre-hospital emergency medical care, hazardous materials response, and fire prevention education in the area of the proposed Project is provided by the Riverside County Fire Department in cooperation with CAL FIRE. There are two fire stations within two miles of the proposed Project, Roy Wilson Fire Station 35 (31920 Robert Road, Thousand Palms) and North Bermuda Dunes Fire Station 81 (37995 Washington Street, Riverside County), such that the proposed Project would be adequately served in the event of a fire (CDFD, 2021). Furthermore, the proposed Project would be constructed in accordance with all applicable regulations including the California Uniform Fire Code and Riverside County Fire Ordinance. O&M activities as required for the proposed Project would also be conducted in compliance with all local fire abatement requirements, including conducting annual brush clearance as necessary. Compliance with these regulations, implementation of Mitigation Measure PS-1 during construction, the moderate to non-existent current risk of wildfire in the project area, and the design of the proposed Project would reduce the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires.

ECs and Mitigation Measures Applicable to Impact PS-1

MM PS-1 **Standard Measures to Reduce Fire Risk.** Construction contracts shall provide standard measures for fire safety in compliance with the applicable sections of the California Uniform Fire Code and adopted Riverside County Fire Protection ordinances, standards and regulations. Measures may include, but not be limited to, the following:

- Materials that are susceptible to spontaneous ignition, such as oily rags, would be stored in appropriate containers and safeguards would be taken to minimize the risk of exposing combustible materials to unintended sources of ignition;
- Smoking would be prohibited except in approved areas;
- Leaking equipment would be immediately repaired and/or taken out of service, and leaked materials cleaned up;

- Fire protection equipment, including fire extinguishers, would be kept on site and inspected/maintained in accordance with applicable manufacturer recommendations;
- Readily accessible emergency telephone facilities would be provided to all work crews to immediately report fire ignition to "911" emergency response services;
- Internal-combustion-powered construction equipment would be located so that exhausts do not discharge against combustible material, equipment would not be refueled while in operation, and fuel for equipment would be stored in appropriate areas (if the contractor opts to store fuel on site); and
- Combustible debris, rubbish, and waste material would be removed and/or appropriately stored at the end of each workday and would not be disposed of by burning.

CEQA Significance Determination

The proposed Project is not located in an area of high risk of wildfire, would be constructed and operated in accordance with all applicable regulations, and would be adequately served by nearby local fire stations. Additionally, Mitigation Measure PS-1 would ensure that construction activities would be carried out in such a way as to avoid fire ignition opportunities. As such, the proposed Project would not result in exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires and impacts would be less than significant (Class II).

Create conditions which would present potential dangers to the public or attract the public to a potentially hazardous area (e.g., attractive nuisances) (Criterion PS4).

Impact PS-2: The Project could present potential dangers to the public or attract the public to a potentially hazardous area.

The proposed Project would construct levees and channels for the purposes of flood control, which would improve existing flooding conditions in the Thousand Palms area. The potential for someone to be injured by tumbling off the top of the levee (5- to 14-feet high) is considered to be minimal due to the gradual slope of the levee banks. However, the proposed channels in Reaches 3 and 4 would result in high-velocity water flowing in the channels during a large storm event, which could endanger anyone attempting to illegally cross the channels at that time. The drowning danger presented by the channels under flooding conditions would be minimized through implementation of EC P-1 (Design Channels with Fencing), which would prevent public access to the channels.

ECs and Mitigation Measures Applicable to Impact PS-2

EC P-1 (Design Channels with Fencing)

CEQA Significance Conclusion

The proposed Project would have the potential to endanger anyone attempting to illegally cross the channels in Reaches 3 and 4 during a large storm event. The drowning danger would be minimized through implementation of EC P-1 (Design Channels with Fencing). Impacts would be less than significant (Class III).

Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through the reasonably foreseeable accidental release of such materials (Criterion PS5).

Impact PS-3: The Project could expose people or the environment to adverse effects from hazardous material use, transport, storage, or disposal.

The equipment and vehicles required for proposed Project construction and routine maintenance would be powered by either diesel fuel or gasoline. No on-site fuel storage would occur. Construction vehicles and equipment would be maintained and re-fueled in designated staging areas or off-site maintenance yards (per EC W-1, Hazardous Spills). Therefore, implementation of the proposed Project would have the potential to cause small-scale hazardous materials spills related to fuels and other automotive and equipment fluids such as oils, lubricants, and hydraulic fluids. Implementation of EC W-1 (Hazardous Spills) would respond to releases of hazardous materials and require the immediate clean up and remediation of accidental spills per Federal, State, and local regulations. To further prevent accidental spills, Mitigation Measures PS-2 through PS-4 are recommended.

During O&M activities, it is anticipated that only limited amounts of hazardous materials would be used, primarily liquids such as gasoline, lubricants, and solvents associated with maintenance vehicles. O&M would likely only require transport, use, and disposal of hazardous materials infrequently and would likely be associated with emergency repair and maintenance activities. It is likely that only minor drips or spills of maintenance vehicle fluids would occur during O&M activities, which would be cleaned up immediately after occurrence.

ECs and Mitigation Measures Applicable to Impact PS-3

EC W-1 (Hazardous Spills)

MM PS-2 **Refueling Practices.** On-site re-fueling of construction equipment would be accomplished at least 50 feet away from flowing water. Best Management Practices (BMPs) would be used and include such actions as having someone present to monitor refueling activities to ensure that spillage from overfilling, nozzle removal, or other action does not occur; providing on-site hazardous waste clean-up equipment and spill kits; and using appropriately sized drip pans and absorbent liners. Spill kits shall be in close proximity to the fuel truck in case of fuel or other fluid spills. All equipment would be checked for leaks prior to operation and repaired as necessary.

MM PS-3 **Worker Training.** Prior to construction, all construction site workers will be trained to recognize and respond to spills, including which authorities to contact. The crews will be supplied with, and trained in, the use of containment devices and spill kits, personal protective equipment, and detailed emergency response guidance. Records of all training will be sent to the CVWD at the end of each Project construction phase along with a report detailing the training plans.

MM PS-4 **Human Waste**. Portable self-contained chemical toilets will be provided in sufficient quantity for the construction crews. The toilets will be provided by a commercial service and will be maintained in good working order to ensure that there are no leaks and will pump or replace the toilets as necessary to prevent a containment breach. The vendor will be responsible for off-site disposal of waste according to appropriate regulations.

CEQA Significance Conclusion

With implementation of EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 through PS-4, the proposed Project would not create a significant hazard to the public or the environment as a result of the routine transport, use, or disposal of hazardous materials or from an accidental release of hazardous materials (Class II).

Produce hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (Criterion PS6).

Impact PS-4: The Project could expose students to hazardous emissions or acutely hazardous materials.

There is one school located within one-quarter mile of the proposed Project, Xavier College Preparatory High School. Reach 3 of the proposed Project would pass in close proximity of the school site (within approximately 1,000 feet of the school buildings and within approximately 580 feet of the athletic fields). As described in Section 2 (Project Description) the 5,314-foot-long (1.01 mile) section of the proposed Project which would pass Xavier High School has been designed as an incised trapezoidal channel design to minimize disruptions to the school property while still achieving the Project goals of flood protection and facilitation of sand migration. The incised trapezoidal channel design would be constructed from soil cement, a compacted, high-density mix of pulverized rocks and soils with cement and water, and earthen materials. These materials are not made up of acutely hazardous materials, and do not produce hazardous emissions. Additionally, the proposed Project would be constructed using standard construction equipment (e.g., backhoe, dump truck, excavator, etc.), which would not produce hazardous emissions or have the potential to release acutely hazardous materials. Emissions associated with the operation of construction equipment are assessed in Section 4.3 (Air Quality). Per Section 3.3.1.1 (Air Quality), toxic air contaminants (TACs), such as lead, vinyl chloride, and hydrogen sulfide, are pollutants that would not be emitted by the Project above trace quantities. As discussed under Impact PS-3, hazardous material spills would be localized and immediately contained and cleaned up in compliance with EC W-1 (Hazardous Spills). Mitigation Measures PS-2 through PS-4 would further prevent potential exposure to hazardous materials. No acutely or extremely hazardous materials, substances, or wastes would be utilized during construction or O&M activities.

ECs and Mitigation Measures Applicable to Impact PS-4

EC W-1 (Hazardous Spills)

See Impact PS-2 and PS-3 for the full text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

CEQA Significance Conclusion

With implementation of EC W-1 (Hazardous Spills) and Mitigation Measures PS-2 through PS-4, the proposed Project would not expose the Xavier College Preparatory High School to hazardous emissions or acutely hazardous materials (Class II).

Involve construction activities that could result in mobilizing contaminants currently existing in the soil, creating potential pathways of exposure to humans or wildlife (Criterion PS7).

Impact PS-5: Project construction could encounter unknown environmental contamination and expose construction workers and the public.

Per the Phase I Environmental Site Assessment (ESA) completed for the Project, the results of which are summarized in Section 3.11.1.1 (Environmental Contamination), the proposed Project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As such, the proposed Project would not create a hazard to the public based on its location. While there was no evidence of chemical dumping or staining observed in the Project area when the Phase I ESA was completed, dumping of wastes is a concern and continues. Materials dumped in the study area include trash, wood, tires, concrete, piping, metal, construction debris, empty drums, and palm trees. Old structures, if removed, may also contain asbestos and lead paint. Additionally, former agricultural areas have the potential to have been affected by historical pesticide and herbicide use. As such, previous soil or groundwater contamination could be encountered.

Due to the evolving nature of the dumped materials throughout the Project area, Mitigation Measure PS-5 (Phase I Environmental Site Assessment) is recommended, which requires a Phase I ESA to be completed immediately prior to Project construction. If soil or groundwater contamination are found to be present, excavation and disposal of contaminated soils and/or groundwater could expose construction workers or the public to hazardous materials. To reduce this impact, Mitigation Measure PS-6 (Worker Environmental Awareness Program) would be implemented, which would include instructions on how to identify soil or groundwater contamination, and procedures to respond, such as stopping work at the identified location, notifying the foreman and environmental monitors upon discovery, contacting the proper authorities, and clean up and disposal. For homes to be removed under the proposed Project, testing and removal of contaminants, such as asbestos and lead-based paint, would be required and performed by a licensed, certified contractor per State and federal regulations.

ECs and Mitigation Measures Applicable to Impact PS-5

MM PS-5 **Phase I Environmental Site Assessment.** The CVWD or its contractor shall complete a Phase I ESA no more than six months prior to Project construction. Findings of the Phase I ESA shall be integrated into the Worker Environmental Awareness Program (see MM PS-6).

MM PS-6 **Worker Environmental Awareness Program.** The CVWD shall implement a Worker Environmental Awareness Program (WEAP). Elements of the program shall include:

- Training on how to identify contamination;
- Notification protocols for when potential contamination is identified, including notifying the foreman and environmental monitor(s);
- Stop-work protocols, including stopping work at the identified location, assessment of the area by the environmental monitor, and notification of the proper authorities;
- Soil removal requirements, such as placing potentially contaminated soil into lined stockpiles, dump trucks, or roll-off containers, sampling, and testing to determine appropriate handling, treatment, and disposal options;
- Groundwater removal requirements, such as pumping into a tank and disposal at an off-site disposal facility in accordance with applicable laws;

- If soil is classified as hazardous, it shall be properly managed on location and transported in accordance with U.S. Department of Transportation regulations using a Uniform Hazardous Waste Manifest to a Class I landfill or other appropriate soil treatment or recycling facility. All hazardous materials would be transported, used, and disposed of in accordance with applicable rules and regulations.

CEQA Significance Conclusion

Following State and federal regulations, as well as implementation of Mitigation Measure PS-5 (Phase I Environmental Site Assessment) and PS-6 (Worker Environmental Awareness Program), would reduce the potential for mobilizing contaminants and exposure of construction personnel and the public to a less-than-significant level (Class II).

4.11.2.2 Removal of Reach 2 (Alternative 2)

Direct and Indirect Effects Analysis

Substantially increase the need for government facilities, such that new or physically altered facilities are required to maintain acceptable service ratios, response times, or other performance objectives related fire or police protection (Criterion PS1).

Under Alternative 2 Reaches 1, 3, and 4 would be implemented as described for the proposed Project (Figure 2-8, Alternative 2 Alignment). Impacts would therefore be essentially the same as those described in Section 4.11.2.1 for the proposed Project. Eliminating Reach 2 would not alter the Project's proximity to the Riverside County Sheriff's office or Riverside County Fire Department station. No change in fire or police response times would occur and no new or altered facilities would be required.

CEQA Significance Conclusion

Same as the proposed Project, Alternative 2 is located within five miles of the nearest fire and police station, such that no impacts to existing facilities or response times would occur (No Impact).

Present a safety hazard for people residing or working in the area, due to the presence of an airport land use plan, and/or the presence of a public airport, a public use airport, and/or a private airstrip within two miles of the project site (Criterion PS2).

This alternative removes Reach 2, but does not change the location of the Project or the design of Reaches 1, 3, and 4. Impacts related to Alternative 2 would therefore be the same as the proposed Project, as described in Section 4.11.2.1. Alternative 2 is located more than two miles from the closest airport, would not result in construction or use of equipment that would affect air traffic, and would not be located in an area with substantial airport noise levels that could affect construction personnel. Therefore, no safety hazards would result from Alternative 2 being located within an airport land use plan.

CEQA Significance Conclusion

Like the proposed Project, Alternative 2 would be located more than two miles from the closest airport, would not impact air traffic, or be in an area with airport noise levels that could affect construction personnel. No safety impacts related to airport operations would occur (No Impact).

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 (Criterion PS3).

Impact PS-1: The Project could trigger wildland fires.

Impacts related to Alternative 2 and the potential for triggering wildland fires would be essentially the same as the proposed Project, although possibly reduced as total construction would be decreased with the removal of Reach 2. All other aspects of this alternative would be the same as the proposed Project, including implementation of Mitigation Measure PS-1, which would minimize wildland fire impacts. Compliance with existing fire regulations, implementation of mitigation, and the same low-risk for wildfire in the Project area, would reduce the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires.

ECs and Mitigation Measures Applicable to Impact PS-1

PS-1 (Standard Measures to Reduce Fire Risk)

CEQA Significance Conclusion

Like the proposed Project, Alternative 2 would not be in an area with high risk of wildfire, would be constructed in accordance with all applicable regulations, and would be sufficiently served by nearby local fire stations. With implementation of the Mitigation Measure PS-1, fire ignition opportunities would be further reduced. Therefore, this alternative would not result in exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires and impacts that would be less than significant (Class II).

Create conditions which would present potential dangers to the public or attract the public to a potentially hazardous area (e.g., attractive nuisances) (Criterion PS4).

Impact PS-2: The Project could present potential dangers to the public or attract the public to a potentially hazardous area.

Like the proposed Project, Alternative 2 would involve construction of levees and channels for flood control, though to a lesser degree with the elimination of Reach 2. As with the proposed Project, Alternative 2 includes construction of Reaches 3 and 4, such that the same drowning risk to individuals who might illegally cross the channels during a large storm event would occur. EC P-1 would prevent public access to the channels, thereby minimizing the potential for this to occur. The removal of Reach 2 would remove the flood protection which would otherwise be provided to the SCE Mirage substation. In the event of a 100-year flood event, the station would become partially inundated. If the station were to become inundated, localized grid reliability as well as services which rely on the grid may be adversely affected.

ECs and Mitigation Measures Applicable to Impact PS-2

EC P-1 (Design Channels with Fencing)

CEQA Significance Conclusion

Same as the proposed Project, Alternative 2 could possibly endanger anyone who attempts to illegally cross the channels in Reaches 3 and 4 during a large storm event. Implementation of EC P-1 would reduce drowning danger to a less-than-significant level (Class III).

Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through the reasonably foreseeable accidental release of such materials (Criterion PS5).

Impact P-3: The Project could expose people or the environment to adverse effects from hazardous material use, transport, storage, or disposal.

All activities relating to the operation and use of equipment and vehicles used for Alternative 2 would be the same as those required for construction for the proposed Project. Therefore, implementation of this alternative could also possibly result in small-scale hazardous materials spills related to fuels and other automotive equipment fluids, as described in Section 4.11.2.1. Implementation of EC W-1 and Mitigation Measures PS-2 through PS-4 would provide mechanisms for the prevention, response, cleanup, and remediation of accidental hazardous waste spills. All O&M activities, and their related risks, for this alternative would be the same as in the proposed Project. Minor drips or spills of maintenance vehicle fluids during O&M activities would be cleaned up immediately after occurrence.

ECs and Mitigation Measures Applicable to Impact PS-3

EC W-1 (Hazardous Spills)

See Impact PS-2 and PS-3 for the full text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

CEQA Significance Conclusion

With implementation of EC W-1 and Mitigation Measures PS-2 through PS-4, Alternative 2 would not create a significant hazard to the public or the environment as a result of the routine transport, use, or disposal of hazardous materials or from an accidental release of hazardous materials (Class II).

Produce hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (Criterion PS6).

Impact PS-4: The Project could expose students to hazardous emissions or acutely hazardous materials.

Alternative 2 would result in the same construction activities near Xavier College Preparatory High School (Reach 3). Same as the proposed Project, Alternative 2 would minimize disruption to school property using the channel design and would use the same types of construction equipment and materials which do not produce hazardous emissions or have the potential to release acutely hazardous materials. Emissions associated with the operation of construction equipment are provided in further detail in Section 4.3 (Air Quality). Per Section 3.3.1.1 (Air Quality), TACs (e.g., lead, vinyl chloride, hydrogen sulfide) are pollutants that would not be emitted by the proposed Project above trace quantities. Hazardous material spills would be localized and immediately contained and cleaned up in compliance with EC W-1, and Mitigation Measures PS-2 through PS-4 are recommended to further prevent potential exposure to hazardous materials. No acutely or extremely hazardous materials, substances, or wastes would be utilized during construction or O&M activities.

ECs and Mitigation Measures Applicable to Impact PS-4

EC W-1 (Hazardous Spills)

See Impact PS-3 for the full text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

CEQA Significance Conclusion

With implementation of EC W-1 and Mitigation Measures PS-2 through PS-4, Alternative 2 would not expose the Xavier College Preparatory High School to hazardous emissions or acutely hazardous materials (Class II).

Involve construction activities that could result in mobilizing contaminants currently existing in the soil, creating potential pathways of exposure to humans or wildlife (Criterion PS7).

Impact PS-5: Project construction could encounter unknown environmental contamination and expose construction workers and the public.

Alternative 2 would be located in essentially the same place as the proposed Project, except for Reach 2 which is eliminated under this alternative. As described for the proposed Project in Section 4.11.2.1, Alternative 2 would also not create a public hazard based on its location. The Phase I Environmental Site Assessment completed for the proposed Project states that Reaches 1-4 would not be located on a listed hazardous materials site, and since Alternative 2 does not expand the construction footprint into new areas this statement holds true. However, illegally dumped trash, old structures, and former agricultural areas would be a concern under Alternative 2, as previous soil or groundwater contamination could be encountered. If excavation of these areas is needed, construction workers or the public could be exposed to hazardous materials. This impact would be reduced with implementation of Mitigation Measures PS-5 and PS-6. For homes or structures to be removed under Alternative 2, testing and removal of contaminants, such as asbestos and lead-based paint, would be required and performed by a licensed, certified contractor per State and federal regulations.

ECs and Mitigation Measures Applicable to Impact PS-5

See Impact PS-5 for the full text of the following mitigation measures:

MM PS-5 (Phase I Environmental Site Assessment)

MM PS-6 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

Alternative 2 would implement Mitigation Measures PS-5 and PS-6, as well as follow State and federal regulations, which would reduce the potential for mobilizing contaminants and exposure of construction personnel and the public to a less-than-significant level (Class II).

4.11.2.3 Modified Reach 3 (Alternative 3)

Direct and Indirect Effects Analysis

Substantially increase the need for government facilities, such that new or physically altered facilities are required to maintain acceptable service ratios, response times, or other performance objectives related fire or police protection (Criterion PS1).

Alternative 3 represents a minor alignment deviation from the proposed Project; Reaches 1-3 would otherwise be implemented as described for the proposed Project. Alternative 3 would be located within five miles of the nearest fire and police station and would not impact response times, same as the proposed Project. Development of new or altered facilities to support Alternative 2 would not be required.

CEQA Significance Conclusion

Alternative 3 would be located within five miles of the nearest fire and police station and would not impact existing facilities or response times (No Impact).

Present a safety hazard for people residing or working in the area, due to the presence of an airport land use plan, and/or the presence of a public airport, a public use airport, and/or a private airstrip within two miles of the project site (Criterion PS2).

This alternative involves small adjustments to the angle of Reach 3. In general, the location and design of the Project would be similar to the proposed Project. Impacts related to Alternative 3 would therefore be the same as the proposed Project, as described in Section 4.11.2.1. Alternative 3 is located more than two miles from the closest airport, would not result in construction or use of equipment that would affect air traffic, and would not be located in an area with substantial airport noise levels that could affect construction personnel. Therefore, no safety hazards would result from Alternative 3 being located within an airport land use plan.

CEQA Significance Conclusion

Like the proposed Project, Alternative 3 would be located more than two miles from the closest airport, would not impact air traffic, or be in an area with airport noise levels that could affect construction personnel. No safety impacts related to airport operations would occur (No Impact).

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 (Criterion PS3).

Impact PS-1: The Project could trigger wildland fires.

Impacts related to Alternative 3 and the potential for triggering wildland fires would be essentially the same as the proposed Project as described in Section 4.11.2.1, as it would also be located in an area of little or no threat to moderate for wildfire and would not lie in a VHFHSZ and would be constructed in the same manner. Compliance with existing fire regulations, implementation of Mitigation Measure PS-1, and the same low-risk for wildfire in the Project area, would reduce the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires.

ECs and Mitigation Measures Applicable to Impact PS-1

PS-1 (Standard Measures to Reduce Fire Risk)

CEQA Significance Conclusion

Like the proposed Project, Alternative 3 would not be in an area of high risk of wildfire, would be constructed in accordance with all applicable regulations, and would be sufficiently served by nearby local fire stations. With implementation of the Mitigation Measure PS-1, fire ignition opportunities would be further reduced. Therefore, this alternative would not result in exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires and impacts that would be less than significant (Class II)

Create conditions which would present potential dangers to the public or attract the public to a potentially hazardous area (e.g., attractive nuisances) (Criterion PS4).

Impact PS-2: The Project could present potential dangers to the public or attract the public to a potentially hazardous area.

Like the proposed Project, Alternative 3 would involve construction of levees and channels for flood control with only the angle of Reach 3 being modified. The size of Reaches 3 and 4 would essentially remain the same as in the proposed Project, such that this alternative would pose the same risk to individuals who might illegally cross the channels during a large storm event. EC P-1 would prevent public access to the channels, thereby minimizing the potential drowning danger.

ECs and Mitigation Measures Applicable to Impact PS-2

EC P-1 (Design Channels with Fencing)

CEQA Significance Conclusion

Similar to the proposed Project, Alternative 3 could possibly endanger anyone who attempts to illegally cross the channels in Reaches 3 and 4 during a large storm event. Implementation of EC P-1 would reduce drowning danger to a less-than-significant level (Class III).

Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through the reasonably foreseeable accidental release of such materials (Criterion PS5).

Impact P-3: The Project could expose people or the environment to adverse effects from hazardous material use, transport, storage, or disposal.

All activities relating to the operation and use of equipment and vehicles used for Alternative 3 would be the same as those required for construction for the proposed Project, as described in Section 4.11.2.1. Therefore, implementation of this alternative could also possibly result in small-scale hazardous materials spills related to fuels and other automotive equipment fluids. To reduce this risk, EC W-1 and Mitigation Measures PS-2 through PS-4 would provide mechanisms for the prevention, response, cleanup, and remediation of accidental hazardous waste spills. All O&M activities, and their related risks, for this alternative would also be the same as in the proposed Project. Minor drips or spills of maintenance vehicle fluids during O&M activities would be cleaned up immediately after occurrence.

ECs and Mitigation Measures Applicable to Impact PS-3

EC W-1 (Hazardous Spills)

See Impact PS-2 and PS-3 for the full text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

CEQA Significance Conclusion

With implementation of EC W-1 and Mitigation Measures PS-2 through PS-4, Alternative 3 would not create a significant hazard to the public or the environment as a result of the routine transport, use, or disposal of hazardous materials or from an accidental release of hazardous materials (Class II).

Produce hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (Criterion PS6).

Impact PS-4: The Project could expose students to hazardous emissions or acutely hazardous materials.

Alternative 3 realigns the levee (northern) portion of Reach 3 but maintains the same alignment as the proposed Project for the channel (southern) portion, which is the portion of Reach 3 that passes in close proximity to the Xavier College Preparatory High School. As such, Alternative 3 would disrupt the school property in the same manner as the proposed Project. Alternative 3 would minimize disruption to school property using the channel design and would use the same types of construction equipment and materials as the proposed Project, which do not produce hazardous emissions or have the potential to release acutely hazardous materials. Emissions associated with the operation of construction equipment are provided in Section 4.3 (Air Quality). Per Section 3.3.1.1 (Air Quality), TACs (e.g., lead, vinyl chloride, hydrogen sulfide) are pollutants that would not be emitted by the proposed Project above trace quantities. Hazardous material spills would be localized and immediately contained and cleaned up in compliance with EC W-1, and Mitigation Measures PS-2 through PS-4 are recommended to further prevent potential exposure to hazardous materials. No acutely or extremely hazardous materials, substances, or wastes would be utilized during construction or O&M activities.

ECs and Mitigation Measures Applicable to Impact PS-4

EC W-1 (Hazardous Spills)

See Impact PS-2 and PS-3 for the full text of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

CEQA Significance Conclusion

With implementation of EC W-1 and Mitigation Measures PS-2 through PS-4, Alternative 3 would not expose the Xavier College Preparatory High School to hazardous emissions or acutely hazardous materials (Class II).

Involve construction activities that could result in mobilizing contaminants currently existing in the soil, creating potential pathways of exposure to humans or wildlife (Criterion PS7).

Impact PS-5: Project construction could encounter unknown environmental contamination and expose construction workers and the public.

Alternative 3 would be located in essentially the same place as the proposed Project, except for Reach 3 where the northern portion would be shifted to the west. Per the Phase I Environmental Site Assessment completed for the proposed Project, no listed hazardous materials sites are within the construction footprint of the proposed Project. The area in which Alternative 3 would diverge is of a similar, undeveloped nature. However, as with the proposed Project, illegally dumped trash, old structures, and former agricultural areas would be a concern under Alternative 3, as previous soil or groundwater contamination could be encountered. If excavation of these areas is needed, construction workers or the public could be exposed to hazardous materials. To reduce this risk, Alternative 3 would employ Mitigation Measures PS-5 and PS-6 for soil and groundwater contamination. For homes or structures to be removed under Alternative 3, testing and removal of contaminants, such as asbestos and lead-based paint, would be required and performed by a licensed, certified contractor per State and federal regulations.

ECs and Mitigation Measures Applicable to Impact PS-5

See Impact PS-5 for the full text of the following mitigation measures:

MM PS-5 (Phase I Environmental Site Assessment)

MM PS-6 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

Alternative 3 would implement Mitigation Measures PS-5 and PS-6, as well as also follow State and federal regulations, which would reduce the potential for mobilizing contaminants and exposure of construction personnel and the public to a less-than-significant level (Class II).

4.11.2.4 No Action (Alternative 4)

Under the No Action Alternative, construction and operation of the flood control project would not occur and the existing drainage patterns and flood risk would remain, such that the residence, schools, and businesses of Thousand Palms would continue to be exposed to significant risk of loss, injury or death related to flooding.

Damage and impacts from a 100-year flood event could result in disturbances to infrastructure and development, including government facilities related to fire or police protection and local schools due to possible flood damage. If local police and fire services, in addition to nearby residences and other land uses, are impacted from a flooding event, this alternative would not only increased demand for rescue services from fire and police stations, but could also negatively impact response times, depending on the severity of the damage. In addition, the No Action Alternative may result in impacts related to cleanup as a result of flooding, which could increase the risk for releasing hazardous materials into the environment. Construction equipment and vehicles used for cleanup services would have the potential to cause hazardous materials spills related to fuels and other automotive and equipment fluids such as oils, lubricants, and hydraulic fluids. The size of potential spills is indeterminant because they would be dependent on the severity of damage, as greater damage would require greater cleanup services which, in turn, would carry greater risk of potential spills from the equipment and vehicles used.

4.11.3 Impact Summary – Public Safety

Table 4.11-1 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to public safety. Refer to Section 4.11.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures.

Table 4.11-1. Summary of Impacts and Mitigation Measures – Public Safety

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
PS-1: The Project could trigger wildland fires.	Class II	Class II	Class II	MM PS-1 (Standard Measures to Reduce Fire Risk)
PS-2: The Project could present potential dangers to the public or attract the public to a potentially hazardous area.	Class III	Class III	Class III	EC P-1 (Design Channels with Fencing)
P-3: The Project could expose people or the environment to adverse effects from hazardous material use, transport, storage, or disposal.	Class II	Class II	Class II	EC W-1 (Hazardous Spills) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste)
PS-4: The Project could expose students to hazardous emissions or acutely hazardous materials.	Class II	Class II	Class II	EC W-1 (Hazardous Spills) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste)
PS-5: Project construction could encounter unknown environmental contamination and expose construction workers and the public.	Class II	Class II	Class II	MM PS-5: Phase I Environmental Site Assessment MM PS-6: Worker Environmental Awareness Program

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.12 Socioeconomics and Environmental Justice

This section describes potential effects of the proposed Thousand Palms Flood Control Project (proposed Project) on socioeconomics and environmental justice. Population and housing are also discussed in this section, as well as in Section 4.8 (Land Use and Recreation).

4.12.1 Issues Identified During Scoping

Table 4.12-1 below provides a list of socioeconomics and environmental justice-related issues raised during the public scoping period for the EIR/EIS (see Appendix A, Public Scoping). Issues are listed by agency or members of the public providing comment. The table also includes a brief discussion the applicability of each issue to the environmental analysis and where that issue is addressed in the EIR/EIS.

Table 4.12-1. Scoping Issues Relevant to Socioeconomics and Environmental Justice

Comment	Consideration in the EIS/EIR
H.N. and Frances C. Berger Foundation	
Expressed concern regarding property acquisitions north of the Classic Club Golf Course and the potential loss of community benefit associated with those acquisitions. The commenter suggests alternative alignments.	Potential impacts from acquisition of property are discussed under Criteria S1 through S3. Potential impacts to community economics are discussed under Criterion S5. Please see Section 2 for a discussion of alternatives to the proposed Project.

4.12.2 Environmental Consequences

Significance Criteria. Currently, there are no formal requirements or procedures to evaluate potential environmental justice impacts under CEQA.

In addition, CEQA does not require formal assessment to evaluate socioeconomic impacts; and rather, focuses on the physical effects of a project on the environment. CEQA Guidelines Section 15131 (Economic and Social Effects) states:

(a) Economic or social effects of a project shall not be treated as significant effects on the environment…

(b) Economic or social effects of a project may be used to determine the significance of physical changes caused by the project…

(c) Economic, social, and particularly housing factors shall be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce or avoid the significant effects on the environment identified in the EIR (CEQA Guidelines. §§ 15064, subd. (e), 15131).

The criterion provided below is derived from existing federal policy and USACE's NEPA Regulations. Federal policies are discussed under Section 3.12. Therefore, the focus of the socioeconomic and environmental justice analysis in this EIR/EIS is on the Project's potential to induce substantial population growth, or any potential for displacement of existing population or housing directly or indirectly. NEPA and the U.S. Army Corps of Engineers provide no specific thresholds of significance for socioeconomic impact assessment. Therefore, the significance criteria provided below pertaining to environmental justice and socioeconomic impacts are a combination of population and housing impacts assessed in CEQA Appendix D (Initial Study Checklist) and environmental justice and economic impacts assessed under NEPA.

- **Criterion S1:** Displace substantial numbers of people or housing, necessitating the construction of replacement housing elsewhere.
- **Criterion S2:** Increase demand for permanent housing resulting in increased housing prices and/or decreased vacancy rates.
- **Criterion S3:** Induce substantial population growth, either directly (such as through construction of new homes and businesses) or indirectly (such as through extension of roads or other infrastructure).
- **Criterion S4:** Result in disproportionately high and adverse impacts on minorities and/or low-income populations.
- **Criterion S5:** Result in adverse impacts on the local economy.

Impact Assessment Methodology. The socioeconomic impacts evaluated under Criteria S1-S3 and S5 utilize a qualitative and quantitative approach with respect to population growth and housing availability. With Respect to Criterion S4 (Environmental Justice), environmental impacts were reviewed to determine whether any of the impacts disproportionately affect minority or low-income populations.

4.12.2.1 Proposed Project (Alternative 1)

Displace substantial numbers of people or housing, necessitating the construction of replacement housing elsewhere (Criterion S1).

Impact S-1: Project components could displace a substantial number of people or housing.

As described in Section 2.1.1 (Project Elements), construction of Reach 1 would require the CVWD to obtain 126 total properties, including seven residential properties. Note that the limits of land acquisition depend on the percent of the parcel crossed by the final Project alignment and the temporary construction access needs. If the existing use of any parcel impacted by the Project cannot be maintained, the entire parcel may be acquired. It is anticipated the CVWD would negotiate in good faith with the current landowners to obtain the required properties for a fair market value.

According to the U.S. Census (U.S. Census, 2021) the average household size within the Thousand Palms Census Designated Place (CDP, as defined in Section 3.12) is 2.37 persons. This would mean that the removal of seven homes for installation of the proposed Project would likely displace less than 20 residents of the 7,967 residents (0.2 percent), according to the 2020 U.S. Census data. The Thousand Palms CDP contains a total of 3,728 housing units as of 2020, and a vacancy rate of 30.3 percent. This indicates that there is ample available and existing replacement housing in the area. A removal of seven housing units from the Thousand Palms CDP supply of 3,728 housing units would constitute approximately 0.20 percent reduction in available housing supply. As such, the displacement of seven homes is not considered to be a substantial displacement of people or housing.

CEQA Significance Conclusion

The proposed Project would displace seven homes, or an estimated 20 residents. This constitutes a 0.20 percent reduction in available housing supply and approximately 0.20 percent of the population of the Thousand Palms CDP. As such, implementation of the proposed Project would not displace a substantial number of people or housing (Class III).

Increase demand for permanent housing resulting in increased housing prices and/or decreased vacancy rates (Criterion S2).

Impact S-2: The Project could increase demand for housing.

Construction of the proposed Project would utilize the existing construction workforce within Riverside County (estimated at 117,421, as shown in Table 3.12-3), and would not require the relocation of workers for construction or operation of the proposed Project. Furthermore, as discussed above under Impact S-1, the proposed Project would require the acquisition of seven housing units. It is anticipated that the CVWD would negotiate in good faith with the current landowners to obtain the required properties for a fair market value. As shown in Table 3.12-2 (Housing Characteristics and Trends), the Thousand Palms CDP has an average vacancy rate of 30.3 percent, with 862 vacant housing units in 2019. Therefore, the relocation of seven housing units would not result in decreased vacancy rates.

The proposed Project includes a series of flood control improvements to minimize flooding hazards for developed areas in Thousand Palms. Therefore, it is possible the Project may increase housing values within areas currently not protected from flood hazards without the Project. While the Project may result in a small increase in home values by removing areas from a flood hazard area, this would be an indirect and beneficial impact of the proposed Project. As shown in Table 3.12-2 (Housing Characteristics and Trends), between 2011 and 2019 the median home value in the Thousand Palms CDP has increased from $157,500 to $181,600, a 12.1 percent decrease. Therefore, for homes protected by flood hazards after implementation of the proposed Project, any indirect increase in housing value is not expected to affect overall home price trends within the entire Thousand Palms CDP.

CEQA Significance Conclusion

The proposed Project would not involve the construction of new homes or businesses which could directly result in increased demand for housing. Construction personnel would come from within Riverside County, and O&M activities would be conducted by existing CVWD employees and would not require a substantial increase in staff that could cause increased demand for housing. The proposed Project would involve the acquisition of seven housing units. However, there is ample available housing to accommodate the relocation, as evidenced by the current 30.3 percent vacancy rate within the Thousand Palms CDP. Therefore, impacts related to housing availability and vacancy would be less-than-significant (Class III).

Induce substantial population growth, either directly (such as through construction of new homes and businesses) or indirectly (such as through extension of roads or other infrastructure) (Criterion S3).

Impact S-3: Project components may indirectly induce population growth by protecting non-built out areas from flood hazards.

Direct Growth

As detailed in Section 2 (Project Description), the primary purpose of the proposed Project is to implement a series of flood control improvements to minimize flooding hazards for developed areas in Thousand Palms and does not include the construction of new homes or businesses. As further detailed below under Criterion S4, the proposed Project would remove seven residences, which is only approximately 0.20 percent of the current housing supply in the Thousand Palms CDP. There is ample available housing available within the CDP. Therefore, this amount of housing removal is not considered to directly require new home construction that could directly induce population growth. The proposed Project would also require the CVWD to acquire 118 non-residential properties, the majority of which are currently vacant land. Please see Figure 2-6 (Affected Properties – Reach 1 Alignment) and Figure 2-7 (Affected Properties – Reach 3 Alignment) for maps of properties which would be acquired as part of the proposed Project. As

discussed above under Criterion S2, it is anticipated that the CVWD would negotiate in good faith with current landowners to obtain the required properties or easements for a fair market value. The acquisition of vacant lands would prevent future development and reduce future growth potential.

Construction employment for the proposed Project would include skilled or semi-skilled positions such as laborers, welders, heavy equipment operators, surveyors, engineers, monitors, inspectors, utility equipment workers, truck drivers, warehouse workers, and clerical workers. As described in Section 3.12.1.3 (Employment), there is a substantial construction workforce available throughout the proposed Project area. The proposed Project construction schedule, as detailed in Section 2.2.2 (Construction Schedule), is estimated to require approximately 27 months. As described in Section 3.12.1.3 (Employment), total workforce in natural resources, construction, and maintenance operations available in incorporated Riverside County is 117,421 persons. It is anticipated that the majority of the required construction workforce would come from this Riverside County workforce and would not need to temporarily or permanently relocate to the Thousand Palms area. Therefore, Project construction would not directly induce population growth.

Operation and maintenance of the proposed Project would be conducted by a small number of existing CVWD employees as part of the CVWD overall facilities O&M program and would utilize workers currently residing inside or within the vicinity of the Thousand Palms CDP. Therefore, proposed Project construction would not directly induce population growth.

Indirect Growth

Although the proposed Project would not directly result in population growth in the Project area, its implementation would remove future obstacles to population growth by reducing flood risk to future developments; however, mild population growth is expected to occur with or without implementation of the proposed Project. Both locally and regionally, the proposed Project area is not experiencing substantial population growth, as detailed in Section 3.12.1.1 (Population). The population within the Thousand Palms CDP increased 5.1 percent between 2011 and 2020. This population growth is less than the 12.2 percent growth experienced by Riverside County during the same period.

The majority of the vacant land that would be removed from flood hazards as a result of the proposed Project is designated within the Riverside County General Plan as Rural Residential, Medium Density Residential, and Very Low Density Residential. However, the areas below Reach 4 are zoned as Very High Density Residential as part of Riverside County Specific Plan 338 – Mirasera. Construction of the Mirasera development has not begun although Specific Plan 338, and the associated EIR, were approved in 2006. The current status of the Mirasera development is unknown. Construction of the Mirasera development is not dependent on the proposed Project, as the Specific Plan and EIR were approved with mitigation measures and flood control requirements (Stantec, 2006) and could proceed without the proposed Project being constructed.

Other areas below Reach 4, where the batch plant would be sited, are part of Riverside County Specific Plan 360 – Valanté. Construction of the Valanté development, which would add approximately 460 units, is dependent on approval and construction of the proposed Project. The current status of the Valanté development is unknown; however, it is assumed construction of any residences would not begin until construction of the proposed Project is completed. As discussed in the Specific Plan, the Valanté development would not be constructed until the drainage facility (proposed Project) is constructed. This specific plan would add a sizeable amount of housing to the Thousand Palms area, increasing the total housing supply from 3,728 to 4,188 housing units (a 12.34 percent increase). The Thousand Palms CDP currently has approximately 862 vacant housing units, resulting in a 30.3 percent vacancy rate. In the event the Valanté project were built, the addition of 460 homes would result in a vacancy rate of 35.5

percent. Therefore, it is currently speculative to assume this housing project would still be constructed once the proposed Thousand Palms Flood Control Project is constructed. Current vacancy rates indicate there may not be demand for the proposed 460 homes. Additionally, it should be noted the Valanté Specific Plan was approved by the County of Riverside in June 2009. Therefore, any direct growth from the construction of these homes has been approved by the County and assumed within County growth projections for the Thousand Palms area since 2009. Therefore, while Specific Plan 360 has tied development of the Valanté housing project to the proposed Thousand Palms Flood Control Project, construction of the proposed Project is not considered to indirectly induce population growth (whether Valanté is built or not) at a level considered substantial enough to result in adverse impacts (as any indirect population growth would be within projections for the Thousand Palms area).

Implementation of the proposed Project would remove areas from the FEMA Flood Hazard area; however, development and population growth in these regions has been ongoing without the installation of proposed Project (as shown in Section 3.12, Tables 3.12-1 and 3.12-2).

CEQA Significance Conclusion

As discussed above, the proposed Project would not involve the construction of new homes or businesses which could directly result in substantial population growth. Construction personnel would come from Riverside County, and O&M activities would be conducted by existing CVWD employees and would not require a substantial increase in staff which could cause substantial population growth. The Thousand Palms area has undergone less growth than greater Riverside County in the past years, and the mild population growth is expected to continue with or without construction of the proposed Project. While the proposed Project would remove obstacles for development by removing areas from FEMA Flood Hazard Areas, development within these areas is currently not prohibited, and has continued to proceed without the proposed Project. Any increase in development after the proposed Project is constructed would be subject to County of Riverside zoning, building codes, growth projections, and land use planning. The potential population growth, and associated impact, which could occur by the proposed Project removing the flood hazard risk would be less than significant (Class III).

Result in disproportionately high and adverse impacts on minorities and/or low-income populations (Criterion S4).

Impact S-4: Project effects could be disproportionately borne by minority or low-income populations.

As discussed above under Section 3.12.2 (Environmental Baseline – Environmental Justice), the localized study area for environmental justice is the Thousand Palms CDP. Table 3.12-5 (Minority and Low-Income Populations) shows that the Thousand Palms CDP contains a lower percent (9.9 percent) of low-income population than greater Riverside County (10.4 percent) as a whole. Therefore, no disproportionate impacts to low-income population would occur.

The Thousand Palms CDP contains 51.3 percent minority population, which is a slightly less than Riverside County as a whole (64.7 percent). Therefore, an analysis of potential disproportionate impacts to minority populations is warranted.

As discussed under significance criteria SOC1 through SOC3, the proposed Project would require the acquisition of 126 total properties, including seven housing units. The CVWD would negotiate in good faith with the current landowners to obtain the required properties for a fair market value. The removal of these properties associated with the proposed Project would not require relocations outside the Thousand Palms CDP. However, the alignment of the proposed flood control facility has been selected to minimize impacts to existing land uses while providing best engineering practices and meeting the objectives of the Project. Therefore, because the objective of the proposed Project is to protect the

Thousand Palms area from flooding hazards, residential or business relocations are not considered to disproportionately impact minority populations.

The Project would result in adverse impacts, which include:

- **Impact AS-1:** The Project could cause an adverse effect to a scenic vista.
- **Impact AS-2:** The Project could degrade the existing visual character or quality of the site and its surroundings.
- **Impact AQ-3:** Project construction emissions could exceed SCAQMD regional significance thresholds.
- **Impact AQ-6:** Project construction emissions could exceed SCAQMD Localized Significance Thresholds.
- **Impact L-3:** Construction of the Project could permanently disrupt or displace existing residential, business, educational, and recreational land uses.
- **Impact N-4:** Project construction could result in substantial temporary increase in ambient noise levels above levels existing without the Project.
- **Impact TR-2:** Project construction trips and activities could substantially decrease effectiveness for the performance of the local roadway system.

As discussed in each respective section of this EIR/EIS, all the above impacts are temporary (construction-related) except for the visual and land use impacts of the proposed Project.

Construction Impacts. During construction, all population within the immediate Project area and the Thousand Palms area would be subject to the temporary adverse impacts identified above. Therefore, while the Thousand Palms CDP contains 51.3 percent minority population, these temporary adverse impacts during construction are not considered to be disproportionate burdened by minority or low-income populations because all persons within the affected area would be temporarily subject to them equally. Additionally, construction impacts would cease after work stops.

Operational Impacts. With respect to adverse visual and land use impacts, the proposed Project would result in long-term adverse impacts only to a small number of affected residences. Those include:

- The levee would cause adverse visual impacts for residences located close to the Reach 1 levee, as well as for recreationalists. The racial and income profile specifically for these impacted residences or persons is not known and may be subject to change over the lifespan of the Project. Therefore, visual impacts associated with the Project are not considered disproportionate to minority or low-income persons.
- The proposed Project would require the acquisition of 126 total properties, including seven housing units. The racial and income profile of only these impacted residences or persons is not known. The CVWD would negotiate in good faith with the current landowners to obtain the required properties for a fair market value. Such agreed purchases would not be considered to constitute an adverse impact. However, while potentially impacted persons may be minority or low-income persons, the potential impact is not considered to disproportionately impact such persons. The need to acquire such properties is based on required design of the proposed Project and need for flood control protection at the Project location. As such, minority or low-income persons potentially affected by land acquisition is random, based on engineering needs/design of the flood control levee. Therefore, land use impacts associated with the proposed Project are not considered disproportionate to minority or low-income persons.

While the proposed Project may result in unmitigable impacts on the environment as described above, the primary purpose of the proposed Project is for the benefit of the Thousand Palms CDP, by alleviating

the flood hazard risks present in the area. As such, the proposed Project would result in a net benefit for the local community, including any minority or low-income population.

ECs and Mitigation Measures Applicable to Impact S-4

All ECs and mitigation measures presented within this EIR/EIS are applicable to Impact S-4 as they reduce potential environmental impacts.

CEQA Significance Conclusion

Environmental Justice is not required under CEQA. Therefore, no CEQA significance conclusion is presented.

Result in adverse impacts on the local economy (Criterion S5).

Impact S-5: Project implementation could result in community economic effects.

Beneficial economic and tax base impacts would occur during construction of the Project resulting from the worker wages and salaries, the procurement of goods and services required for Project construction, and sales taxes generated from goods and services purchased by Project workers.

As discussed in Impact S-3, the proposed Project is not expected to directly or indirectly affect future housing or business development of the Thousand Palms area. While the proposed Project would result in the acquisition and relocation of seven residential properties, ample available residential units are available within the Thousand Palms area. Therefore, the relocation of these residences would not have an adverse impact on the local economy. The Project would also require the purchase of 126 properties including the seven residences, both entirely and/or partially, which would result in total or partial loss of existing and potential future businesses within these locations. Please see Figure 2-8 (Alternative 2 Alignment) and Figure 2-9 (Alternative 3a and 3b Alignments) for an illustration of the properties which would be acquired. As discussed in Section 4.8 (Land Use and Recreation), these purchases (either through fair market negotiations or use of eminent domain) are expected to provide the landowners and businesses with the financial ability to relocate any existing or future uses within the Thousand Palms area. As such, these displacements are not expected to have an adverse effect on the Thousand Palms economy as a whole.

The proposed Project could be funded by a variety of sources. Likely funding sources include development fees for new residential development south of the Project (proposed Valanté, Mirasera, and other development), federal and State grants, and stormwater/property taxes within the CVWD service area. Utilizing these likely sources to fund the Project are not expected to have any adverse impacts to the local economy.

CEQA Significance Conclusion

An economic analysis is not required under CEQA. Therefore, no CEQA significance conclusion is presented.

4.12.2.2 Removal of Reach 2 (Alternative 2)

Displace substantial numbers of people or housing, necessitating the construction of replacement housing elsewhere (Criterion S1).

Impact S-1: Project components could displace a substantial number of people or housing.

Construction activities for Alternative 2 would be similar to the proposed Project and would require CVWD to obtain seven residential properties within the impacted area of Reach 1. The removal of Reach 2 under this alternative would not change this displacement impact. However, as stated for the proposed Project, the removal of seven homes would displace a small proportion (approx. 0.20 percent) of residents, and,

similarly, would constitute a small reduction in available housing supply (0.20 percent). This would not be considered a substantial displacement of people or housing.

CEQA Significance Conclusion

Same as the proposed Project, Alternative 2 would displace seven homes, or an estimated 20 residents, which is about 0.20 percent of the population and a 0.20 percent reduction in available housing supply. Therefore, Alternative 2 would not displace a substantial number of people or housing (Class III).

Increase demand for permanent housing resulting in increased housing prices and/or decreased vacancy rates (Criterion S2).

Impact S-2: The Project could increase demand for housing.

Similar to the proposed Project, construction of Alternative 2 would utilize the existing construction workforce within Riverside County, thereby not requiring worker relocation. As with the proposed Project, while this alternative would require the removal of seven housing units it is anticipated that the landowners would receive fair market value compensation from the CVWD, and this removal would not decrease vacancy rates for Thousand Palms CDP, whose average vacancy rate is approximately 30.3 percent as of 2019.

Housing values within areas that would be protected by Alternative 2 may increase, similar to the effect described for the proposed Project. However, this would be an indirect impact, and as the median home value in the Thousand Palms CDP has dropped approximately 15 percent in recent years, any potential indirect increase in housing value is not expected to affect overall home price trends in the region.

CEQA Significance Conclusion

Alternative 2 would not involve construction of new homes or businesses which could increase local housing demand. Existing local construction personnel and CVWD employees would be used for construction and O&M activities. Acquisition of seven housing units would not noticeably decrease housing availability given the current vacancy rate in the Thousand Palms CDP. Therefore, impacts related to housing availability and vacancy would be less-than-significant (Class III).

Induce substantial population growth, either directly (such as through construction of new homes and businesses) or indirectly (such as through extension of roads or other infrastructure) (Criterion S3).

Impact S-3: Project components may indirectly induce population growth by protecting non-built out areas from flood hazards.

Direct Growth

Same as the proposed Project, Alternative 2 would require the removal of seven residences, and would not construct any new homes or businesses that could directly induce population growth. Alternative 2 would also require acquisition of 116 non-residential properties; these properties are on currently vacant land and landowners would be compensated with fair market value by the CVWD. The acquisition of vacant lands would prevent future development and reduce future growth potential.

Furthermore, all construction and O&M employment for Alternative 2 would be the same as the proposed Project and sourced from the existing workforce in Riverside County. Considering to the Project schedule (approximately 27 months or less with Removal of Reach 2), and the availability of a local workforce for construction and O&M activities, temporary or permanent relocation to the Thousand Palms area would not be anticipated. Therefore, Alternative 2 construction would not directly induce population growth.

Indirect Growth

While Alternative 2 would not directly result in population growth in the Project area, it would remove future development obstacles by reducing flood risk below Reaches 1, 3, and 4. Regardless, mild growth in the area is expected whether or not the Project proceeds due to current population growth trends for the Thousand Palms CDP.

CEQA Significance Conclusion

Alternative 2 would not involve the construction of new homes or businesses and construction and O&M personnel would be locally sourced from Riverside County or CVWD employees. Therefore, Alternative 2 would not directly cause population growth. While this alternative would remove areas from FEMA Flood Hazard areas, it would not instigate an increase in development as development in these areas is not currently prohibited and has continued to proceed without the Project. Therefore, any impacts from possible population growth that could occur due to Alternative 2 would be less than significant (Class III).

Result in disproportionately high and adverse impacts on minorities and/or low-income populations (Criterion S4).

Impact S-4: Project effects could be disproportionately borne by minority or low-income populations.

Alternative 2 would be in the Thousand Palms CDP, same as the proposed Project, such that impacts to minority or low-income populations would essentially be the same. The Thousand Palms CDP contains a lower percent of low-income population than greater Riverside County as a whole; and therefore, would not disproportionately impact low-income populations. However, the Thousand Palms CDP has a larger minority population than Riverside County as a whole such that possible disproportionate impacts to minority populations could occur. The objective of the Project is to protect residents from flooding hazards; therefore, residential or business relocations are not considered to disproportionately impact minority populations. Furthermore, the alignment of the flood control facility under Alternative 2 would reduce adverse effects to existing properties due to the reduction in required properties.

Alternative 2 would result in other construction-related impacts, but these would be temporary. As all populations within the immediate Project area would be subject to these temporary adverse impacts, they are not considered as an environmental justice impact as they would not solely affect the minority population. As described for the proposed Project, the adverse visual impacts AS-1 and AS-2 for Alternative 2 would be long-term as they would obstruct foreground views of the desert landscape and cause a visual obstruction for residences near the Reach 1 levee as well as for recreationalists, same as the proposed Project. Again, the racial profile of the impacted residences is not known and may change over the lifespan of the Project. Like the proposed Project, Alternative 2 may have unmitigable impacts on the environment, but would consequently result in a net benefit for the local community, including minority and low-income populations, by alleviating flood hazard risks for the area.

ECs and Mitigation Measures Applicable to Impact S-4

All ECs and mitigation measures presented within this EIR/EIS are applicable to Impact S-4 as they reduce potential environmental impacts.

CEQA Significance Conclusion

Environmental Justice is not required under CEQA. Therefore, no CEQA significance conclusion is presented.

Result in adverse impacts on the local economy (Criterion S5).

Impact S-5: Project implementation could result in community economic effects.

Alternative 2 would be expected to have essentially the same economic and tax base impacts during construction as the proposed Project. This alternative is also not expected to directly or indirectly affect future housing or business development in the Thousand Palms area. While this alternative does require purchase of 116 non-residential properties, which would result in total or partial loss of existing and potential future businesses in these locations, land owners and business would be provided the financial ability to relocate existing or future uses within the Thousand Palms area. As such, these displacements are not expected to have an adverse effect on the Thousand Palms economy as a whole.

Alternative 2 would be funded by the same sources as the proposed Project. Similarly, the overall cost of Alternative 2 would have essentially the same effects on local CVMWD ratepayers as the proposed Project. Based on the analysis provided above, Alternative 2 would not have adverse economic effects on the Thousand Palms area.

CEQA Significance Conclusion

An economic analysis is not required under CEQA. Therefore, no CEQA significance conclusion is presented.

4.12.2.3 Modified Reach 3 (Alternative 3)

Displace substantial numbers of people or housing, necessitating the construction of replacement housing elsewhere (Criterion S1).

Impact S-1: Project components could displace a substantial number of people or housing.

Construction activities for Alternative 3 would be similar to the proposed Project and would require CVWD to obtain seven residential properties within the impacted area of Reach 1. The two possible realignments of Reach 3 under this alternative would not change this displacement impact. However, as stated for the proposed Project, the removal of seven homes would displace a small proportion (approx. 0.2 percent) of residents, and, similarly, would constitute a small reduction in available housing supply (0.20 percent). This would not be considered a substantial displacement of people or housing.

CEQA Significance Conclusion

Same as the proposed Project, Alternative 3 would displace seven homes, or an estimated 20 residents, which is about 0.2 percent of the population and a 0.20 percent reduction in available housing supply. Therefore, Alternative 3 would not displace a substantial number of people or housing (Class III).

Increase demand for permanent housing resulting in increased housing prices and/or decreased vacancy rates (Criterion S2).

Impact S-2: The Project could increase demand for housing.

Similar to the proposed Project, construction of Alternative 3 would utilize the existing construction workforce within Riverside County, and thus would not require worker relocation. As with the proposed Project, while this alternative would require the removal of seven housing units it is anticipated that the landowners would receive fair market value compensation from the CVWD, and this removal would not decrease vacancy rates for Thousand Palms CDP, whose average vacancy rate is approximately 30.3 percent as of 2019.

Housing values within areas that would be protected by Alternative 3 may increase, similar to the effect described for the proposed Project. However, this would be an indirect impact, and as the median home value in the Thousand Palms CDP has dropped approximately 15 percent in recent years, any potential indirect increase in housing value is not expected to affect overall home price trends in the region.

CEQA Significance Conclusion

Alternative 3 would not involve construction of new homes or businesses which could increase local housing demand. Existing local construction personnel and CVWD employees would be used for construction and O&M activities. Acquisition of seven housing units would not noticeably decrease housing availability given the current vacancy rate in the Thousand Palms CDP. Therefore, impacts related to housing availability and vacancy would be less-than-significant (Class III).

Induce substantial population growth, either directly (such as through construction of new homes and businesses) or indirectly (such as through extension of roads or other infrastructure) (Criterion S3).

Impact S-3: Project components may indirectly induce population growth by protecting non-built out areas from flood hazards.

Direct Growth. Same as the proposed Project, Alternative 3 would require the removal of seven residences, and would not construct any new homes or businesses that could directly induce population growth. Alternative 3 would also require acquisition of approximately 119 non-residential properties; these properties are on currently vacant land and landowners would be compensated with fair market value by the CVWD. Therefore, this non-residential removal would also not require any new construction that could induce population growth.

Furthermore, all construction and O&M employment for Alternative 3 would be the same as the proposed Project and sourced from the existing workforce in Riverside County. Considering the Project schedule (approximately 27 months — anticipated to be the same as proposed Project), and the availability of a local workforce for construction and O&M activities, temporary or permanent relocation to the Thousand Palms area would not be anticipated. Therefore, Alternative 3 construction would not directly induce population growth.

Indirect Growth. While Alternative 3 would not directly result in population growth in the Project area, it would remove future development obstacles by reducing flood risk below Reaches 1-4. Regardless, mild growth in the area is expected whether or not the Project proceeds to current population growth trends for the Thousand Palms CDP.

CEQA Significance Conclusion

Alternative 3 would not involve the construction of new homes or businesses and construction and O&M personnel would be locally sourced from Riverside County or CVWD employees. Therefore, Alternative 3 would not directly cause population growth. While this alternative would remove areas from FEMA Flood Hazard areas, it would not instigate an increase in development as development in these areas is not currently prohibited and has continued to proceed without the Project. Therefore, any impacts from possible population growth that could occur due to Alternative 3 would be less than significant (Class III).

Result in disproportionately high and adverse impacts on minorities and/or low-income populations (Criterion S4).

Impact S-4: Project effects could be disproportionately borne by minority or low-income populations.

Alternative 3 would be in the Thousand Palms CDP, same as the proposed Project, such that impacts to minority or low-income populations would essentially be the same. The Thousand Palms CDP contains a lower percent of low-income population than greater Riverside County as a whole; and therefore, would not disproportionately impact low-income populations. However, the Thousand Palms CDP has a larger minority population than Riverside County as a whole such that possible disproportionate impacts to minority populations could occur. However, the racial profile of impacted residents is not known. The objective of the Project is to protect residents from flooding hazards; therefore, residential or business relocations are not considered to disproportionately impact minority populations. Furthermore, the alignment of the flood control facility under Alternative 3 would minimize impacts to existing properties.

Alternative 3 would result in other construction-related impacts, but these would be temporary. As all populations within the immediate Project area would be subject to these temporary adverse impacts, they are not considered as an environmental justice impact as they would not solely affect the minority population.

As described for the proposed Project, the adverse visual impacts AS-1 and AS-2 for Alternative 3 would be long-term as they would obstruct foreground views of the desert landscape and cause a visual obstruction for residences near the Reach 1 levee as well as for recreationalists, same as the proposed Project. Again, the racial profile of the impacted residences is not known and may change over the lifespan of the Project. Like the proposed Project, Alternative 3 may have unmitigable impacts on the environment, but would consequently result in a net benefit for the local community, including minority and low-income populations, by alleviating flood hazard risks for the area.

ECs and Mitigation Measures Applicable to Impact S-4

All ECs and mitigation measures presented within this EIR/EIS are applicable to Impact S-4 as they reduce potential environmental impacts.

CEQA Significance Conclusion

Environmental Justice is not required under CEQA. Therefore, no CEQA significance conclusion is presented.

Result in adverse impacts on the local economy (Criterion S5).

Impact S-5: Project implementation could result in community economic effects.

Alternative 3 would be expected to have the same economic and tax base impacts during construction as the proposed Project. This alternative is also not expected to directly or indirectly affect future housing or business development in the Thousand Palms area. While this alternative does require purchase of 119 non-residential properties, which would result in total or partial loss of existing and potential future businesses in these locations, land owners and business would be provided the financial ability to relocate existing or future uses within the Thousand Palms area. As such, these displacements are not expected to have an adverse effect on the Thousand Palms economy as a whole.

Alternative 3 would be funded by the same sources as the proposed Project. Similarly, the overall cost of Alternative 3 would have essentially the same effects on local CVMWD ratepayers as the proposed Project. Based on the analysis provided above, Alternative 3 would not have adverse economic effects on the Thousand Palms area.

CEQA Significance Conclusion

An economic analysis is not required under CEQA. Therefore, no CEQA significance conclusion is presented.

4.12.2.4 No Action (Alternative 4)

Under the No Action Alternative, construction O&M of the Project would not occur. This would continue to allow potentially catastrophic flooding to threaten the Thousand Palms region, which could result in greater disturbance to natural flows, erosion, housing, and infrastructure in developed areas and expose residents to higher flooding risk.

As this alternative would continue to expose residents to risk of a 100-year flood event, future flooding could negatively impact unprotected residential development and potentially displace a substantial number of people or housing, depending on the severity of the damage. This potential displacement would be far greater in extent compared to the proposed Project. However, these impacts would not be disproportionately borne by low-income populations or minority populations as the population of Thousand Palms CDP would remain at the current risk of flood under the No Action alternative. As the severity of future flood events, and their associated damage is unknown, it is uncertain if future flooding would disproportionately affect minority or low-income populations.

4.12.3 Impact Summary – Socioeconomics

Table 4.12-2 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to socioeconomics. Refer to Section 4.12.2 (Environmental Consequences) for the entire environmental analysis, the entirely of Chapter 4 for the full text of recommended mitigation measures, and Table 2-4 for the full text of environmental commitments.

Table 4.12-2. Summary of Impacts and Mitigation Measures – Socioeconomics

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
S-1: Project components could displace a substantial number of people or housing.	Class III	Class III	Class III	None required.
S-2: The Project could increase demand for housing.	Class III	Class III	Class III	None required.
S-3: Project components may indirectly induce population growth by protecting non-built out areas from flood hazards.	Class III	Class III	Class III	None required.
S-4: Project effects could be disproportionately borne by minority or low-income populations.	N/A	N/A	N/A	None required.
S-5: Project implementation could result in community economic effects.	N/A	N/A	N/A	None required.

N/A: **Not Applicable.** The impact is not a CEQA impact; provided to address federal requirements under the National Environmental Policy Act.

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.13 Transportation

This section focuses on the potential of the Thousand Palms Flood Control Project (Project) and alternatives to adversely impact the capacity of the existing street system; impede the flow of pedestrians, bicycles, or emergency service vehicles; result in roadway hazards; or result in damage to roadways during both construction and maintenance of the Project. Potential impacts related to adopted policies, plans, or programs supporting alternative transportation are also evaluated.

4.13.1 Issues Identified During Scoping

Table 4.13-1 below provides a list of transportation issues raised as part of the scoping process for the EIR/EIS (See Appendix A, Public Scoping). The table also includes a brief discussion of the applicability of each issue to the environmental analysis and where that issue is addressed in the EIR/EIS.

Table 4.13-1. Scoping Issues Relevant to Transportation

Comment	Consideration in the EIR/EIS
County of Riverside Transportation and Land Management Agency, Transportation Department	
Stated that if the Project encroaches upon or utilizes County Road rights-of-way an encroachment permit will be required, and that a traffic control plan may also be required for construction traffic.	All required permits would be obtained for the Project (see Table 2-9). See Mitigation Measure TR-2 (Traffic Control Plan for Lane Closures and Detours).

4.13.2 Environmental Consequences

Significance Criteria. To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the Project and alternatives. Appropriate criteria have been identified and utilized to make these significance conclusions. The following significance criteria for transportation were derived from reviewing CEQA Appendix G, the regulatory framework presented in Section 3.13.2, and the predicted traffic impacts associated with the Project. Issues related to airports and associated safety hazards are addressed in Section 4.11 (Public Safety). Impacts are considered significant if the Project or alternatives would:

- **Criterion TR1:** Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- **Criterion TR2:** Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b).
- **Criterion TR3:** Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- **Criterion TR4:** Result in inadequate emergency access.

Impact Assessment Methodology – Temporary and Permanent Vehicle Trip Volumes

VMT is a measure used in transportation planning for a variety of purposes. It measures the amount of travel for all vehicles in a geographic region over a given period of time. VMT is calculated by adding up all the miles driven by all the cars and trucks on all the roadways in a region. This metric plays an integral role in the transportation planning, policymaking, and revenue estimation processes due to its ability to indicate travel demand and behavior. Per CEQA Guidelines section 15064.3, subdivision (b), a VMT analysis under CEQA may be based on the following:

- Qualitative Analysis: If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle

miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

- Methodology: A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgement based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.

A qualitative analysis for VMT has been conducted. Furthermore, this analysis utilizes the following for Project operational trips:

- For freeways, Project-related increases in average daily traffic (ADT) volumes are quantitatively analyzed ("with Project" percent increase over baseline volumes) at the nearest freeway segments to the Project area. The quantitative analysis considers worst-case trip generation (during maximum construction periods) and average traffic during construction.
- For local roadways, a qualitative analysis based on predicted Project-related trips volumes is provided. This is because ADT volumes are not available for all affected local roadways during both construction and maintenance of the Project. Furthermore, while the predicted construction routes are provided, construction sequencing, material needs/timing (water trucks, cement trucks, etc.), and other factors make temporary trip distribution assignments on these local access roads overly speculative. The qualitative analysis considers worst-case trip generation (during maximum construction periods) and average traffic during construction.

Construction Traffic

The following provides estimated trip generation and predicted travel routes associated with the proposed Project for both the regional (freeway) and localized (street) transportation network.

Regional Daily Trips (Freeway)

During construction, both workers and trucks would utilize the I-10 freeway to access the Project area. Trucks would require freeway travel to deliver materials (e.g., asphalt, aggregate, and rip rap) and equipment, as well as to transport waste from the site. However, it is assumed some haul trucks would park overnight within construction staging areas and fuel locally. Therefore, only a portion of the total construction vehicle fleet would utilize I-10 daily to access the work areas. Table 4.13-2 provides estimated daily trip volumes on I-10 during construction under both the maximum and average construction periods.

Table 4.13-2. Regional (Freeway) Project Generated Traffic – Construction

	Daily Traffic Volumes		
Scenario	**Trucks**	**Autos/Light-Duty Vehicles**	**Total**
Maximum (Worst-Case)[1]			
Round Trips	175	40	215
One-way Trips	350	80	430
Average[2]			
Round Trips	14	30	44
One-way Trips	28	60	88

1 - Maximum daily traffic is assumed to occur during Reach 3 Channel construction, when the CCGC Inlet and Outlet Structures are also being constructed simultaneously, where that overlap is predicted to last approximately 30 days.
2 - Average daily traffic assumes all traffic trips divided by the 542 days of active construction.

Localized Daily Trips (Street)

In order to construct the channels, a number of localized trips must occur between the Reaches and staging area. Approximately 600,000 cubic yards of material would be removed from Reach 4 and transported and placed in the sand disposal area (described in Section 2.2.2). Material to construct the other levees would be provided by pushing local material into a berm or utilizing borrowed material from the Reach 3 channel. Cement for soil cement, concrete, asphalt, etc. would be provided by the contractor likely from the nearest local supplier. A concrete batch plant would be constructed to support the proposed Project and located south of Reach 4 within the spoils area. Excavated material that is deemed unsuitable for distribution on the wind corridor, cleared and grubbed materials, stumps, trash, etc. would be transported to the appropriate local landfill or recycling center.

The spoils area and the concrete batch plant would be located south of Avenue 38, and staging areas for the proposed Project would be located within the temporary disturbance areas, or within the spoil and batch plant site. As discussed in Section 2.2.2, to the maximum extent practicable, construction-related disturbance including staging areas and temporary storage areas would be limited to the Project's permanent footprint as shown on Figures 2-1 through 2-3 (Reach Alignments). Previously disturbed (paved) sites that are located outside temporary disturbance areas may be used for staging or parking of construction worker personal vehicles, only if agreed upon with the property owner and where such use would not result in any land disturbance.

The predicted localized routes for construction traffic are shown in Figure 4.13-1 (Construction Traffic Routes). As shown, these roads include Varner Road, Rio Del Sol Road, Sierra Del Sol, Desert Moon Drive, Via Las Palmas, E. Ramon Road, Shadow Valley Drive, Avenue 38, Washington Street, as well as local connector roads, as needed.

Table 4.13-3 provides maximum and average daily trip generation on the local roadways during construction of the proposed Project. As shown, the proposed Project would generate a maximum total of 2,340 vehicle trips per day. This worst-case daily traffic would occur when overlap of construction activities is greatest (occurring for approximately one month of the total 1.5-year construction period). Also shown in Table 4.13-3 is the average daily traffic on local roadways during construction. It is assumed that truck trips would be spread out evenly over a 12-hour workday.

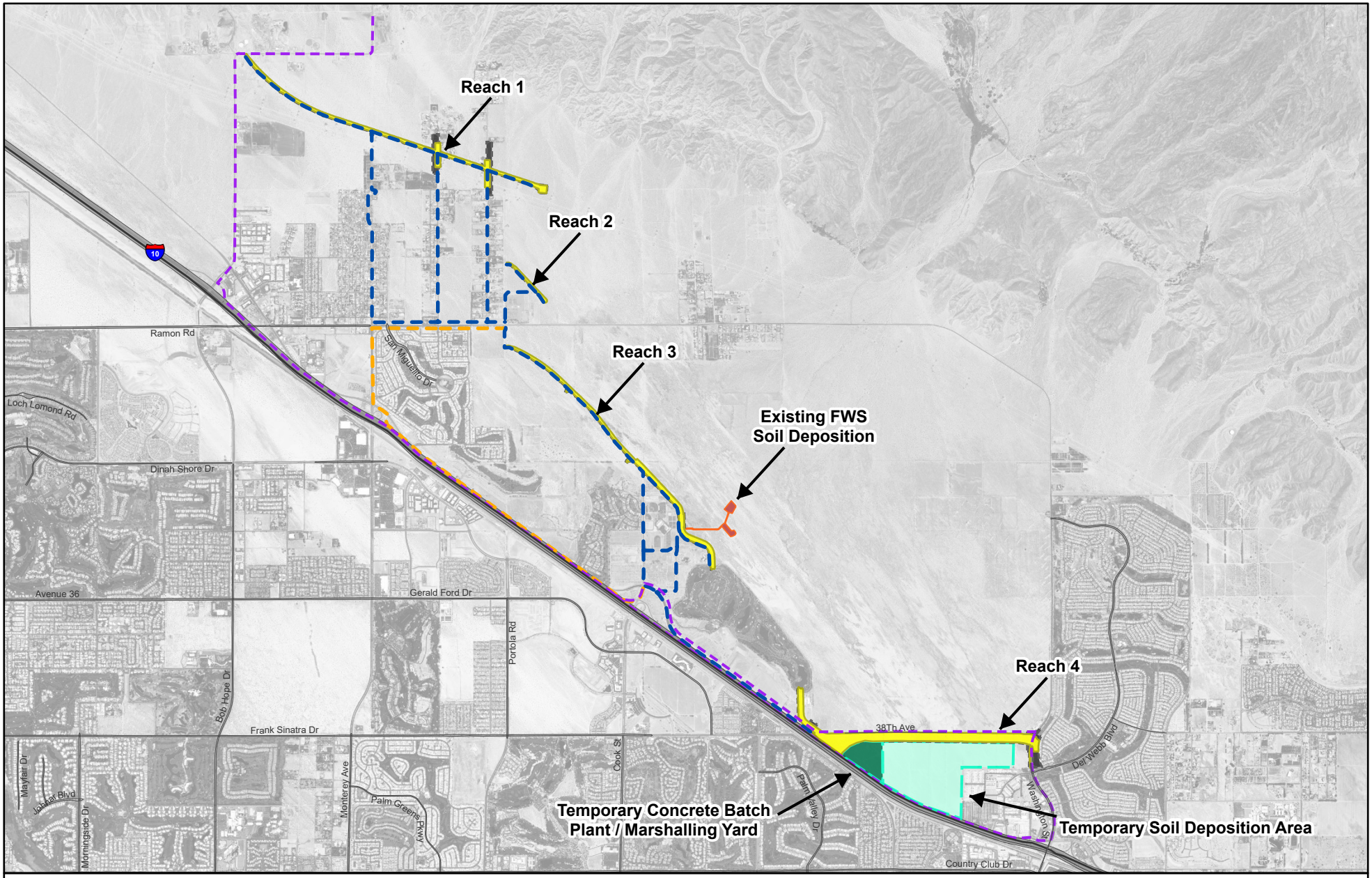


Figure 4.13-1

Construction Traffic Routes

Table 4.13-3. Localized (Street) Project Generated Traffic – Construction			
	Daily Traffic Volumes		
Scenario	Trucks	Autos/Light-Duty Vehicles	Total
Maximum (Worst-Case)[1]			
Round Trips	1,075	95	1,170
One-way Trips	2,150	190	2,340
Average[2]			
Round Trips	254	75	329
One-way Trips	508	150	658

1 - Maximum daily traffic is assumed to occur during Reach 3 Channel construction, when the CCGC Inlet and Outlet Structures are also being constructed simultaneously, where that overlap is predicted to last approximately 30 days.
2 - Average daily traffic assumes all traffic trips divided by the 542 days of active construction.

Operation and Maintenance Traffic

To maintain the proposed flood control channel, the CVWD would conduct periodic sand removal, repair, and vegetation removal. O&M activities would include the removal of sand from the levees and channels to ensure sand migration through the existing wind corridor is not disrupted and that the sand dune habitat of the Preserve continues to be replenished. The assumed route of sand removal maintenance traffic is shown in Figure 4.13-2 (Operation and Maintenance Traffic Routes).

Table 4.13-4 provides maximum daily trip generation during Project operation. As shown, the Project would generate a maximum total of 156 vehicle trips per day. This worst-case daily traffic occurs during sand removal of Reaches 3 and 4 (approximately 60 days per year) and is used within the operational traffic analysis. It should be noted that additional O&M trips would occur throughout the year but would be less than this worst-case scenario. It is assumed that truck trips would be spread out evenly over a 12-hour working day.

Table 4.13-4. Localized Project Generated Traffic – Operation and Maintenance			
	Daily Traffic Volumes		
Scenario	Trucks	Autos/Light-Duty Vehicles	Total
Maximum (Worst-Case) [1]			
Round Trips	75	3	78
One-way Trips	150	6	156

1 - Maximum daily operation traffic occurs during the Reach 3 and Reach 4 Channel sand removal that happens approximately 55 to 60 days per year.

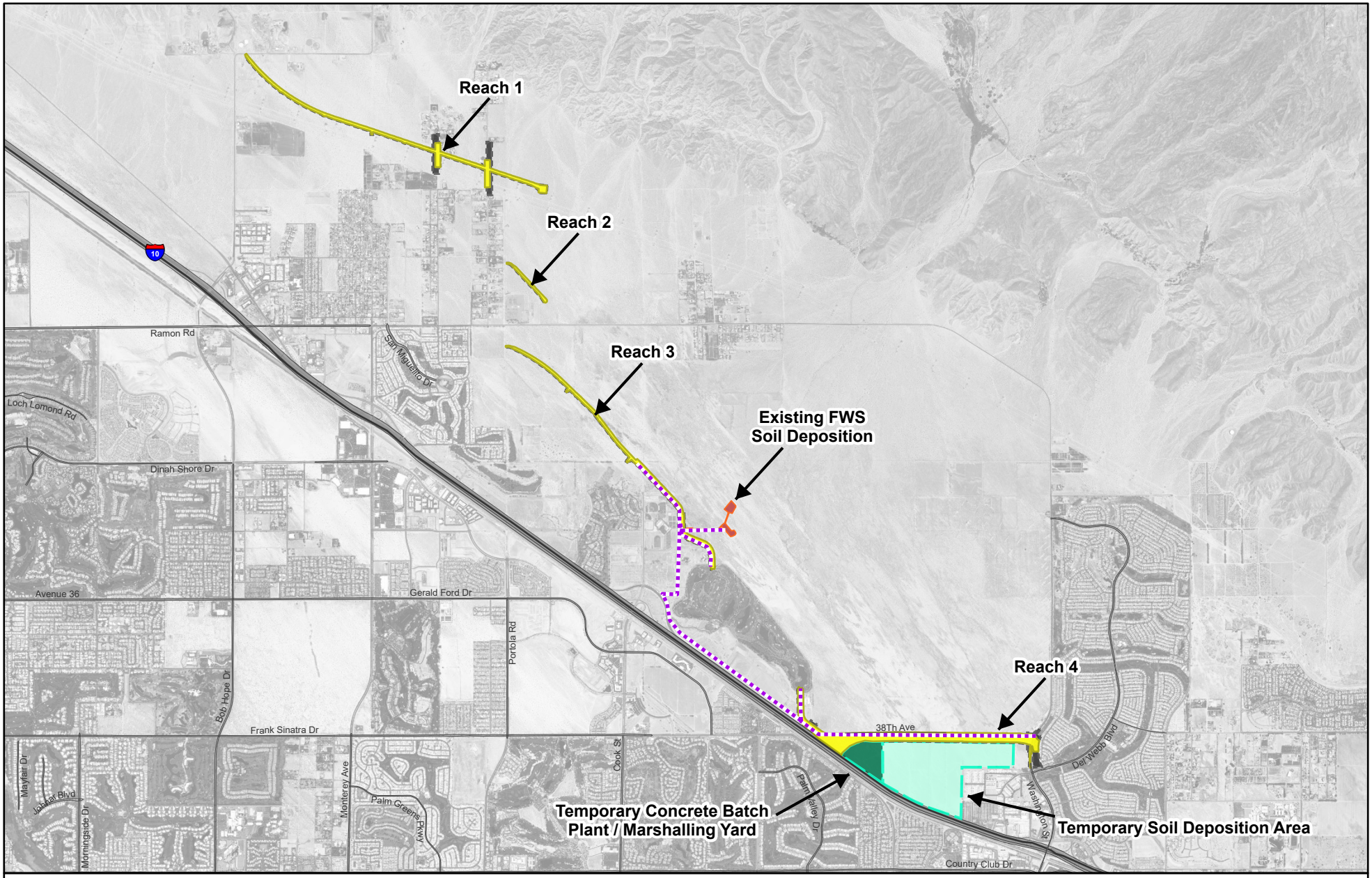


Figure 4.13-2

Operation and Maintenance Traffic Routes

4.13.2.1 Proposed Project (Alternative 1)

Direct and Indirect Effects Analysis

Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities (Criterion TR1).

Because the Riverside County General Plan, SCAG Regional Comprehensive Plan and the Regional Transportation Plan, and Caltrans LD-IGR Program pertain to general performance of the circulation system (freeways and local roads, as analyzed under Impacts TR-1 and TR-2, respectively), there are two primary categories of traffic and transportation impacts that have been evaluated for the proposed Project:

1. The first category is the impacts associated with construction traffic on highways and public roads. Additionally, this analysis includes any temporary disruption to traffic, pedestrian, and bicycle circulation associated with temporary disruptions or closures to travel lanes and roadway damage.
2. The second category of impacts involves vehicle trips associated with O&M of the proposed Project after construction is complete. This issue focuses on trips from sand removal, distribution, or disposal.

Impact TR-1: The Project could substantially decrease effectiveness or the performance of the freeway system.

Construction Impacts

Based on the construction plan detailed in Section 2 (Project Description), the anticipated levels of Project-generated construction traffic under a worst-case and average daily scenario are shown earlier in Tables 4.13-2 and 4.13-3.

Workers and some truck trips would utilize I-10 to access the Project work area on a daily basis. These trips are all expected to come from within the Coachella Valley, Palm Springs, and Thousand Palms area. As shown in Table 4.13-2, the volume of Project-generated temporary traffic on I-10 under a worst-case scenario would be 430 vehicle trips per day (80 passenger vehicle and 350 heavy truck trips) and 88 vehicle trips per day (60 passenger vehicle and 28 heavy truck trips) on average. The following provides an analysis of adding these trips to I-10 near the Project area:

- **ADT – Peak Construction Periods**: When maximum daily construction trips (430 trips) are added to the ADT volumes of I-10 (shown in Table 3.13-1), Project-generated trips would result in a 0.4 to 0.5 percent temporary increase over existing ADT volumes (which range between 99,000 and 86,000 vehicles.
- **ADT – Average Construction Periods:** When average daily construction trips (88 trips) are added to the ADT volumes of I-10 (shown in Table 3.13-1), Project-generated trips would result in a 0.09 to 0.1 percent temporary increase over existing ADT volumes (which range between 99,000 and 86,000 vehicles).
- **Peak Hour Traffic**: All employee and an estimated 33percent of daily truck trips are estimated to occur on I-10 during the peak period (7:00 to 9:00 A.M. and 4:00 to 6:00 P.M.). This results in an estimated 196 peak hour trips under a worst-case construction scenario. When these maximum daily peak hour trips are added to the ADT peak hour volumes of I-10 (shown in Table 3.13-1), Project-generated trips would result in a 2.2 to 2.5 percent temporary increase over existing peak hour volumes (which range between 9,000 and 7,800 vehicles). Average construction periods result in 49 peak hour trips per day, resulting in a 0.5 to 0.6 percent temporary increase over existing peak hour volumes.

- **Truck Traffic**: As provided in Section 3.13, truck traffic on I-10 nearest the Project site (Jefferson Street/Indio Boulevard) accounts for 32.5 percent of the ADT volume. As shown in Table 3.13-1, the nearest segment of I-10 to Jefferson Street/Indio Boulevard is Washington Street, which has an ADT volume of 84,000 vehicles per day. That results in 27,950 truck trips per day along this portion of I-10. When the maximum Project generation of 350 daily trucks trips are added to the ADT truck volume, Project-generated truck trips would result in a 1.3 percent temporary increase over existing ADT truck volumes. Average daily truck trips of 28 trips per day result in a negligible temporary increase (0.1 percent) over existing ADT truck volumes on I-10.

As discussed above, worst-case temporary trip volumes from Project construction would generate only minor short-term increases to ADT volumes on I-10. None of the increases are found to be at a level that could impede the performance of I-10. As provided in Table 4-2, implementation of EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would ensure the Project minimizes peak hour trips on I-10.

Operation and Maintenance Impacts

During peak maintenance activities, most truck trips shown in Table 4.13-4 represent those between Reaches 3 and 4 and the sand transport area. As discussed, the peak maintenance period would only occur for 55 to 60 days per year. Minimal operational traffic volumes would require travel on I-10 to access the Project area for maintenance purposes. Similar to construction, most trucks used for sand transport and other activities would remain within or near the Project site during the maintenance period. Based on the maintenance trips shown in Table 4.13-4, on a daily basis, a conservative estimate of 46 trips (6 passenger vehicle and up to 40 truck trips) would utilize I-10 (likely during the peak hours) to access the maintenance work area. When these daily trips are added to the ADT and peak hour volumes of I-10 (shown in Table 3.13-1), Project-generated trips would result in a negligible temporary increase over existing ADT volumes. These trips would result in a 0.5 to 0.6 percent temporary increase over existing peak hour volumes (which range between 9,000 and 7,800 vehicles). Therefore, the temporary addition of maintenance trips would not adversely impact performance of I-10.

ECs and Mitigation Measures Applicable to Impact TR-1

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

CEQA Significance Conclusion

Construction and maintenance-related trips would not decrease performance levels on I-10. To further reduce performance impacts to I-10, the implementation of EC T-2 would reduce peak hour trips on this freeway. Impacts to freeways from the proposed Project would be less-than-significant (Class III).

Impact TR-2: Project construction trips and activities could substantially decrease performance of the local roadway system.

The predicted local travel routes to access Project work areas are shown in Figure 4.13-1. As shown in Table 4.13-3, under a worst-case scenario the volume of Project-generated temporary traffic would be 2,340 vehicle trips per day (190 passenger vehicle and 2,150 heavy truck trips). On average, 658 vehicle trips per day (150 passenger vehicle and 508 heavy truck trips) would occur. During the worst-case scenario, local roadways accessing Reach 3 work areas would contain the majority of daily trips. However, trips are expected to potentially occur on all local roadways identified in Figure 4.13-1 during peak and average construction periods.

While baseline traffic volumes are not available for all affected local roadways, the ADT volumes shown in Table 3.13-2 indicate both maximum and average daily trip volumes occurring during construction would result in substantial increases compared to existing ADT volumes on the local roadway network.

During all construction periods, daily construction truck trips are expected to have an adverse impact on the performance of the local circulation system identified in Figure 4.13-1, with impacts greatest during peak construction periods and on rural residential roadways. While this impact would be temporary, the Project is expected to have an unavoidable adverse impact for the full construction period, resulting in increased travel times and delays on affected local roadways.

As discussed in Table 2-4, EC T-1 (Implement Standard Construction Practices and Safety Precautions) and EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would be implemented. However, Mitigation Measure TR-1 (Construction and Maintenance Traffic Management Plan) is proposed to add specific requirements necessary to further reduce the impacts associated with trip generation during construction. This measure requires implementation of a Traffic Management Plan to reduce truck trips during peak travel hours and other traffic control measures to reduce impacts to roadway performance and motorists. Additionally, this measure addresses Project-generated traffic during construction include travel through residential areas and adjacent to the Xavier College Preparatory High School, which could substantially decrease performance of the local roadways near the school should construction occur during the school year. To ensure impacts to the school are minimized, Mitigation Measure TR-1 recommends mandatory use of a designated travel route to access Reaches 2 and 3 during construction (shown as "Mitigated Route" in Figure 4.13-1).

Construction of the Project would also require temporary closure of Avenue 38 for realignment and temporary lane/road closures to Via Las Palmas, Washington Boulevard, and other roadways. These temporary disruptions would result in decreased performance of the roadway. As discussed in Table 2-4, EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would be implemented. However, Mitigation Measure TR-2 (Traffic Control Plan for Lane Closures and Detours) is proposed to add specific requirements necessary to further reduce the impacts associated with temporary roadway or lane closures during construction. This measure requires implementation of a Traffic Control Plan for lane closures and detours.

Several roadways shown in Figure 4.13-1 are generally narrow, rural, residential streets with both sign controlled and uncontrolled intersections. The presence of haul trucks on these streets would result in decreased traffic flow, particularly when haul trucks would be traveling in opposite directions simultaneously on a narrow roadway segment or at an intersection. Due the amount of Project-related heavy truck trips on these local roads that do not typically have such heavy truck trips, the presence of haul trucks would be a nuisance to the affected residents and businesses. This impact is considered to decrease overall performance of the local roadway system. As discussed in Table 2-4, EC T-1 (Implement Standard Construction Practices and Safety Precautions) and EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would be implemented. Mitigation Measure TR-3 is proposed to further reduce such temporary impacts from Project-related construction traffic (particularly truck trips).

ECs and Mitigation Measures Applicable to Impact TR-2

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

MM TR-1 **Construction and Maintenance Traffic Management Plan.** A Construction and Maintenance Traffic Management Plan shall be prepared and subject to review, approval, and inspection by the County of Riverside Transportation Department and/or Caltrans (for highway segments). The Plan shall cover traffic generated during both construction and maintenance activities. The Plan shall include, but not be limited to, such measures as:

- Designated haul routes for trucks, ensuring the construction haul routes accessing Reach 2 (if applicable) and Reach 3 work areas are limited to using Varner Road, Monterey Avenue, and East Ramon Road only. This mitigated route is shown within EIR/EIS Figure 4.13-2;

- All means to ensure truck traffic avoids residential and community center areas to the greatest extent feasible;
- All means to ensure VMT for all construction-related trips is reduced to the greatest extent feasible;
- Means to ensure carpooling is encouraged;
- Designated site access locations;
- Driveway turning restrictions;
- Temporary traffic controls and/or flaggers;
- Signage on residential roadway segments warning of frequent heavy truck trips;
- Signage to alert motorists to temporary or limited access points to adjacent properties; appropriate barricades for road closures; construction speed limit signage along the haul route; and parking restrictions during construction;
- Provisions for ensuring detours or safe movement of pedestrians and bicycles through all affected roadways;
- Designated parking/staging locations for workers and equipment;
- All means to control construction traffic by adhering to the guidelines contained in Standard Specifications for Public Works Construction used by many municipalities in California; and Caltrans' Traffic Manual, Chapter 5, "Manual of Traffic Controls for Construction and Maintenance Work Zones," and applicable County of Riverside Transportation Department requirements. These guidelines provide methods to minimize construction effects on traffic flow; and
- Ensuring that at-least daily street sweeping for spills would occur.

MM TR-2 **Traffic Control Plan for Lane Closures and Detours.** A Construction Area Traffic Control Plan for Lane Closures and Detours shall be prepared for the closure, partial closure, and/or realignment of Avenue 38; road crossings over the Reach 1 Levee at Via Las Palmas and at Desert Moon Drive; potential closures of travel lanes on Washington Boulevard, and potentially temporary disruptions to vehicle or pedestrian/bicycle movements on affected public roadways. The plan would include, but not be limited to such features as warning signs, detour signs, lights, barricades, cones/delineators, concrete barriers, temporary traffic signals, flaggers, and accommodations for bicycle and pedestrian circulation, and shall follow Part 6 of the California Manual on Uniform Traffic Control Devices (latest edition). This Plan (or Plans) shall be subject to review, approval, and inspection by the County of Riverside Transportation Department.

MM TR-3 **Notification to Property Owners and Tenants.** Prior to construction, the Project proponent and/or its contractor shall provide a minimum of 48-hours advance written notification to affected property owners and tenants along the local truck routes to inform them about the scheduling and duration of the trucking activities and coordinate any special access or circulation concerns. Prior to the first year of maintenance activities, the Project proponent and/or its contractor shall ensure affected residences and businesses along the haul route have a contact phone number to report any concerns or questions regarding annual maintenance trucking activities and coordinate any special access or circulation concerns.

CEQA Significance Conclusion

Temporary construction-related trips and activities would significantly decrease performance levels of utilized local roadways over existing conditions. With implementation of proposed ECs and mitigation measures, impacts during construction would be less than significant (Class II).

Impact TR-3: Project maintenance trips could substantially decrease performance of the local roadway system.

Based on the maintenance plan detailed in Section 2 (Project Description), the anticipated maximum (worst-case) level of Project-generated maintenance traffic are shown in Table 4.13-4. These maximum trips occur during sand removal within Reaches 3 and 4 and the transport of removed sediment to the sand transport area.

The predicted travel routes for peak maintenance trips are shown in Figure 4.13-2. As shown in Table 4.13-4, under a worst-case scenario the volume of Project-generated temporary maintenance traffic would be 156 vehicle trips per day (6 passenger vehicle and 150 heavy truck trips). The addition of maximum daily trip volumes is not expected to result in substantial increases compared to existing traffic volumes on the affected local roadway network but would temporarily include heavy truck trips on these roadways. While the peak maintenance period would only occur approximately 55 to 60 days per year, the addition of heavy truck trips may result in increased travel times and delays on affected local roadways. Furthermore, haul trips could result in spills on the streets and roadways along the haul routes. As discussed in Table 2-4, EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would be implemented. Mitigation Measures TR-1 and TR-3 are proposed to add specific requirements necessary to further reduce such temporary adverse impacts from Project-related maintenance traffic (particularly truck trips).

ECs and Mitigation Measures Applicable to Impact TR-3

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-3 (Notification to Property Owners and Tenants)

CEQA Significance Conclusion

Impacts from temporary maintenance-related trips and activities would be reduced to a less-than-significant level with implementation of proposed ECs and mitigation measures (Class II).

Impact TR-4: Construction activities which result in roadway disruption, use, or improvements could conflict with alternative transportation plans.

The Riverside County Transportation Commission (RCTC) plans and implements transportation and transit improvements for the Project area. A search of RCTC transit plans found that no roadways affected by the proposed Project are included within short-term or long-term transit plans (Riverside County, 2020). Therefore, the proposed Project would have no impact on transit plans for the area.

As shown in Figure 4.13-2, the maintenance truck route terminates at Washington Street (from Avenue 38), with temporary maintenance activities and trips not expected to affect or utilize Washington Street. Therefore, maintenance of the proposed Project would have no impact to bicycle movements on Washington Street.

Based on a review of the Western Coachella Valley Area Plan, Washington Street, Varner Road, and Ramon Road are designated Class I Bikeways (see Figure 3.8-4, Recreational Resources) (Riverside County, 2021). Other roadways affected by the proposed Project do not contain any planned bicycle facilities. As discussed in Impact TR-2, construction of the proposed Project would require temporary closure of Washington Boulevard. Furthermore, construction and maintenance of the proposed Project would include truck trips in volumes that could potentially result in temporarily impeding bicycle movements and increase conflicts with motorists. As discussed in Table 2-4, EC T-1 (Implement Standard Construction Practices and Safety Precautions) and EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would be implemented. Mitigation Measures TR-1 and TR-2 would further reduce temporary conflicts with alternative transportation plans.

ECs and Mitigation Measures Applicable to Impact TR-4

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

CEQA Significance Conclusion

Construction of the Project would require temporary closure and disruptions to Washington Street, which contains a Class I bikeway designated within the Western Coachella Valley Area Plan (see Figure 3.8-4). With the incorporation of EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-2, potential impacts to bicycle movements on this roadway would be reduced to a less-than-significant level during construction (Class II).

Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b) (Criterion TR2).

Impact TR-5: Construction or operation could result in excessive VMT.

Construction. The proposed Project would result in temporary traffic trips during construction. Truck trips associated with common materials and equipment deliveries would likely come from within the Palm Springs and greater Riverside County area. Many temporary workers needed for construction are expected to reside within a 60–90-minute drive time of the sites. This assumption is based on observations that construction workers would come from inside a reasonable commute area or seek temporary housing proximate to the work area.

As shown in Tables 4.13-2 and 4.13-2, construction of the Project would include a peak of 430 daily trips on freeways and 2,340 daily trips on local roads. Per CEQA Guidelines Section 15064.3(b.3), a qualitative VMT analysis of construction trips is appropriate. Due to the location of the Project, excessive VMT is not expected to access the site. All construction-related truck trips would be temporary and only in volumes necessary to deliver equipment and materials to the site. No unnecessary travel would be allowed. Upon completion of construction, all truck trips and worker commute trips would cease. At this time, no known applicable VMT thresholds of significance for temporary construction trips that may indicate a significant impact are known. Mitigation Measure TR-1 requires the Applicants to prepare a Construction Traffic Control Plan for review by affected jurisdictions, with the Plan providing means to encourage or provide ridesharing opportunities for construction workers and to reduce VMT whenever feasible. Therefore, while the proposed Project would include temporary construction trips that may temporarily increase VMT of the area, Mitigation Measure TR-1 and EC T-2 would seek to reduce VMT and is presumed to cause a less than significant transportation impact.

Operation. Once constructed, operation and maintenance of the Project would generate 156 daily vehicle trips. This worst-case daily traffic occurs during sand removal of Reaches 3 and 4 (approximately 60 days per year). The California Office of Planning and Research has developed screening thresholds to indicate when a detailed VMT analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact. Therefore, because these trips would only occur for 60 days per year, the Project would not result in long-term or permanent trips in excess of this threshold. Project operation and maintenance would not result in a significant increase in VMT of the local area.

ECs and Mitigation Measures Applicable to Impact TR-5

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following measure:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

CEQA Significance Conclusion

Construction and O&M of the proposed Project would not generate VMT that could be considered inconsistent with State or local guidelines and policy related to VMT. Implementation of EC T-2 and Mitigation Measure TR-1 would ensure VMT is reduced. This impact would be less than significant (Class II).

Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (Criterion TR3).

Impact TR-6: Construction or operation could increase hazards due to a design feature or incompatible use or otherwise result in unsafe conditions on public roads.

Construction Impacts

Project construction would temporarily disrupt travel lanes or roadways and include heavy truck trips that could increase conflicts with passenger motorists, bicyclists, and pedestrians. Furthermore, construction could result in damage to road surfaces, shoulders, and curbs, and sand could spill into paved roadway areas. As discussed in Table 2-4, EC T-1 (Implement Standard Construction Practices and Safety Precautions) and EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would be implemented. Mitigation Measures TR-1 through TR-3 and TR-4 are recommended to further reduce potential adverse impacts related to roadway hazards and conflicts. Mitigation Measure TR-1 specifically recommends use of a mitigated truck route to avoid truck movements adjacent to Xavier College Preparatory High School.

Operational and Maintenance Impacts

The Project requires the following new public roadways and reconstruction to existing public roadways:

- Reach 1 of the proposed Project would intersect a collector street called Via Las Palmas. At Via Las Palmas, a public road would be constructed over the levee to maintain access north and south of the levee. The access road would be 20 feet wide with a 10 percent grade, designed for motor vehicle traffic at speeds of approximately 35 miles per hour.
- A public road would also be constructed over Reach 1 at Desert Moon Drive. This road would be 20 feet wide with a 10 percent grade and designed for motor vehicle traffic at speeds of approximately 25 miles per hour.

- Avenue 38 would be realigned as part of the initial construction effort to avoid having to cross the Reach 4 channel and to provide flood protection to Avenue 38.
- A new roadway would be constructed over Reach 3 near Xavier High School. This road would provide access to the sand disposal area (shown in Figure 4.13-2), where windblown sand which collects in Reach 4 would be recycled back into the wind corridor.
- At Washington Street, the Project would include construction of a conveyance system to direct stormwater flows under Washington Street and into an existing stormwater conveyance system with the capacity to transmit Project-related flows, which may require additional road widening.

All new roadways and road improvements would be subject to County of Riverside Transportation Department Design Standards and require permits and approvals from the County of Riverside Transportation Department. Adherence to these design standards and any conditions of approval would ensure safe public use of these new and reconstructed roadways.

As discussed above in Impact TR-3, while the peak maintenance period would only occur approximately 55 to 60 days per year, the addition of heavy truck trips may result in conflicts to motorists and local residents, could potentially result in impeding emergency vehicles, pavement damage and spills on the streets and roadways along the haul routes resulting in an unsafe condition. As discussed in Table 2-4, EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would be implemented. Mitigation Measures TR-1 and TR-3 through TR-5 would reduce such temporary adverse impacts from Project-related maintenance traffic (particularly truck trips).

ECs and Mitigation Measures Applicable to Impact TR-6

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

MM TR-3 (Notification to Property Owners and Tenants)

MM TR-4 **Pavement Rehabilitation**. Prior to both construction and maintenance, the CVMWD shall enter into a Maintenance Agreement with the County of Riverside Transportation Department to ensure all necessary pavement rehabilitation required to restore affected roadways to pre-construction and pre-maintenance condition or better occurs. The Project proponent and/or its contractor shall conduct a before-and-after evaluation of pavement conditions along the earthen material haul routes to document any damage caused by the haul truck activities. The documentation shall include written descriptions and photographs of pre-activity and post-activity pavement conditions. Any pavement or other infrastructure damage caused by Project activities and/or haul trucks shall be repaired/rehabilitated to pre-Project conditions or better.

CEQA Significance Conclusion

Necessary roadway improvements and the movement of heavy trucks on roadways during construction and maintenance activities could potentially result in roadway hazards. EC T-1, EC T-2, and Mitigation Measures TR-1 through T-4 are proposed to reduce or avoid such impacts. With the incorporation of this mitigation, unsafe conditions on roadways resulting from the proposed Project would be reduced to a less-than-significant level (Class II).

Impact TR-7: Project activities could result in damage to roads.

As discussed above in Impacts TR-2 and TR-3, construction, and maintenance activities (including heavy truck trips), may result in pavement damage and spills on the streets and roadways along the haul routes. As discussed in Table 2-4, EC T-1 (Implement Standard Construction Practices and Safety Precautions) and EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would be implemented. Mitigation Measures TR-1 and TR-4 would further reduce adverse impacts related to roadway damage.

ECs and Mitigation Measures Applicable to Impact TR-7

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following measure:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

See Impact TR-6 for the full text of the following measure:

MM TR-4 (Pavement Rehabilitation)

CEQA Significance Conclusion

Construction activities and the movement of heavy trucks on roadways during construction and maintenance could potentially result in roadway damage. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-4 are proposed to reduce or avoid such impacts. With the incorporation of this mitigation, roadway damage impacts resulting from the proposed Project would be reduced to a less-than-significant level (Class II).

Impact TR-8: Project construction may require temporary roadway disruptions.

As discussed above in Impact TR-2, construction of the proposed Project would require temporary closure of Avenue 38 for realignment and temporary lane/road closures to Via Las Palmas, Washington Boulevard, and other roadways. As discussed in Table 2-4, EC T-1 (Implement Standard Construction Practices and Safety Precautions) and EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would be implemented. Mitigation Measures TR-1 and TR-2 are proposed to further reduce the impacts associated with temporary roadway or lane closures during construction. This measure requires implementation of a Traffic Control Plan for lane closures and detours.

ECs and Mitigation Measures Applicable to Impact TR-8

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

CEQA Significance Conclusion

Construction of the proposed Project would require temporary closure and disruptions to roads and/or travel lanes. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-2 are proposed to reduce or avoid such impacts. With the incorporation of this mitigation, potential impacts from temporary closure and disruptions to roads and/or travel lanes would be reduced to a less-than-significant level (Class II).

Result in inadequate emergency access (Criterion TR4).

Impact TR-9: Construction or operation could temporarily restrict access to or from adjacent land uses and/or restrict the movements of emergency vehicles with no reasonable alternative access routes.

As discussed above in Impacts TR-2 and TR-3, construction of the proposed Project would require temporary closure of Avenue 38 for realignment and temporary lane/road closures to Via Las Palmas, Washington Boulevard, and other roadways. Additionally, construction and maintenance of the Project would include truck trips in volumes that could potentially result in impeding emergency vehicles. As discussed in Table 2-4, EC T-1 (Implement Standard Construction Practices and Safety Precautions) and EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would be implemented. Mitigation Measures TR-1, TR-2, and TR-5 would further reduce access restrictions resulting from Project-related activities and traffic (particularly truck trips).

ECs and Mitigation Measures Applicable to Impact TR-9

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

MM TR-5 Coordinate with Emergency Service Providers. Prior to construction, the Project proponent and/or its contractor shall coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) to provide information regarding haul routes, construction schedules, lane closures, etc. and to develop a plan to maintain or accommodate essential emergency access routes. Prior to the first year of maintenance activities, the Project proponent and/or its contractor shall ensure emergency service provider locations (police and fire) nearest the haul route have a contact phone number to report any concerns or questions regarding annual maintenance trucking activities and coordinate any special access or circulation concerns.

CEQA Significance Conclusion

Construction and maintenance of the proposed Project would require temporary closure and disruptions to roads and/or travel lanes and truck trips that could temporarily impede emergency vehicle movements. With the incorporation of EC T-1, EC T-2, and Mitigation Measures TR-1, TR-2, and TR-5, potential impacts to emergency vehicle access and movements would be reduced to a less-than-significant level (Class II).

4.13.2.2 Removal of Reach 2 (Alternative 2)

Direct and Indirect Effects Analysis

Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities (Criterion TR1).

Impact TR-1: The Project could substantially decrease performance of the freeway system.

Implementation of Alternative 2 would construct only Reaches 1, 3, and 4 (Figure 2-8, Alternative 2 Alignment). Construction activities and timing would be essentially the same as described for the pro-

posed Project, except that Reach 2 would not be constructed. O&M activities associated with Alternative 2 would also be the same, except that sand removal activities would not occur along Reach 2.

Construction Impacts

Same as the proposed Project, the worst-case scenario day for daily traffic is assumed to occur during Reach 3 Channel construction, when the CCGC Inlet and Outlet Structures are also being constructed simultaneously. This worst-case scenario day would occur under this alternative, as Reach 3 and the Inlet and Outlet Structures would also be constructed. As discussed in detail above for the proposed Project, worst-case temporary trip volumes from Project construction would generate only minor short-term increases to ADT volumes on I-10. None of the increases are found to be at a level that could impede the performance of I-10. As provided in Table 4-2, implementation of EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would ensure the Project minimizes peak hour trips on I-10.

Operation and Maintenance Impacts

Same as the proposed Project, peak trips associated with maintenance activities would occur between Reaches 3 and 4 and the sand transport area. Minimal operational traffic volumes would require travel on I-10 to access the Project area for maintenance purposes. Maintenance trips associated with Alternative 2 are not expected to exceed those shown in Table 4.13-4, on a daily basis, as the removal of Reach 2 would not increase the amount of maintenance activities required. The temporary increase over existing peak hour volumes caused by maintenance trips would not adversely impact performance of I-10.

ECs and Mitigation Measures Applicable to Impact TR-1

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

CEQA Significance Conclusion

Similar to the proposed Project, Alternative 2 construction and maintenance-related trips would not decrease performance levels on I-10. To further reduce performance impacts to I-10, EC T-2 would reduce peak hour trips on this freeway such that impacts to freeways would be less-than-significant (Class III).

Impact TR-2: Project construction trips and activities could substantially decrease performance of the local roadway system.

Trips are expected to potentially occur on all local roadways identified in Figure 4.13-1 during peak and average construction periods, except for Vista De Oro and the access road north of the substation due to the removal of Reach 2. The volume of trips which could result from Alternative 2 would not exceed the proposed Project due to the reduced construction activities. As shown in Table 4.13-3 for the proposed Project, during the worst-case scenario, local roadways accessing Reach 3 work areas would contain most of the daily trips and would also occur under Alternative 2.

During all construction periods for Reaches 1, 3 and 4, daily construction truck trips are expected to have an adverse impact on the performance of the local circulation system identified in Figure 4.13-1, with impacts greatest during peak construction periods and on rural residential roadways. Impacts would include increased traffic; temporary road closures, including Avenue 38, Via Las Palmas, Washington Boulevard, and other roadways; and decreased traffic flow, particularly when haul trucks travel in opposite directions simultaneously on a narrow roadway segment or at an uncontrolled intersection. While this impact would be temporary, Alternative 2 is expected to have an unavoidable adverse impact for the full construction period, which is anticipated to be essentially the same duration

as the proposed Project even with the removal of Reach 2, resulting in increased travel times and delays on affected local roadways. EC T-1, EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage), and Mitigation Measures TR-1 through TR-3 would reduce the impacts to the performance of the local roadway system.

ECs and Mitigation Measures Applicable to Impact TR-2

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

MM TR-3 (Notification to Property Owners and Tenants)

CEQA Significance Conclusion

Temporary construction-related trips and activities would significantly decrease performance levels of utilized local roadways over existing conditions. With the implementation of proposed ECs and mitigation measures, impacts would be less than significant (Class II).

Impact TR-3: Project maintenance trips could substantially decrease performance of the local roadway system.

The anticipated maximum level of proposed Project-generated maintenance traffic is shown in Table 4.13-4. Maintenance traffic for Alternative 2 is not expected to exceed the level of the proposed Project due to the reduced construction footprint with the elimination of Reach 2. The predicted travel routes for Alternative 2 would be similar to those shown in Figure 4.13-2, with the exception of the routes to the Reach 2 location which would not be utilized. Same as the proposed Project, Alternative 2 would increase the maximum daily trip volume in the local area; however, it is not expected to result in substantial increases compared to existing traffic volumes on the affected local roadway network but would temporarily include heavy truck trips on these roadways. While the peak maintenance period would only occur approximately 55 to 60 days per year, the addition of heavy truck trips may result in increased travel times and delays on affected local roadways. Furthermore, haul trips could result in spills on the streets and roadways along the haul routes. EC T-2 and Mitigation Measures TR-1 and TR-3 would reduce temporary adverse impacts to the local roadway system from Project-related maintenance traffic (particularly truck trips).

ECs and Mitigation Measures Applicable to Impact TR-3

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-3 (Notification to Property Owners and Tenants)

CEQA Significance Conclusion

Impacts from temporary maintenance-related trips and activities under Alternative 2 would be reduced to a less-than-significant level with implementation of proposed ECs and mitigation measures (Class II).

Impact TR-4: Construction activities which result in roadway disruption, use, or improvements could conflict with alternative transportation plans.

As discussed above for the proposed Project, Washington Street, Varner Road, and Ramon Road are designated Class I Bikeways (see Figure 3.8-4) (Riverside County, 2021). Other roadways which would be affected by Alternative 2 do not contain any planned bicycle facilities. As discussed in Impact TR-2, construction would require temporary closure of Washington Boulevard. Furthermore, construction and maintenance of Alternative 2 would include truck trips in volumes that could potentially result in temporarily impeding bicycle movements and increase conflicts with motorists. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-2 would reduce temporary conflicts with alternative transportation plans.

While the peak maintenance period would only occur approximately 55 to 60 days per year during the construction of Reach 3, same as the proposed Project, the addition of heavy truck trips may result in conflicts with bicyclists and pedestrians during the long-term operation of Alternative 2. EC T-1, EC T-2, and Mitigation Measures TR-1 through TR-4 would reduce temporary impediments to pedestrian and bicycle movements.

ECs and Mitigation Measures Applicable to Impact TR-4

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

MM TR-3 (Notification to Property Owners and Tenants)

See Impact TR-6 for the full text of the following measure:

MM TR-4 (Pavement Rehabilitation)

CEQA Significance Conclusion

Construction and maintenance activities, including heavy truck trips, may result in conflicts with bicyclists and pedestrians. With the incorporation of EC T-1, EC T-2, and Mitigation Measures TR-1 through TR-4, potential impacts to bicycle and pedestrian movements would be reduced to a less-than-significant level (Class II).

Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b) (Criterion TR2).

Impact TR-5: Construction or operation could result in excessive VMT.

Construction and operation of Alternative 2 would generate similar or identical temporary VMT as the proposed Project. Therefore, while Alternative 2 would include temporary construction trips that may temporarily increase VMT of the area, Mitigation Measure TR-1 and EC T-2 would seek to reduce VMT and is presumed to cause a less than significant transportation impact. Furthermore, because maintenance trips would only occur for 60 days per year, Alternative 2 would not result in long-term or permanent trips in excess of this threshold. Operation and maintenance would not result in a significant increase in VMT of the local area.

ECs and Mitigation Measures Applicable to Impact TR-5

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following measure:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

CEQA Significance Conclusion

Construction and O&M of Alternative 2 would not generate VMT that could be considered inconsistent with State or local guidelines and policy related to VMT. Implementation of EC T-2 and Mitigation Measure TR-1 would ensure VMT is reduced. This impact would be less than significant (Class II).

Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (Criterion TR3).

Impact TR-6: Construction or operation could increase hazards due to a design feature or incompatible use or otherwise result in unsafe conditions on public roads.

Similar to the proposed Project, construction and O&M of Alternative 2 would temporarily disrupt travel lanes or roadways and include heavy truck trips that could increase conflicts with passenger motorists, bicyclists, and pedestrians. Furthermore, construction and O&M could result in impediments to emergency vehicles; damage to road surfaces, shoulders, and curbs; and material (e.g., sand) spills onto paved roadway areas. EC T-1, EC T-2, and Mitigation Measures TR-1 through TR-4 would reduce potential unsafe conditions on public roads.

ECs and Mitigation Measures Applicable to Impact TR-6

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

MM TR-3 (Notification to Property Owners and Tenants)

See Impact TR-6 for the full text of the following mitigation measure:

MM TR-4 (Pavement Rehabilitation)

CEQA Significance Conclusion

Necessary roadway improvements and the movement of heavy trucks on roadways during construction and maintenance activities could potentially result in roadway hazards. EC T-1, EC T-2, and Mitigation Measures TR-1 through T-4 are proposed to reduce or avoid such impacts. With the incorporation of these mitigation measures, unsafe conditions on public roadways resulting from Alternative 2 would be reduced to a less-than-significant level (Class II).

Impact TR-7: Project activities could result in damage to roads.

As discussed above in Impacts TR-2 and TR-3, construction, and maintenance activities (including heavy truck trips), may result in pavement damage and spills on the streets and roadways along the haul routes. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-4 would reduce adverse impacts related to roadway damage.

ECs and Mitigation Measures Applicable to Impact TR-7

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following measure:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

See Impact TR-6 for the full text of the following measure:

MM TR-4 (Pavement Rehabilitation)

CEQA Significance Conclusion

Construction activities and the movement of heavy trucks on roadways during construction and maintenance could potentially result in roadway damage. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-4 are proposed to reduce or avoid such impacts. With the incorporation of this mitigation, roadway damage impacts resulting from Alternative 2 would be reduced to a less-than-significant level (Class II).

Impact TR-8: Project construction may require temporary roadway disruptions.

As discussed above in Impact TR-2, construction of Alternative 2 would require temporary closure of Avenue 38 for realignment and temporary lane/road closures to Via Las Palmas, Washington Boulevard, and other roadways. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-2 are proposed to reduce the impacts associated with temporary roadway or lane closures during construction.

ECs and Mitigation Measures Applicable to Impact TR-8

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

CEQA Significance Conclusion

Construction of Alternative 2 would require temporary closure and disruptions to roads and/or travel lanes. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-2 are proposed to reduce or avoid such impacts. With the incorporation of this mitigation, potential impacts from temporary closure and disruptions to roads and/or travel lanes would be reduced to a less-than-significant level (Class II).

Result in inadequate emergency access (Criterion TR4).

Impact TR-9: Construction or operation could temporarily restrict access to or from adjacent land uses and/or restrict the movements of emergency vehicles with no reasonable alternative access routes.

As discussed above in Impacts TR-2 and TR-3, construction of Alternative 2 would require temporary closure of Avenue 38 for realignment and temporary lane/road closures to Via Las Palmas, Washington Boulevard, and other roadways. Additionally, construction and maintenance of Alternative 2 would include truck trips in volumes that may result in increased travel times and delays on affected local roadways (see Impact TR-1), which could potentially result in impeding emergency vehicles. EC T-1, EC T-2, and Mitigation Measures TR-1, TR-2, and TR-5 would reduce access restrictions resulting from Alternative 2 related activities and traffic (particularly truck trips).

ECs and Mitigation Measures Applicable to Impact TR-9

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

See Impact TR-8 for the full text of the following mitigation measures:

MM TR-5 (Coordinate with Emergency Service Providers)

CEQA Significance Conclusion

Construction and maintenance of Alternative 2 would require temporary closure and disruptions to roads and/or travel lanes and truck trips that could temporarily impede emergency vehicle movements. With the incorporation of EC T-1, EC T-2, and Mitigation Measures TR-1, TR-2, and TR-5, potential impacts to emergency vehicle access and movements would be reduced to a less-than-significant level (Class II).

4.13.2.3 Modified Reach 3 (Alternative 3)

Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities (Criterion TR1).

Impact TR-1: The Project could substantially decrease performance of the freeway system.

Implementation of Alternative 3 would construct a modified version of Reach 3 (Figure 2-9, Alternative 3a and 3b Alignments). Reaches 1, 2, and 4 would be implemented as described for the proposed Project. Construction activities and timing would be essentially the same as described for the proposed Project. O&M activities associated with Alternative 3 would also be the same.

Construction Impacts

Same as the proposed Project, the worst-case scenario day for daily traffic is assumed to occur during Reach 3 Channel construction, when the CCGC Inlet and Outlet Structures are also being constructed simultaneously. This worst-case scenario day would occur under this alternative, as Reach 3 and the Inlet and Outlet Structures would be constructed, although the alignment of Reach 3 would be altered slightly. As discussed in detail above for the proposed Project, worst-case temporary trip volumes from Project construction would generate only minor short-term increases to ADT volumes on I-10. None of the increases are found to be at a level that could impede the performance of I-10. As provided in Table 4-2, implementation of EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would ensure the Project minimizes peak hour trips on I-10.

Operation and Maintenance Impacts

Same as the proposed Project, peak trips associated with maintenance activities would occur between Reaches 3 and 4 and the sand transport area. Minimal operational traffic volumes would require travel on I-10 to access the Project area for maintenance purposes. Maintenance trips associated with Alternative 3 are not expected to exceed those shown in Table 4.13-4, on a daily basis, as O&M activities associated with Alternative 3 would be the same as those for the proposed Project. The temporary increase over existing peak hour volumes caused by maintenance trips would not adversely impact performance of I-10.

ECs and Mitigation Measures Applicable to Impact TR-1

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

CEQA Significance Conclusion

Similar to the proposed Project, Alternative 3 construction and maintenance-related trips would not decrease performance levels on I-10. To further reduce performance impacts to I-10, EC T-2 would reduce peak hour trips on this freeway such that impacts to freeways would be less-than-significant (Class III).

Impact TR-2: Project construction trips and activities could substantially decrease performance of the local roadway system.

Trips are expected to potentially occur on all local roadways identified in Figure 4.13-1 during peak and average construction periods for Alternative 3, same as the proposed Project. The volume of trips which could result from Alternative 3 would essentially be the same as the proposed Project.

During all construction periods for Alternative 3, daily construction truck trips are expected to have an adverse impact on the performance of the local circulation system identified in Figure 4.13-1, with impacts greatest during peak construction periods and on rural residential roadways. Impacts would include increased traffic; temporary road closures, including Avenue 38, Via Las Palmas, Washington Boulevard, and other roadways; and decreased traffic flow, particularly when haul trucks travel in opposite directions simultaneously on a narrow roadway segment or at an uncontrolled intersection. While this impact would be temporary, Alternative 3 is expected to have an unavoidable adverse impact for the full construction period, which is anticipated to be essentially the same duration as the proposed Project, resulting in increased travel times and delays on affected local roadways.

EC T-1, EC T-2, and Mitigation Measures TR-1 through TR-3 would reduce the impacts to the performance of the local roadway system.

ECs and Mitigation Measures Applicable to Impact TR-2

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

MM TR-3 (Notification to Property Owners and Tenants)

CEQA Significance Conclusion

Temporary construction-related trips and activities would significantly decrease performance levels of utilized local roadways over existing conditions. With implementation of proposed ECs and mitigation measures, impacts would be less than significant (Class II).

Impact TR-3: Project maintenance trips could substantially decrease performance of the local roadway system.

Alternative 3 would follow the same maintenance plan as the proposed Project. The anticipated maximum level of proposed Project-generated maintenance traffic is shown in Table 4.13-4. The predicted travel routes for Alternative 3 would be similar to those shown in Figure 4.13-2. Similar to the proposed Project, the addition of maximum daily trip volumes is not expected to result in substantial

increases compared to existing traffic volumes on the affected local roadway network but would temporarily include heavy truck trips on these roadways. While the peak maintenance period would only occur approximately 55 to 60 days per year, the addition of heavy truck trips may result in increased travel times and delays on affected local roadways. Furthermore, haul trips could result in spills on the streets and roadways along the haul routes. EC T-2 and Mitigation Measures TR-1 and TR-3 would reduce temporary adverse impacts to the local roadway system from Project-related maintenance traffic (particularly truck trips).

ECs and Mitigation Measures Applicable to Impact TR-3

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-3 (Notification to Property Owners and Tenants)

CEQA Significance Conclusion

Impacts from temporary maintenance-related trips and activities under Alternative 3 would be reduced to a less-than-significant level with implementation of proposed ECs and mitigation measures (Class II).

Impact TR-4: Construction activities which result in roadway disruption, use, or improvements could conflict with alternative transportation plans.

As discussed above for the proposed Project, Washington Street, Varner Road, and Ramon Road are designated Class I Bikeways (see Figure 3.8-4) (Riverside County, 2021). Other roadways which would be affected by Alternative 3 do not contain any planned bicycle facilities. As discussed in Impact TR-2, construction would require temporary closure of Washington Boulevard. Furthermore, construction and maintenance of Alternative 3 would include truck trips in volumes that could potentially result in temporarily impeding bicycle movements and increase conflicts with motorists. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-2 would reduce temporary conflicts with alternative transportation plans.

While the peak maintenance period would only occur approximately 55 to 60 days per year during the construction of Reach 3, which for Alternative 3 is anticipated to be essentially the same as the proposed Project, the addition of heavy truck trips may result in conflicts with bicyclists and pedestrians during the long-term operation of Alternative 3. EC T-1, EC T-2, and Mitigation Measures TR-1 through TR-4 would reduce temporary impediments to pedestrian and bicycle movements.

ECs and Mitigation Measures Applicable to Impact TR-4

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

MM TR-3 (Notification to Property Owners and Tenants)

See Impact TR-6 for the full text of the following mitigation measures:

MM TR-4 (Pavement Rehabilitation)

CEQA Significance Conclusion

Construction and maintenance activities, including heavy truck trips, may result in conflicts with bicyclists and pedestrians. With the incorporation of EC T-1, EC T-2, and Mitigation Measures TR-1 through TR-4, potential impacts to bicycle and pedestrian movements would be reduced to a less-than-significant level (Class II).

Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b) (Criterion TR2).

Impact TR-5: Construction or operation could result in excessive VMT.

Construction and operation of Alternative 3 would generate similar or identical temporary VMT as the proposed Project. Therefore, while Alternative 3 would include temporary construction trips that may temporarily increase VMT of the area, Mitigation Measure TR-1 and EC T-2 would seek to reduce VMT and is presumed to cause a less than significant transportation impact. Furthermore, because maintenance trips would only occur for 60 days per year, Alternative 3 would not result in long-term or permanent trips in excess of this threshold. Operation and maintenance would not result in a significant increase in VMT of the local area.

ECs and Mitigation Measures Applicable to Impact TR-5

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following measure:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

CEQA Significance Conclusion

Construction and O&M of Alternative 3 would not generate VMT that could be considered inconsistent with State or local guidelines and policy related to VMT. Implementation of EC T-2 and Mitigation Measure TR-1 would ensure VMT is reduced. This impact would be less than significant (Class II).

Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (Criterion TR3).

Impact TR-6: Construction or operation could increase hazards due to a design feature or incompatible use or otherwise result in unsafe conditions on public roads.

Similar to the proposed Project, construction and O&M of Alternative 3 would temporarily disrupt travel lanes or roadways and include heavy truck trips that could increase conflicts with passenger motorists, bicyclists, and pedestrians. Furthermore, construction and O&M could result in impediments to emergency vehicles; damage to road surfaces, shoulders, and curbs; and material (e.g., sand) spills onto paved roadway areas. EC T-1, EC T-2, and Mitigation Measures TR-1 through TR-4 would reduce potential unsafe conditions on public roads.

ECs and Mitigation Measures Applicable to Impact TR-6

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

MM TR-3 (Notification to Property Owners and Tenants)

See Impact TR-6 for the full text of the following mitigation measure:

MM TR-4 (Pavement Rehabilitation)

CEQA Significance Conclusion

Necessary roadway improvements and the movement of heavy trucks on roadways during construction and maintenance activities associated with Alternative 3 could potentially result in roadway hazards. EC T-1, EC T-2, and Mitigation Measures TR-1 through T-4 are proposed to reduce or avoid such impacts. With the incorporation of these mitigation measures, unsafe conditions on public roadways resulting from Alternative 3 would be reduced to a less-than-significant level (Class II).

Impact TR-7: Project activities could result in damage to roads.

As discussed above in Impacts TR-2 and TR-3, construction, and maintenance activities (including heavy truck trips), may result in pavement damage and spills on the streets and roadways along the haul routes. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-4 would reduce adverse impacts related to roadway damage.

ECs and Mitigation Measures Applicable to Impact TR-7

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact T-2 for the full text of the following measure:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

See Impact T-5 for the full text of the following measure:

MM TR-4 (Pavement Rehabilitation)

CEQA Significance Conclusion

Construction activities and the movement of heavy trucks on roadways during construction and maintenance could potentially result in roadway damage. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-4 are proposed to reduce or avoid such impacts. With the incorporation of this mitigation, roadway damage impacts resulting from Alternative 3 would be reduced to a less-than-significant level (Class II).

Impact TR-8: Project construction may require temporary roadway disruptions.

As discussed above in Impact TR-2 and in the proposed Project, construction of Alternative 3 (Option A or B) would require temporary closure of Avenue 38 for realignment and temporary lane/road closures to Via Las Palmas, Washington Boulevard, and other roadways. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-2 are proposed to reduce the impacts associated with temporary roadway or lane closures during construction.

ECs and Mitigation Measures Applicable to Impact TR-8

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

CEQA Significance Conclusion

Construction of Alternative 3 (Option A or B) would require temporary closure and disruptions to roads and/or travel lanes. EC T-1, EC T-2, and Mitigation Measures TR-1 and TR-2 are proposed to reduce or avoid such impacts. With the incorporation of this mitigation, potential impacts from temporary closure and disruptions to roads and/or travel lanes would be reduced to a less-than-significant level (Class II).

Result in inadequate emergency access (Criterion TR4).

Impact TR-9: Construction or operation could temporarily restrict access to or from adjacent land uses and/or restrict the movements of emergency vehicles with no reasonable alternative access routes.

As discussed above in Impacts TR-2 and TR-3, construction of Alternative 3 would require temporary closure of Avenue 38 for realignment and temporary lane/road closures to Via Las Palmas, Washington Boulevard, and other roadways. Additionally, construction and maintenance of Alternative 3 would include truck trips in volumes that may result in increased travel times and delays on affected local roadways (see Impact TR-1), which could potentially result in impeding emergency vehicles. EC T-1, EC T-2, and Mitigation Measures TR-1, TR-2, and TR-5 would reduce access restrictions resulting from Alternative 2 related activities and traffic (particularly truck trips).

ECs and Mitigation Measures Applicable to Impact TR-9

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Impact TR-2 for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

See Impact TR-8 for the full text of the following mitigation measures:

MM TR-5 (Coordinate with Emergency Service Providers)

CEQA Significance Conclusion

Construction and maintenance of Alternative 3 (Option A or B) would require temporary closure and disruptions to roads and/or travel lanes and truck trips that could temporarily impede emergency vehicle movements. With the incorporation of EC T-1, EC T-2, and Mitigation Measures TR-1, TR-2, and TR-5, potential impacts to emergency vehicle access and movements would be reduced to a less-than-significant level (Class II).

4.13.2.4 No Action Alternative (Alternative 4)

Direct and Indirect Effects Analysis

Under the No Action Alternative, Project construction would not occur and flood risk to the area would remain. Flood protection to the developed areas within the FEMA-designated Flood Hazard Area would not be provided. Therefore, no traffic would be generated by any Project-related activities. In the event of catastrophic flooding, repair activities and related truck trips are expected to occur throughout a much greater area of Thousand Palms; however, it is unknown to what extent and when they would occur.

4.13.3 Impact Summary – Transportation

Table 4.13-5 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to transportation. Refer to Section 4.13.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures, and Table 2-4 for the full text of the environmental commitments.

Table 4.13-5. Summary of Impacts and Mitigation Measures – Transportation

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
TR-1: The Project could substantially decrease effectiveness or the performance of the freeway system.	Class III	Class III	Class III	EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)
TR-2: Project construction trips and activities could substantially decrease performance of the local roadway system.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-2 (Traffic Control Plan for Lane Closures and Detours) MM TR-3 (Notification to Property Owners and Tenants)
TR-3: Project maintenance trips could substantially decrease performance of the local roadway system.	Class II	Class II	Class II	EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-3 (Notification to Property Owners and Tenants)
TR-4: Construction activities which result in roadway disruption, use, or improvements could conflict with alternative transportation plans.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-2 (Traffic Control Plan for Lane Closures and Detours)
TR-5: Construction or operation could result in excessive VMT.	Class II	Class II	Class II	EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan)
TR-6: Construction or operation could increase hazards due to a design feature or incompatible use or otherwise result in unsafe conditions on public roads.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-2 (Traffic Control Plan for Lane Closures and Detours) MM TR-3 (Notification to Property Owners and Tenants) MM TR-4 (Pavement Rehabilitation)

Table 4.13-5. Summary of Impacts and Mitigation Measures – Transportation

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
TR-7: Project activities could result in damage to roads.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-4 (Pavement Rehabilitation)
TR-8: Project construction may require temporary roadway disruptions.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-2 (Traffic Control Plan for Lane Closures and Detours)
TR-9: Construction or operation could temporarily restrict access to or from adjacent land uses and/or restrict the movements of emergency vehicles with no reasonable alternative access routes.	Class II	Class II	Class II	EC T-1 (Implement Standard Construction Practices and Safety Precautions) EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) MM TR-1 (Construction and Maintenance Traffic Management Plan) MM TR-2 (Traffic Control Plan for Lane Closures and Detours) MM TR-5 (Coordinate with Emergency Service Providers)

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.14 Water Resources

Presented within this section are potential effects on water resources that could occur as a result of construction and O&M of the Project and alternatives. Refer to Section 3.14.1 for a description of the existing water resources in the Project area, and Section 3.14.2 for the regulatory framework applicable to the Project.

4.14.1 Issues Identified During Scoping

Table 4.14-1 below provides a list of water resources issues raised during the public scoping period for the EIR/EIS (see Appendix A, Public Scoping). Comments related to jurisdictional waters and ephemeral drainages are addressed in Section 4.6 (Biological Resources). Issues are listed by agency or members of the public providing comment. The table also includes a brief discussion the applicability of each issue to the environmental analysis and where that issue is addressed in the EIR/EIS.

Table 4.14-1. Scoping Issues Relevant to Water Resources

Comment	Consideration in the EIR/EIS
U.S Environmental Protection Agency	
The commenter requests that the document discuss how residual flood risk is communicated on a regular basis.	With respect to residual flood risk, as part of the Federal Emergency Management Agency (FEMA) flood map revision process, all landowners and public jurisdictions potentially affected by the Project are required to be notified of the change in flood risk. Ongoing notification of flood risk include flood advisories on the CVWD website, as well as standard flood disclosures on property deeds. The CVWD participates in the National Flood Insurance Program.
H. N. and Frances Berger Foundation	
Provided potential alternatives to the proposed Project. Requested Project analyze increase in riverine flows and apply mitigation where appropriate. Requests coordination with Classic Club golf course regarding flows and debris.	The Project has been designed based on current hydraulic modeling, incorporating topography (alluvial fans), and has been calibrated based on observed and historical flooding patterns in the Thousand Palms area. This analysis has been accepted by FEMA as a good representation of 100-year flood conditions, based on current FEMA requirements. The Project cannot be built on the Coachella Valley Preserve due to legal protection of the resources within the Preserve. ~~The CVWD has a flood easement agreement with the Classic Club Golf Course.~~ The golf course was designed and built to accept and convey the Project design flows, including sediment and debris. The golf course is responsible for maintenance of this private facility. See Impact W-5.

Source: Appendix A.

4.14.2 Environmental Consequences

Significance Criteria. To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the Project and alternatives. Appropriate criteria have been identified and utilized to make these significance conclusions. The following significance criteria were derived from Appendix G of the CEQA Guidelines. In addition, the following list includes significance criteria that were used in the 2000 Final EIS/EIR for the original alignment of the Project (USACE, 2000). Although this EIR/EIS is a stand-alone document, the 2000 Final EIS/EIR criteria were crafted by the U.S. Army Corps of Engineers (USACE) Planning Division (the NEPA Lead Agency at that time) specifically for the Project and are therefore considered applicable to the current Project.

- **Criterion W1:** Violate any water quality standards or waste discharge requirements.
- **Criterion W2:** Substantially deplete groundwater supplies, interfere substantially with groundwater recharge, and/or result in contamination of groundwater resources.

- **Criterion W3:** Substantially deplete or contaminate a public water supply.
- **Criterion W4:** Substantially alter existing drainage patterns, and/or substantially increase the rate or amount of surface runoff in a manner which would result in flooding, erosion, or sedimentation on- or off-site.
- **Criterion W5:** Increase surface water runoff such that the capacity of existing or planned stormwater drainage system(s) would be exceeded.
- **Criterion W6:** Place housing within a 100-year flood hazard area mapped by the Federal Emergency Management Agency.
- **Criterion W7:** Place structures within a 100-year flood hazard area mapped by the Federal Emergency Management Agency such that the structures would impede or redirect flood flows.
- **Criterion W8:** 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.
- **Criterion W9:** Place infrastructure in an area that is subject to inundation by mudflow, and associated risk of damage from mudflow.
- **Criterion W10:** Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, and/or require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities.

It has been determined that not all of the criteria listed above are applicable to the proposed Project, as listed and summarized below.

- Criterion W10 is not applicable to the proposed Project because it does not include any wastewater treatment or disposal facilities and would not affect wastewater treatment requirements or guidelines.

The following impact analyses for the proposed Project and alternatives addresses potential impacts that occur under Significance Criteria WR1 through WR9.

Impact Assessment Methodology. The impact analysis is based on an assessment of baseline conditions relevant to the site's water resources, presented in Section 3.14.1 (Water Resources – Environmental Baseline), and an assessment of Project-related and alternative-related effects on baseline conditions during Project construction, long-term operation, and long-term maintenance using appropriate technical analysis and the impact significance criteria.

4.14.2.1 Proposed Project (Alternative 1)

Direct and Indirect Effects Analysis

Violate water quality standards or waste discharge requirements (Criterion W1).

Impact W-1: Construction, operation, and maintenance of the Project could degrade water quality and violate water quality standards or waste discharge requirements.

Construction of the proposed Project would result in the temporary disturbance of approximately 175.47 acres and the permanent disturbance of approximately 286.35 acres. Ground disturbing activities associated with construction include excavation, trenching, and placement of fill and soil cement to construct levees, channels, and sediment basin structures. These ground disturbing activities could loosen and destabilize soils. These loose and destabilized soils could be mobilized during a subsequent storm event and could result in increased turbidity and sediment deposition in nearby waterbodies. The potential for loosened soil to be transported to a nearby waterbody would be minimized by the generally arid nature of the

Project area. Most of the waterbodies within the Project area are ephemeral, and only carry stream flow during and shortly after storm events. Also, the Project area contains an abundance of already loose or poorly consolidated soils (mostly sand) that are routinely transported downstream during storm events. The additional amount of loose soil that would be generated during Project construction would represent a small portion of the total amount of existing loose or poorly consolidated soil within the Project area. A report on the effects of the proposed Thousand Palms flood control structures on the supply of sand-sized sediment to the aeolian sand transport system concluded that the system is supply-limited and that the increased fluvial transport and deposition of sand that would occur under the proposed Project would represent a beneficial impact to the aeolian sand transport system (Lancaster, 2015). The proposed Project would affect federally jurisdictional waters and would disturb more than one acre in total; therefore, the Project would be required to obtain a Clean Water Act Section 402 NPDES Construction General Permit. This General Permit would require preparation of a Stormwater Pollution Prevention Plan (SWPPP), which would include Best Management Practices (BMPs) to prevent and control erosion and sedimentation. Finally, the proposed Project includes Environmental Commitments (ECs) that would minimize adverse effects to water resources. EC W-2 (Limit Construction During Precipitation Events) would prohibit construction activities during periods of anticipated or actual precipitation, which would further reduce the potential for ground disturbing activities to result in increased erosion and sedimentation of downstream waterbodies.

Construction of the proposed Project would involve the use of heavy equipment and machinery. Use of this construction equipment would involve the handling, use, and storage of hazardous materials, such as diesel fuel, gasoline, lubrication oil, cement slurry, hydraulic fluid, antifreeze, transmission fluid, and lubricating grease. Accidental releases or spills of hazardous materials used during construction could result in the direct contamination of waterbodies within the Project area or the indirect contamination of nearby waterbodies through subsequent transport by stormwater runoff. The potential for the accidental release or spill of a hazardous material to contaminate surface water or groundwater within or near the Project area would be relatively low due to the ephemeral nature of most streams in the Project area and the fact that construction activities would be prohibited during anticipated or actual precipitation events (EC W-2). Also, the quantity of hazardous materials that would be handled, used, and stored during construction of the proposed Project would be small enough such that an accidental release or spill could be quickly contained and removed for safe disposal. The potential for the accidental release or spill of a hazardous material to contaminate a nearby waterbody would be further reduced through implementation of the required SWPPP, which would include BMPs to quickly and effectively contain and clean-up hazardous material leaks and spills. EC W-1 (Hazardous Spills) also includes requirements to properly maintain vehicles to reduce the potential for accidental leaks or spills, to limit vehicle fueling activities to designated staging areas, and to immediately clean up any accidental spill or leak of hazardous materials. Additionally, Mitigation Measures PS-2 through PS-6 provide preventative measures to control hazardous materials (see Section 4.11, Public Safety).

Construction of the proposed Project, including excavation and trenching, may encounter shallow groundwater. The potential to encounter shallow groundwater within the Project area is low due as the depth to groundwater throughout the Project area generally exceeds 40 feet below ground surface (bgs). One exception is the presence of several desert fan palm oases that are sustained by groundwater welling up along fault fractures (USACE, 2000). In the event that shallow groundwater is encountered, dewatering of the excavation or trenching site may be required. If improperly managed, these dewatering activities could result in the discharge of contaminated groundwater. Groundwater that is pumped from a subsurface construction site would be temporarily stored and tested prior to discharge. Contaminated groundwater would be treated prior to discharge or disposed of at an appropriate disposal facility or wastewater treatment plant. Prior to the discharge of any uncontaminated groundwater, the CVWD would obtain all

required permits (such as a General Permit for Limited Threat Discharges to Surface Waters, Waste Discharge Requirements application, or Conditional Waiver) from the Colorado River RWQCB.

O&M activities would be substantially less intense than construction activities. O&M activities would generally include sand removal and distribution or disposal, adaptive management, facility repair, and vegetation removal. Sand removal from the levee toes and the channelized reaches would be the most intense of the O&M activities listed above. Sand would likely need to be removed from the channels more frequently than from the levee toes. These activities would result in a minor to moderate amount of ground disturbance. Removed sand would either be spread within the wind corridor for aeolian transport onto the Preserve or, if the material is deemed unsuitable, transported off-site and disposed of in an approved area or facility.

Inspection activities during O&M would involve the use of light-duty vehicles. Heavy construction equipment would be required for sand removal from the levee toes and channelized reaches. The use of these vehicles and equipment would require the use of hazardous materials, such as fuel, lubricants, and coolant. These hazardous materials could contaminate waterbodies in the Project area through an accidental release or spill. The use of vehicles and construction equipment during O&M for the proposed Project would be substantially less than during construction, and therefore the risk of contamination of a nearby waterbody from the accidental release or spill of a hazardous material would be proportionally lower. Dewatering activities during O&M are not anticipated.

ECs and Mitigation Measures Applicable to Impact W-1

EC W-1 (Hazardous Spills)

EC W-2 (Limit Construction During Precipitation Events)

See Section 4.11 (Public Safety) for the complete language of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Phase I Environmental Site Assessment)

MM PS-6 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

Compliance with applicable laws and regulations (including implementation of the required SWPPP), implementation of EC W-1 and W-2 to protect water quality, and implementation of Mitigation Measures PS-2 through PS-6 to manage and prevent hazardous waste spills would ensure that construction and O&M of the proposed Project would not substantially degrade water quality or violate water quality standards or waste discharge requirements. This impact would be reduced to a less-than-significant level (Class II).

Substantially deplete groundwater supplies, interfere with groundwater recharge, and/or result in contamination of groundwater resources (Criterion W2).

Impact W-2: Construction and operation of the Project could substantially deplete groundwater supplies, interfere with groundwater recharge, and/or result in contamination of groundwater resources.

Construction of the proposed Project would require the use of water for dust suppression, soil conditioning, and the mixing of soil cement. Approximately 647.9 acre-feet of water would be required for construction

of the proposed Project. It is anticipated that this water would be obtained from public hydrants supplied by the CVWD. Construction water use for the proposed Project would be temporary and would represent a small percentage of the total available water supply from the CVWD. Construction water use would not directly deplete groundwater supplies.

A small amount of dewatering, however, may be required during construction of the proposed Project, but these dewatering activities would be temporary and would not adversely affect the production of a nearby well or substantially deplete groundwater supplies. Neither construction nor operation of the proposed Project would substantially interfere with groundwater recharge; impervious surfaces would be small and distributed throughout the watershed. Sufficient permeable surfaces would remain throughout the watershed such that the rate of groundwater recharge would remain unchanged as a result of construction and operation of the proposed Project.

Spills or leaks of hazardous materials, if left on the ground surface or allowed to be washed downstream, could infiltrate into the soil and contaminate shallow groundwater resources. The potential for contamination of groundwater through the accidental spill or leak of hazardous materials would be low due to the generally arid nature of the Project area, the small amounts of hazardous materials that would be used during construction and operation of the proposed Project, and the implementation of EC W-1 and W-2, Mitigation Measures PS-2 through PS-6, and the required SWPPP.

ECs and Mitigation Measures Applicable to Impact W-2

EC W-1 (Hazardous Spills)

EC W-2 (Limit Construction During Precipitation Events)

See Section 4.11 (Public Safety) for the complete language of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Phase I Environmental Site Assessment)

MM PS-6 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

Water use for construction of the proposed Project would be temporary and would represent a small portion of the total available water supply from the CVWD. Neither construction nor operation of the proposed Project would result in substantial groundwater extraction or dewatering which would adversely affect a nearby water well or substantially deplete groundwater supplies. Construction and operation of the proposed Project would not substantially interfere with groundwater recharge because sufficient permeable surfaces would remain throughout the watershed such that infiltration rates would remain unchanged. As discussed above, the potential for contamination of shallow groundwater through the accidental release of hazardous materials is very small due to the generally arid nature of the Project area, the small amounts of hazardous materials that would be used during construction and operation of the proposed Project, and the implementation of EC W-1 and W-2, Mitigation Measures PS-2 through PS-6, and the required SWPPP. This impact would be less than significant (Class II).

Substantially deplete or contaminate a public water supply (Criterion W3).

Impact W-3: Construction and operation of the Project could substantially deplete or contaminate a public water supply.

The CVWD provides water-related services for most of the Coachella Valley, including the Thousand Palms area. The CVWD's sources of water supply includes local groundwater, Colorado River water, and the State Water Project. Water from the Colorado River is delivered to the Coachella Valley by the Coachella Canal, which is a branch of the All-American Canal. The Whitewater River, which has municipal water supply as a designated beneficial use, is located to the south of the Project area. It is possible that construction and operation of the proposed Project could contaminate one of these sources of public water supply either through increased sedimentation or through indirect contamination of the waterbody from the accidental release and subsequent transport by storm water of a hazardous material. The potential for contamination of a public water supply is very low due to the generally arid nature of the Project area, the distance between Project activities and public water supplies, the small amounts of hazardous materials that would be used during construction and operation of the proposed Project, the BMPs that would be implemented through ECs and the required SWPPP, as well as the preventative measures that would be implemented through Mitigation Measures PS-2 through PS-6.

ECs and Mitigation Measures Applicable to Impact W-3

EC W-1 (Hazardous Spills)

EC W-2 (Limit Construction During Precipitation Events)

See Section 4.11 (Public Safety) for the complete language of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Phase I Environmental Site Assessment)

MM PS-6 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

The potential for contamination of a public water supply is very low due to the generally arid nature of the Project area, the distance between project activities and public water supplies, the small amounts of hazardous materials that would be used during construction and operation of the Proposed Project, and the BMPs that would be implemented through project ECs and the required SWPPP, as well as the preventative measures that would be implemented through Mitigation Measures PS-2 through PS-6. This impact would be less than significant (Class II).

Substantially alter existing drainage patterns, and/or substantially increase the rate or amount of surface runoff in a manner which would result in flooding, erosion, or sedimentation on- or off-site (Criterion W4).

Impact W-4: Construction and operation of the Project could substantially alter existing drainage patterns or surface runoff which could result in flooding, erosion, and sedimentation on- or off-site.

Construction and operation of the proposed Project would substantially alter the natural drainage patterns in the immediate Project area. An Assessment of Aquatic Resources Report or jurisdictional delineation was approved by the Corps Regulatory Division in 2020 (see Appendix D). The report identified approximately19.88 acres (21,568 linear feet) of CDFW jurisdictional waters and 15.12 acres (20,398 linear

feet) of Waters of the U.S. and State waters within the Project Area (see Figure 3.6-11, Federal and State Jurisdictional Waters and Table 3.6-7). These consist of non-wetland waters. Federal wetland waters, other special aquatic sites as defined under federal regulations, do not occur in the Project area and would not be impacted by construction or O&M activities. For additional information O&M impacts to see Section 4.6 (Biological Resources, Impact BIO 14: The Project would result in impacts to jurisdictional waters and downstream habitat). Table 4.6-5 (Impacts to Jurisdictional Waters of the State and Waters of the U.S.) provides a breakdown of the impacts by Reach.

Floodwaters with a predominantly southerly flow would be intercepted and directed generally towards the east-southeast. These intercepted flows would be concentrated from sheet flows to more channel-like flows along the toes of the levees and within the channelized reaches. This concentrated stormwater flow could lead to localized increases in erosion and sedimentation. However, the proposed Project includes the installation of a sediment basin at the downstream end of Reach 1, which would reduce storm flow velocity and avoid adverse effects associated with erosion or channel migration.

Additionally, the Reach 4 channel would divert stormwater flows from the southeast end of the Classic Club Golf Course to Washington Street, at which point flows would be guided under Washington Street and into an existing conveyance system with the capacity to transmit proposed Project-related flows. These flows would discharge into an existing detention basin that would be deepened as part of the proposed Project. The proposed Project would deepen the existing Sun City Collection detention basin, such that the current infiltration capacity of the Project area is maintained. Therefore, off-site flooding would not increase from baseline conditions due to construction or operation of the proposed Project.

In addition, under proposed Project conditions, fluvial transport of sand via erosion and sedimentation to the aeolian transport corridor would not only be maintained but would be increased in a supply-limited corridor, which represents a beneficial effect (Lancaster, 2015). Overall, the substantial drainage alteration induced by construction and operation of the proposed Project would result in a substantial beneficial effect for flood protection of residential structures, as well as the supply of sand for aeolian transport to critical habitat. The pattern of erosion and sedimentation in the Project area would be substantially altered through construction and operation of the proposed Project. However, the wind transport corridor for downwind sand transport would be largely undisturbed and may benefit from an increased sand supply (Lancaster, 2015). Sand deposition along the toes of the levees and within the channelized reaches would be removed, distributed, and adaptively managed (ECs SM-1 and SM-2) so as to not disrupt the existing sand transport capacity of the Project area.

ECs and Mitigation Measures Applicable to Impact W-4

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

CEQA Significance Conclusion

Construction and operation of the proposed Project would result in a substantial alteration of existing drainage patterns in the immediate Project area; however, of the change in existing stormwater flow patterns would protect existing housing units from the baseline 100-year flood and would divert stormwater flows into an existing conveyance system with adequate capacity. The proposed Project would also increase the sand supply for the aeolian transport corridor within the Project area (Lancaster, 2015), which would be a beneficial impact (Class IV).

Increase surface water runoff such that the capacity of existing or planned stormwater drainage system(s) would be exceeded (Criterion W5).

Impact W-5: The Project could impact existing or planned stormwater drainage systems.

Although construction and operation of the proposed Project would concentrate stormwater runoff flows in certain locations, the overall stormwater runoff pattern of the region would be maintained, as would the infiltration capacity of the Project area. Therefore, surface water runoff would not increase; however, levees and channels would tie into existing conveyance systems, including the Classic Club Golf Course and Sun City. As part of the proposed Project design, hydrology and hydraulic modeling was completed by Northwest Hydraulic Consultants (NHC) in 2013 which considered 100-year flows and riverine flows to ensure the proposed drainage system, which incorporates Classic Club Golf Course and ties into the existing Sun City Palm Desert drainage system, could convey the Project flows. Existing topography, including alluvial fans, was considered in the analysis. As discussed in the NHC 2013 report, there is considerable flood storage in the Classic Club Gold Course, which would be able to accommodate peak inflows. As the proposed Project, and accompanying flood flows, was incorporated into the design process for both the Classic Club Golf Course as well as the Sun City Palm Desert drainage system, the flows resulting from implementation of the proposed Project would not result in an adverse effect on stormwater drainage systems. Future drainage projects or upgrades would be required to address flood flows as part of their project design, and no adverse effects on future stormwater drainage would occur.

CEQA Significance Conclusion

Construction and operation of the proposed Project would not generate flows greater than existing or future stormwater drainage systems could accommodate. Flows from the proposed Project were accounted for in the design of the Classic Club Golf Course and the Sun City Palm Desert stormwater drainage system such that the existing capacity can accommodate flows. A less-than-significant impact on stormwater drainage systems would occur (Class III).

Place housing within a 100-year flood hazard area mapped by the Federal Emergency Management Agency (Criterion W6).

Construction of the proposed Project would not include the construction or relocation of any housing. No new housing would be placed within a 100-year flood hazard area mapped by the Federal Emergency Management Agency (FEMA). Floodwater that would be directed downstream of the proposed Project would not result in any additional homes being located within a 100-year floodplain.

CEQA Significance Conclusion

No impact would occur under this criterion.

Place structures within a 100-year flood hazard area mapped by the Federal Emergency Management Agency such that the structures would impede or redirect flood flows (Criterion W7).

Impact W-6: Construction and operation of the Project would impede or redirect flows within a 100-year flood hazard area mapped by FEMA.

Construction and operation of the proposed Project would install levees and channels within the 100-year floodplain for the express purpose of diverting floodwater away from development within Thousand Palms, while maintaining the sand supply for the onsite aeolian transport corridor. This placement would result in beneficial effects for the community and the Preserve.

CEQA Significance Conclusion

Construction and operation of the proposed Project would purposefully redirect flood flows away from housing units while maintaining or enhancing the fluvial transport and infiltration capacity of the Project area. This would be a beneficial impact (Class IV).

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 (Criterion W8).

Impact W-7: Construction and operation of the Project would remove downstream areas from the FEMA flood hazard zone.

Construction of the proposed Project would add roughly six miles of levees for the purpose of protecting residents of the Thousand Palms area from seasonal and periodic flooding. The proposed Project would purposefully redirect flood flows away from inhabited areas, ~~removing~~ reducing people and structures from risk of damage due to flooding. The proposed Project would not involve the construction or installation of holding ponds, dams, or any other water storage structures which could potentially rupture and cause flooding. The overall purpose for the proposed Project is to provide flood hazard protection to the areas which are currently located within the FEMA-designated flood hazard zone and floodplain, thus ~~removing~~ reducing the areas at risk from the flood hazard area. These areas are currently at risk of flooding due to the nature of the stormwater runoff from the nearby mountains and the coalescing alluvial fans.

CEQA Significance Conclusion

Construction and operation of the proposed Project would purposefully redirect flood flows away from housing units and inhabited areas while maintaining or enhancing the fluvial transport and infiltration capacity of the Project area. Additional housing units would be protected from the 100-year flood and the surrounding areas would be removed from the FEMA flood hazard zone, thus removing the existing risk to life or property from flooding, and not adding any new risk of exposure. This would be a beneficial impact (Class IV).

Place infrastructure in an area that is subject to inundation by mudflow, and associated risk of damage from mudflow (Criterion W9).

The Project area consists of generally flat desert washes, bajadas, alluvial plains, and sand corridor. The primary soil types found in stormflow wash load are sand and gravel (Lancaster, 2015). The Project area is not subject to mudflow.

CEQA Significance Conclusion

Based on the topography of the area and soil types, no impact from mudflow would occur.

4.14.2.2 Removal of Reach 2 (Alternative 2)

Direct and Indirect Effects Analysis

Violate water quality standards or waste discharge requirements (Criterion W1).

Impact W-1: Construction, operation, and maintenance of the Project could degrade water quality and violate water quality standards or waste discharge requirements.

Under Alternative 2 Reach 2 would not be constructed; Reaches 1, 3, and 4 would be implemented as described for the proposed Project (Figure 2-8, Alternative 2 Alignment). Construction activities would be

exactly as described in Section 2.2.2 for the proposed Project, except Reach 2 would not be constructed. The removal of Reach 2 would remove the additional flood protection to the SCE Mirage Substation. In the event of a 100-year flood event, with current levels of protection, the substation would become partially inundated (NHC, 2017). Residences to the southwest are not anticipated to be inundated during a 100-year flood event (NHC, 2017). O&M Activities associated with Alternative 2 would be the same as described in Section 2.2.3 for the proposed Project, except that sand removal activities would not occur along Reach 2.

ECs and Mitigation Measures Applicable to Impact W-1

EC W-1 (Hazardous Spills)

EC W-2 (Limit Construction During Precipitation Events)

See Section 4.11 (Public Safety) for the complete language of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Phase I Environmental Site Assessment)

MM PS-6 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

Construction of Alternative 2 would require slightly less construction activities then the proposed Project due to the removal of Reach 2. Nevertheless, violations of water quality standards or waste discharge requirements could still occur under Alternative 2. As discussed above for the proposed Project, compliance with applicable laws and regulations (including implementation of the required SWPPP), and implementation of ECs and recommended MMs would ensure that construction and O&M of Alternative 2 would not substantially degrade water quality, violate water quality standards, or waste discharge requirements. This impact would be reduced to a less-than-significant level (Class II).

Substantially deplete groundwater supplies, interfere with groundwater recharge, and/or result in contamination of groundwater resources (Criterion W2).

Impact W-2: Construction and operation of the Project would substantially deplete groundwater supplies, interfere with groundwater recharge, and/or result in contamination of groundwater resources.

As discussed above for Alternative 1, the proposed Project would use approximately 647.9 acre-feet of water. With the removal of Reach 2 from the construction plan, Alternative 2 would use approximately 639.9 acre-feet of water, slightly less then what would be required for the proposed Project. Alternative 2 also has a similar, but reduced, potential for spills or leaks of hazardous material to potentially infiltrate the soil and contaminate shallow groundwater resources due to the reduction in construction activities.

ECs and Mitigation Measures Applicable to Impact W-2

EC W-1 (Hazardous Spills)

EC W-2 (Limit Construction During Precipitation Events)

See Section 4.11 (Public Safety) for the complete language of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Phase I Environmental Site Assessment)

MM PS-6 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

Similar to Alternative 1, the water use for Alternative 2 would be temporary and would represent a small portion of the total available water supply from CVDW. Alternative 2 would use slightly less water than Alternative 1 due to the removal of Reach 2 from the construction plan, and as discussed in detail above under Alternative 1, with implementation of ECs and recommended mitigation measures, this impact would be less-than-significant (Class II).

Substantially deplete or contaminate a public water supply (Criterion W3).

Impact W-3: Construction and operation of the Project would substantially deplete or contaminate a public water supply.

Impacts would be the same as described above for the proposed Project because Alternative 2 would similarly be required to implement ECs and BMPs through the required SWPPP. While it is possible that construction and operation of Alternative 2 could contaminate source of public water either through increased sedimentation or through indirect contamination, the removal of Reach 2 from the construction plan slightly reduces the likelihood of accidental contamination.

ECs and Mitigation Measures Applicable to Impact W-3

EC W-1 (Hazardous Spills)

EC W-2 (Limit Construction During Precipitation Events)

See Section 4.11 (Public Safety) for the complete language of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Phase I Environmental Site Assessment)

MM PS-6 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

The potential for contamination of a public water source is very low due to the generally arid nature of the Project area, the distance between Project activities and public water supplies, the small amounts of hazards materials that would be used during construction and operation, and the ECs and BMPs which would be implemented. Alternative 2 would further reduce the potential for contamination due to the removal of Reach 2 from the construction plan and would result in a less-than-significant impact after the mitigation measures are implemented (Class II).

Substantially alter existing drainage patterns, and/or substantially increase the rate or amount of surface runoff in a manner which would result in flooding, erosion, or sedimentation on- or off-site (Criterion W4).

Impact W-4: Construction and operation of the Project could substantially alter existing drainage patterns or surface runoff which could result in flooding, erosion, and sedimentation on- or off-site.

Similar to the proposed Project, Alternative 2 would substantially alter the natural drainage patterns in the immediate Project area. However, with the removal of Reach 2 from the construction plan, the drainage patterns between Reach 1 and Reach 3would be less altered and be more consistent with current conditions. The removal of Reach 2 from the construction plan would cause the existing Mirage Substation and homes to the immediate southwest to remain vulnerable to flood hazards, as the only flood protection in place would be an existing berm which currently protects the substation site. However, as discussed in detail for the proposed Project, fluvial transport of sand via erosion and sedimentation would be increased and would result in a beneficial effect on the environment. The substantial drainage alteration which would result from construction of Alternative 2 would result in a beneficial effect for flood protection on local residences. Sand deposition along the toes of the levees and within the channelized reaches would be removed, distributed, and adaptively managed as required by ECs SM-1 and SM-2, same as the proposed Project, so as to not disrupt the existing sand transport capacity of the Project area.

ECs and Mitigation Measures Applicable to Impact W-4

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

CEQA Significance Conclusion

Construction and operation of Alternative 2 would result in a substantial alteration of existing drainage patterns in the immediate Project area; however, of the change in existing stormwater flow patterns would protect existing housing units from the baseline 100-year flood and would divert stormwater flows into an existing conveyance system with adequate capacity. Alternative 2 would also increase the sand supply for the aeolian transport corridor within the Project area (Lancaster, 2015), which would be a beneficial impact (Class IV).

Increase surface water runoff such that the capacity of existing or planned stormwater drainage system(s) would be exceeded (Criterion W5).

Impact W-5: The Project could impact existing or planned stormwater drainage systems.

The removal of Reach 2 would allow surface water in the region to continue to flow naturally (in the area of Reach 2) and would not increase surface water runoff in the immediate Project vicinity. Similar to the discussion above for the proposed Project, construction, and operation of Alternative 2 would concentrate stormwater runoff flows in certain locations, the overall stormwater runoff pattern of the region would be maintained, as would the infiltration capacity of the Project area. Stormwater flows would only be concentrated in areas which have been designed to accommodate the increase in flows resulting from the Project, including the Classic Club Golf Course and the Sun City Palm Desert stormwater drainage system. Therefore, surface water runoff would not increase such that the capacity of existing or planned stormwater drainage system(s) would be exceeded.

CEQA Significance Conclusion

Construction and operation of Alternative 2 would not generate flows greater than existing or future stormwater drainage systems could accommodate. Flows from the Project were accounted for in the design of the Classic Club Golf Course and the Sun City Palm Desert stormwater drainage system such that the existing capacity can accommodate flows. A less-than-significant impact on stormwater drainage systems would occur (Class III).

Place housing within a 100-year flood hazard area mapped by the Federal Emergency Management Agency (Criterion W6).

As discussed for the proposed Project, Alternative 2 would not include the construction or relocation of any housing. No new housing would be placed within a 100-year flood hazard area mapped by FEMA. Floodwater directed downstream of Alternative 2 would not result in any additional homes being located within a 100-year floodplain.

CEQA Significance Conclusion

No impact would occur under this criterion.

Place structures within a 100-year flood hazard area mapped by the Federal Emergency Management Agency such that the structures would impede or redirect flood flows (Criterion W7).

Impact W-6: Impact W-5: Construction and operation of the Project would impede or redirect flows within a 100-year flood hazard area mapped by FEMA.

Construction and operation of Alternative 2 would install levees and channels within the 100-year flood-plain for the express purpose of diverting floodwater away from development within Thousand Palms, while maintaining the sand supply for the onsite aeolian transport corridor. This placement would result in beneficial effects for the community and the Preserve. Alternative 2 would construct one less levee than the proposed Project and would not provide the additional flood protection to the existing Mirage Substation and residences to the immediate southwest, which would remain in the FEMA flood zone.

CEQA Significance Conclusion

Construction and operation of Alternative 2 would purposefully redirect flood flows away from housing units while maintaining or enhancing the fluvial transport and infiltration capacity of the Project area. This would be a beneficial impact (Class IV).

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 (Criterion W8).

Impact W-7: Construction and operation of the Project would remove downstream areas from the FEMA flood hazard zone.

As discussed above for the proposed Project, construction of Alternative 2 would install levees and channels for the purpose of protecting residents of the Thousand Palms area from seasonal and periodic flooding. Alternative 2 would purposefully redirect flood flows away from inhabited areas, removing people and structures from risk of damage due to flooding. Alternative 2 would not involve the construction or installation of holding ponds, dams, or any other water storage structures which could potentially rupture and cause flooding. The overall purpose for the Project is to provide flood hazard protection to the areas which are currently located within the FEMA-designated flood hazard zone and floodplain, thus ~~removing~~ reducing the areas at risk from the flood hazard area. These areas are currently

at risk of flooding due to the nature of the stormwater runoff from nearby mountains and the coalescing alluvial fans. Alternative 2 would result in the construction of one less levee (removal of Reach 2) which would remove the additional flood protection for the existing Mirage Substation and residences to the immediate southwest, which would occur under the proposed Project.

CEQA Significance Conclusion

Alternative 2 would purposefully redirect flood flows away from housing units and inhabited areas while maintaining or enhancing the fluvial transport and infiltration capacity of the Project area. Additional housing units would be protected from the 100-year flood and the surrounding areas (except in the vicinity of Reach 2, which would not be constructed under Alternative 2) would be removed from the FEMA flood hazard zone, thus removing the existing risk to life or property from flooding, and not adding any new risk of exposure. This would be a beneficial impact (Class IV).

Place infrastructure in an area that is subject to inundation by mudflow, and associated risk of damage from mudflow (Criterion W9).

The Project area consists of generally flat desert washes, bajadas, alluvial plains, and sand corridor. The primary soil types found in stormflow wash load are sand and gravel (Lancaster, 2015). The Project area is not subject to mudflow.

CEQA Significance Conclusion

Based on the topography of the area and soil types, no impact from mudflow would occur.

4.14.2.3 Modified Reach 3 (Alternative 3)

Direct and Indirect Effects Analysis

Violate water quality standards or waste discharge requirements (Criterion W1).

Impact W-1: Construction, operation, and maintenance of the Project would degrade water quality and violate water quality standards or waste discharge requirements.

Water quality and waste discharge impacts associated with Alternative 3 would be the same as described for the proposed Project because this alternative would only result in a shift in the angle of the Reach 3 alignment and would not result in substantial changes to construction methods, design, or O&M activities.

ECs and Mitigation Measures Applicable to Impact W-1

EC W-1 (Hazardous Spills)

EC W-2 (Limit Construction During Precipitation Events)

See Section 4.11 (Public Safety) for the complete language of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Phase I Environmental Site Assessment)

MM PS-6 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

Alternative 3 would be constructed in compliance with applicable laws and regulations (including implementation of the required SWPPP) and would require implementation of ECs W-1 and W-2 to protect water quality, as well as implementation of Mitigation Measures PS-2 through PS-6 to manage and prevent hazardous waste spills. This would ensure that construction and O&M of Alternative 3 would not substantially degrade water quality or violate water quality standards or waste discharge requirements. This impact would be reduced to a less-than-significant level (Class II).

Substantially deplete groundwater supplies, interfere with groundwater recharge, and/or result in contamination of groundwater resources (Criterion W2).

Impact W-2: Construction and operation of the Project would substantially deplete groundwater supplies, interfere with groundwater recharge, and/or result in contamination of groundwater resources.

As discussed above for the proposed Project, construction of Alternative 3 would similarly require approximately 647.9 acre-feet of water which would be supplied by CVWD from public hydrants. This would represent a small percentage of the water available from CVWD and construction would not directly deplete groundwater supplies. Neither construction nor operation of Alternative 3 would substantially interfere with groundwater recharge. The risk of spills or leaks of hazardous materials as a result of construction of Alternative 3 is similar in scope to that of the proposed Project and are discussed in greater detail above. Alternative 3 would require the implementation of ECs W-1 and W-2, Mitigation Measures PS-2 through PS-6, and the required SWPPP.

ECs and Mitigation Measures Applicable to Impact W-2

EC W-1 (Hazardous Spills)

EC W-2 (Limit Construction During Precipitation Events)

See Section 4.11 (Public Safety) for the complete language of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Phase I Environmental Site Assessment)

MM PS-6 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

As discussed in detail above for the proposed Project, the water use for construction of Alternative 3 would be temporary and would represent a small portion of the total available water supply from the CVWD. Neither construction nor operation of Alternative 3 would result in substantial impacts on nearby water supplies or impact groundwater recharge rates. As discussed above, the potential for contamination of shallow groundwater through an accidental release is very small, and similar in nature to those of the proposed Project. With implementation of ECs W-1 and W-2, Mitigation Measures PS-2 through PS-6, and the required SWPPP any impacts would be less-than-significant (Class II).

Substantially deplete or contaminate a public water supply (Criterion W3).

Impact W-3: Construction and operation of the Project would substantially deplete or contaminate a public water supply.

As discussed above for the proposed Project, the CVWD provides water-related services for most of the Coachella Valley, including the Thousand Palms area. It is possible that construction and operation of Alternative 3 could contaminate a nearby source of public water; however, the potential for contamination is very low due to the arid nature of the Project area, distance between construction activities and public water supplies, the small amounts of hazardous materials that would be used during construction and operation of Alternative 3, the BMPs that would be implemented through ECs and the required SWPPP, as well as the preventative measures that would be implemented through Mitigation Measures PS-2 through PS-6.

ECs and Mitigation Measures Applicable to Impact W-3

EC W-1 (Hazardous Spills)

EC W-2 (Limit Construction During Precipitation Events)

See Section 4.11 (Public Safety) for the complete language of the following mitigation measures:

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-4 (Human Waste)

MM PS-5 (Phase I Environmental Site Assessment)

MM PS-6 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

The potential for contamination of a public water supply is very low due to the generally arid nature of the Project area, the distance between Project activities and public water supplies, the small amounts of hazardous materials that would be used during construction and operation of Alternative 3, and the BMPs that would be implemented through Project ECs and the required SWPPP, as well as the preventative measures that would be implemented through Mitigation Measures PS-2 through PS-6. This impact would be less than significant (Class II).

Substantially alter existing drainage patterns, and/or substantially increase the rate or amount of surface runoff in a manner which would result in flooding, erosion, or sedimentation on- or off-site (Criterion W4).

Impact W-4: Construction and operation of the Project could substantially alter existing drainage patterns or surface runoff which could result in flooding, erosion, and sedimentation on- or off-site.

Similar to the proposed Project, Alternative 3 would substantially alter the natural drainage patterns in the immediate Project area. As discussed in detail above for the proposed Project, fluvial transport of sand via erosion and sedimentation would increase and result in a beneficial effect on the environment. The substantial drainage alteration, which would result from construction of Alternative 3, would result in a beneficial effect for flood protection on local residences. Sand deposition along the toes of the levees and within the channelized reaches would be removed, distributed, and adaptively managed as required by ECs SM-1 and SM-2 so as to not disrupt the existing sand transport capacity of the Project area.

ECs and Mitigation Measures Applicable to Impact W-4

EC SM-1 (Sand Removal and Distribution or Disposal)

EC SM-2 (Adaptive Management Plan)

CEQA Significance Conclusion

Construction and operation of Alternative 3 would result in a substantial alteration of existing drainage patterns in the immediate Project area; however, the change in existing stormwater flow patterns would protect existing housing units from the baseline 100-year flood and would divert stormwater flows into an existing conveyance system with adequate capacity. Alternative 3 would also increase the sand supply for the aeolian transport corridor within the Project area (Lancaster, 2015), which would be a beneficial impact (Class IV).

Increase surface water runoff such that the capacity of existing or planned stormwater drainage system(s) would be exceeded (Criterion W5).

Impact W-5: The Project could impact existing or planned stormwater drainage systems.

Similar to the discussion above for the proposed Project, construction, and operation of Alternative 3 would concentrate stormwater runoff flows in certain locations, the overall stormwater runoff pattern of the region would be maintained, as would the infiltration capacity of the Project area. Stormwater flows would only be concentrated in areas which have been designed to accommodate the increase in flows resulting from the Project, including the Classic Club Golf Course and the Sun City Palm Desert stormwater drainage system. Therefore, surface water runoff would not increase such that the capacity of existing or planned stormwater drainage system(s) would be exceeded.

CEQA Significance Conclusion

Construction and operation of Alternative 3 would not generate flows greater than existing or future stormwater drainage systems could accommodate. Flows from the Project were accounted for in the design of the Classic Club Golf Course and the Sun City Palm Desert stormwater drainage system such that the existing capacity can accommodate flows. A less-than-significant impact on stormwater drainage systems would occur (Class III).

Place housing within a 100-year flood hazard area mapped by the Federal Emergency Management Agency (Criterion W6).

Construction of Alternative 3 would not include the construction or relocation of any housing. No new housing would be placed within a 100-year flood hazard area mapped by FEMA. Floodwater directed downstream of the proposed Project would not result in any additional homes being located within a 100-year floodplain.

CEQA Significance Conclusion

No impact would occur under this criterion.

Place structures within a 100-year flood hazard area mapped by the Federal Emergency Management Agency such that the structures would impede or redirect flood flows (Criterion W7).

Impact W-6: Construction and operation of the Project would impede or redirect flows within a 100-year flood hazard area mapped by FEMA.

Construction and operation of Alternative 3 would install levees and channels within the 100-year floodplain for the express purpose of diverting floodwater away from development within Thousand Palms, while maintaining the sand supply for the onsite aeolian transport corridor. This placement would result in beneficial effects for the community and the Preserve.

CEQA Significance Conclusion

Construction and operation of Alternative 3 would purposefully redirect flood flows away from housing units while maintaining or enhancing the fluvial transport and infiltration capacity of the Project area. This would be a beneficial impact (Class IV).

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 (Criterion W8).

Impact W-7: Construction and operation of the Project would remove downstream areas from the FEMA flood hazard zone.

Construction of Alternative 3 would add roughly six miles of levees for the purpose of protecting residents of the Thousand Palms area from seasonal and periodic flooding. Alternative 3 would purposefully redirect flood flows away from inhabited areas, removing people and structures from risk of damage due to flooding. Alternative 3 would not involve the construction or installation of holding ponds, dams, or any other water storage structures which could potentially rupture and cause flooding. The overall purpose is to provide flood hazard protection to the areas which are currently located within the FEMA-designated flood hazard zone and floodplain, thus ~~removing~~ reducing the areas at risk from the flood hazard area. These areas are currently at risk of flooding due to the nature of the stormwater runoff from nearby mountains and coalescing alluvial fans.

CEQA Significance Conclusion

Construction and operation of Alternative 3 would purposefully redirect flood flows away from housing units and inhabited areas while maintaining or enhancing the fluvial transport and infiltration capacity of the Project area. Additional housing units would be protected from the 100-year flood and the surrounding areas would be removed from the FEMA flood hazard zone, thus removing the existing risk to life or property from flooding, and not adding any new risk of exposure. This would be a beneficial impact (Class IV).

Place infrastructure in an area that is subject to inundation by mudflow, and associated risk of damage from mudflow (Criterion WR9).

The Project area consists of generally flat desert washes, bajadas, alluvial plains, and sand corridor. The primary soil types found in stormflow wash load are sand and gravel (Lancaster, 2015). The Project area is not subject to mudflow.

CEQA Significance Conclusion

Based on the topography of the area and soil types, no impact from mudflow would occur.

4.14.2.4 No Action (Alternative 4)

Under the No Action Alternative flood protection for the Thousand Palms area would not occur in the foreseeable future. Therefore, homes and infrastructure would continue to be subject to flooding. Those areas mapped as FEMA Flood Hazard Areas would continue to be mapped as such. No changes would occur to the Classic Club Golf Course or Sun City Palm Desert stormwater drainage system.

During the one percent annual chance flood event, flood waters would not be blocked, and properties located within the inundation area south and west of the Project would be vulnerable to potentially catastrophic flooding. As a result, people who own property located within the inundation area and who have federally backed mortgages would be required to purchase flood insurance. Residents who live in the inundation area would continue to risk loss of property, homes, and life due to uncontrolled floodwaters. New construction on properties in flood hazard areas would continue to be subject to flood-proofing requirements imposed by the Riverside County. If the proposed Project is not built it is possible that another project may be proposed in the future to address the area's flooding problem.

4.14.3 Impact Summary – Water Resources

Table 4.14-2 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to water resources. Refer to Section 4.14.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures.

Table 4.14-2. Summary of Impacts and Mitigation Measures – Water Resources

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
W-1: Construction, operation, and maintenance of the Project could degrade water quality and violate water quality standards or waste discharge requirements.	Class II	Class II	Class II	EC W-1 (Hazardous Spills) EC W-2 (Limit Construction During Precipitation Events) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste) MM PS-5 (Phase I Environmental Site Assessment) MM PS-6 (Worker Environmental Awareness Program)
W-2: Construction and operation of the Project could substantially deplete groundwater supplies, interfere with groundwater recharge, and/or result in contamination of groundwater resources.	Class II	Class II	Class II	EC W-1 (Hazardous Spills) EC W-2 (Limit Construction During Precipitation Events) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste) MM PS-5 (Phase I Environmental Site Assessment) MM PS-6 (Worker Environmental Awareness Program)
W-3: Construction and operation of the Project could substantially deplete or contaminate a public water supply.	Class II	Class II	Class II	EC W-1 (Hazardous Spills) EC W-2 (Limit Construction During Precipitation Events) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-4 (Human Waste) MM PS-5 (Phase I Environmental Site Assessment) MM PS-6 (Worker Environmental Awareness Program)
W-4: Construction and operation of the Project could substantially alter existing drainage patterns or surface runoff which could result in flooding, erosion, and sedimentation on or offsite.	Class IV	Class IV	Class IV	EC SM-1 (Sand Removal and Distribution or Disposal) EC SM-2 (Adaptive Management Plan)

Table 4.14-2. Summary of Impacts and Mitigation Measures – Water Resources

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
W-5: The Project could impact existing or planned stormwater drainage systems.	Class III	Class III	Class III	None required.
W-6: Construction and operation of the Project would impede or redirect flows within a 100-year flood hazard area mapped by FEMA.	Class IV	Class IV	Class IV	None required.
W-7: Construction and operation of the Project would remove downstream areas from the FEMA flood hazard zone.	Class IV	Class IV	Class IV	None required.

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.15 Tribal Cultural Resources

Presented within this section are potential impacts Tribal cultural resources (TCR) associated with construction and O&M of the Project and alternatives. Refer to Section 3.15.1 for a description of the existing cultural resources environment, and Section 3.15.2 for the cultural and Tribal cultural resources regulatory framework applicable to the Project. Additionally, baseline information related to TCRs is presented in Section 3.15.1.2.

4.15.1 Issues Identified During Scoping

Table 4.15-1 below provides a list of cultural and Tribal cultural resources issues raised during the public scoping period for the EIR/EIS (See Appendix A, Public Scoping). Issues are listed by agency, tribal government, or members of the public who provided comments. The table also includes a brief discussion of the applicability of each issue to the environmental analysis and where that issue is addressed in the EIR/EIS.

Table 4.15-1. Scoping Issues Relevant to Cultural and Tribal Cultural Resources

Comment	Consideration in the EIR/EIS
Native American Heritage Commission	
Provided agency guidelines that are required (i.e., AB 52) to be incorporated into the draft CEQA document; requests lead agency coordination with local Native American tribes.	AB 52 compliance details are contained within the Tribal Cultural Resources Sections 3.15.1.2 (Baseline Data Collection Methodology) and 3.15.2 (Regulatory Framework).

4.15.2 Environmental Consequences

Significance Criteria

The following significance criteria for Tribal cultural resources are derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Impacts to Tribal cultural resources are considered significant if the Proposed Project would:

- **Criterion TCR1:** 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 (CRHR), or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?
  - A resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, considering the significance of the resource to a California Native American tribe?

Direct Impacts under CEQA. Direct impacts to TCRs are associated with construction activities that cause disturbance to surface and subsurface deposits (e.g., vegetation removal, grading, or excavation). These activities can result in new or increased erosion, soil compaction, or flooding that change immediate and surrounding soils and landforms of TCRs or TCPs.

Indirect Impacts under CEQA. Indirect impacts to TCRs may result from improved vehicular or pedestrian access that allows more visitors to access TCRs, a subsequent rise in vandalism and the removal of tribally

sensitive materials. Indirect impacts can also result from new structures that alter or diminish the physical, visual, or audible aspects of existing TCRs.

Impact Assessment Methodology. The impacts analysis for TCRs is based on an assessment of information gathered during government-to-government consultation between the CVWD and authorized representatives of two tribes that requested to consult on the Project. These included the Agua Caliente Band of Cahuilla Indians and the Twenty-Nine Palms Band of Mission Indians. A summary of tribal consultations is presented in Section 3.15.1.2 (Baseline Data Collection Methodology). Information gathered during tribal consultation was used to assess the potential for encountering previously unrecorded TCRs in the Project APE.

Tribal Cultural Resources. Tribal consultation conducted for the Project (see Section 3.15.1.2, Baseline Data Collection Methodology) revealed that there are no known TCRs within Reaches 1-4. However, consulting tribes indicated that the Project area is within Tribes' Traditional Use Areas. Consulting tribes identified Reaches 1 through 3 as sensitive areas that may include as-of-yet unidentified TCRs located beneath the ground surface.

4.15.2.1 Proposed Project (Alternative 1)

Direct and Indirect Effects Analysis

Cause a substantial adverse change in the significance of a Tribal cultural resource (Criterion TCR1).

Impact TCR-1: The Project could cause a substantial adverse change in the significance of a Tribal cultural resource that is listed or eligible for listing in the CRHR.

Construction

Direct Effects. Construction of the proposed Project would require clearing, storing, grading, trenching, and excavation to install the levees and channel facilities described in Section 2.2.2 (Construction). As such, Project construction could result in the direct impact to unanticipated Tribal cultural resources including damage and/or displacement of resources, resulting in the loss of information about prehistory. Buried or otherwise obscured Tribal cultural resources may be present within portions of the Project APE associated with ground disturbance.

Any project with ground disturbing components has the potential to directly impact unanticipated Tribal cultural resources. If such resources are encountered, impacts would be reduced through the implementation of ECs C-1 (Unanticipated Discovery) and MM TCR-1 (Tribal Cultural Resources Monitoring).

Indirect Effects. Construction of the proposed Project has potential to cause indirect adverse effects associated with increased erosion, exposure to inclement weather, or visual intrusions into the setting of as-yet unidentified Tribal cultural resources. ECs C-1 and MM TCR-1 would reduce the impacts on as-yet unidentified Tribal cultural resources resulting from Project construction.

Operation and Maintenance

Direct Effects. O&M of the proposed Project as described in Section 2.2.3 (Operation and Maintenance) would require occasional clearing, grading, trenching, and excavation that could directly affect Tribal cultural resources sites by damaging and displacing artifacts and features, resulting in loss of information about prehistory, thereby degrading the preservation value of these resources. However, O&M activities

would have a low potential to directly affect (i.e., damage or destroy) any buried Tribal cultural resources that might be present because it is less than likely that previously undisturbed soils would be disturbed during O&M activities. Therefore, the potential for adverse direct effects on Tribal cultural resources is low. Furthermore, ECs C-1 and Mitigation Measure TCR-1 would minimize the potential for direct impacts from O&M to as-yet-unidentified cultural resources. Therefore, based on the information available, the potential for adverse direct effects on Tribal cultural resources is low.

Indirect Effects. O&M of the proposed Project has potential to cause indirect adverse effects associated with increased erosion, exposure to inclement weather, or visual intrusions into the setting of as-yet unidentified Tribal cultural resources. ECs C-1 and Mitigation Measure TCR-1 would reduce the adverse effects from proposed Project O&M to cultural resources.

ECs and Mitigation Measures Applicable to Impact TCR-1

EC C-1 (Unanticipated Discovery)

MM TCR-1 Tribal Cultural Resources Monitoring. One or more tribal monitors who are authorized by a consulting Tribe under AB 52 shall be present to monitor for Tribal cultural resources full-time during construction work. The tribal monitor(s) will participate in CVWD's Worker Environmental Awareness Program training prior to beginning monitoring work. The tribal monitor is vested with the authority to halt construction work if an inadvertent discovery of a TCR occurs, and will report any concerns immediately to the on-site Project Manager or designated CVWD lead agency tribal liaison.

CEQA Significance Conclusion

No TCRs are known to be located within the Project APE. However, there is always the possibility that unidentified TCRs may be unearthed during construction. Implementation of EC C-1 and Mitigation Measure TCR-1 would reduce potential impacts to unidentified TCRs to less than significant (Class II).

4.15.2.2 Removal of Reach 2 (Alternative 2)

Direct and Indirect Effects Analysis

Cause a substantial adverse change in the significance of a Tribal cultural resource (Criterion TCR1).

Impact TCR-1: The Project could cause a substantial adverse change in the significance of a Tribal cultural resource that is listed or eligible for listing in the CRHR.

Alternative 2 would not cause disturbance to any known TCRs within the APE. However, there is always the possibility that unidentified TCRs located beneath the ground surface may be unearthed during construction. Same as the proposed Project, the Alternative 2 APE is located within Traditional Use Areas of the Agua Caliente Band of Cahuilla Indians and the Twenty-Nine Palms Band of Mission Indians. There is moderate potential that unidentified TCRs could be adversely affected by Alternative 2 activities. Potential impacts would be minimized with implementation of EC C-1 and Mitigation Measure TCR-1.

ECs and Mitigation Measures Applicable to Impact CUL-1

EC C-1 (Unanticipated Discovery)

MM TCR-1 (Tribal Cultural Resources Monitoring)

CEQA Significance Conclusion

No TCRs are known to be located within Alternative 2 APE. However, there is always the possibility that unidentified TCRs may be unearthed during construction. Implementation of EC C-1 and Mitigation Measure TCR-1 would reduce potential impacts to unidentified TCRs to less than significant (Class II).

4.15.2.3 Modified Reach 3 (Alternative 3)

Direct and Indirect Effects Analysis

Cause a substantial adverse change in the significance of a Tribal cultural resource (Criterion TCR1).

Impact TCR-1: The Project could cause a substantial adverse change in the significance of a Tribal cultural resource that is listed or eligible for listing in the CRHR.

Alternative 3 would not cause disturbance to any known TCRs within the APE. However, there is always the possibility that unidentified TCRs located beneath the ground surface may be unearthed during construction. The Alternative 2 APE is located within Traditional Use Areas of the Agua Caliente Band of Cahuilla Indians and the Twenty-Nine Palms Band of Mission Indians. There is moderate potential that unidentified TCRs could be adversely affected by Alternative 3 activities. Potential impacts would be minimized with implementation of EC C-1 and Mitigation Measure TCR-1.

ECs and Mitigation Measures Applicable to Impact CUL-1

EC C-1 (Unanticipated Discovery)

MM TCR-1 (Tribal Cultural Resources Monitoring)

CEQA Significance Conclusion

No TCRs are known to be located within Alternative 3 APE. However, there is always the possibility that unidentified TCRs may be unearthed during construction. Implementation of EC C-1 and Mitigation Measure TCR-1 would reduce potential impacts to unidentified TCRs to less than significant (Class II).

4.15.2.4 No Action (Alternative 4)

Direct and Indirect Effects Analysis

Under the No Action alternative, the proposed Project, or its alternatives, would not be constructed and the surrounding area would remain as part of the existing FEMA flood hazard maps. In the event of catastrophic flooding, unknown buried resources could be inadvertently unearthed either during natural flooding processes or during ground-disturbing activities associated with construction or repair activities. While unknown, it is likely similar procedures and provisions as ECs C-1 and MM TCR-1, may be necessary to address inadvertent discoveries and provide detail on how these activities would be implemented.

4.15.3 Impact Summary – Tribal Cultural Resources

Table 4.15-2 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to cultural and Tribal cultural resources. Refer to Section 4.15.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures, and Table 2-4 for the full text of the environmental commitments.

Table 4.15-2. Summary of Impacts and Mitigation Measures – Tribal Cultural Resources

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
TCR-1: The Project could cause a substantial adverse change in the significance of a tribal cultural resource.	Class II	Class II	Class II	EC C-1 (Unanticipated Discoveries) MM TCR-1 (Tribal Cultural Resources Monitoring)

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

4.16 Energy

The section presents the potential energy impacts associated with construction and O&M of the Project and alternatives. Refer to Section 3.16.1 for a description of the existing energy environmental setting, Section 3.16.2 for the regulatory framework applicable to the Project.

4.16.1 Issues Identified During Scoping

The scoping period was completed in 2016, prior to the addition of energy impact assessment in the CEQA Guidelines, which are contained in the California Code of Regulations. Regardless, no comments were received related to the energy consumption or efficiency, and no comments were received related to conformance with renewable energy or energy efficiency planning policies.

4.16.2 Environmental Consequences

4.16.2.1 Thresholds of Significance

The impact analysis provided below is conducted to address the following CEQA Guidelines Appendix G energy impact questions. The proposed Project would result in a significant impact to energy if it would do any of the following:

- **Criterion E1:** Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
- **Criterion E2:** Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The impact analysis focuses on the motor vehicle fuel[1] use for off-road equipment and on-road vehicles during construction and normal O&M activities.

There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a project of this type. For the purposes of this analysis, the amount of fuel use is estimated and compared to that consumed by all uses/users within Riverside County. Additionally, the expected beneficial long-term energy use effects created by the Project's control of future flooding events are described.

4.16.2.2 Proposed Project (Alternative 1)

Impact E-1: Project could be wasteful, inefficient, or unnecessarily consume energy resources.

The impact analysis focuses on the predominant type of energy use relevant to the proposed Project, which is the motor vehicle fuels necessary for the off-road equipment and on-road vehicles used during project construction and normal O&M activities.

[1] Electricity use during construction would be limited, with the primary uses being (1) direct consumption at the electrically powered on-site batch plant, and (2) indirect consumption related to the water used during project construction (fugitive dust control use and concrete/soil cement mixing use). The on-site batch plant will be electrically powered as that has been determined to be a feasible mitigation measure to reduce significant air quality impacts, and CEQA does not required addressing the impacts of mitigation measures. Project O&M direct electricity use would be negligible or non-existent and indirect electricity use from fugitive dust control water would be minimal. Therefore, the project's construction and O&M impacts related to electricity use are considered minimal are not evaluated further.

The estimated fuel use for the proposed Project and the estimated fuel use for Riverside County are summarized in Table 4.16-1.

Table 4.16-1. Proposed Project Fuel Consumption

Project Period/Fuel Type	Average Annual Consumption[1] (gallons/year)	Countywide Increase[2]
Construction/Diesel Fuel	205,825	0.17%
Construction/Gasoline	27,800	0.0027%
Operation/Diesel	11,972	0.0098%
Operation/Gasoline	707	0.000068%

1 - Construction annual average consumption is total estimated fuel consumption divided by 27 months of construction.
2 - Increase is based on project fuel use estimates divided by the most recent annual (2020) countywide retail sales data as presented in Table 3.16-1.
Source: Appendix B.1; Table 3.16-1.

As indicated in Table 4.16-1 the proposed Project's fuel consumption would increase the diesel fuel use by approximately 0.17 percent and the gasoline use by approximately 0.0027 percent in Riverside County during construction and by approximately 0.0098 percent and the gasoline use by approximately 0.000068 percent in Riverside County during operation. As such, both construction and operation fuel use would have a minimal or negligible effect on local and regional motor vehicle fuel supplies. The project would use off-road equipment with Tier 4 compliant engines and regionally available on-road construction vehicles (such as haul trucks), which would be as energy efficient as comparable construction sites in the region or the state. The Project's environmental commitment to use a concrete batch plant that is electrically powered (EC AQ-1) would reduce the proposed Project's motor vehicle fuel use. Additionally, construction equipment and on-road vehicle fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times, would further reduce the amount of transportation fuel demand during proposed Project construction. Operation vehicles, would be required to meet increasingly stringent state fleet rule requirements, including on-road vehicle electrification that will reduce fuel use over time for proposed Project O&M activities. For these reasons, it is expected that construction and O&M fuel consumption associated with the proposed Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

The project is designed to make maximum reuse of project site materials, which will minimize the import of raw materials and the export of wastes during project construction. Additionally, the project's on-site concrete batch plant will minimize the transportation distance for the large quantity of soil cement used for project construction. Eroded materials removed during project O&M activities in the downwind/ downstream project areas will be recycled to upwind/upstream project areas, rather than being sent to off-site disposal sites. These construction and O&M project features will increase project efficiency substantially.

The proposed Project would also reduce the energy consumption required for repair and storm waste removal construction activities after severe storm events. However, the frequency and activity required by such storm events is unknown.

CEQA Significance Conclusion

Construction and operation of the proposed Project (Alternative 1) would not be wasteful, inefficient, or unnecessarily consume energy resources. Impacts would be less than significant (Class III).

Impact E-2: Project could conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The proposed Project is designed in a manner that is consistent with relevant energy conservation plans designed to encourage efficient use of energy resources. Specifically, the project would reuse construction and operation excavated materials to the maximum feasible extent, reducing the amount of waste trucked to off-site disposal sites. This includes the reuse of excavated materials during construction, such as the use of excavated materials to produce soil cement, and the recycle of operation period excavated wastes to upwind/upstream project areas. This would ensure that the project would conform with applicable planning policies related to energy efficiency, such as General Plan policies OS 16.4 and AQ 5.1 described in Section 3.16.

Additionally, the proposed Project would provide protection for all new developments within the area protected by the Project. It is unknown if the flood control protection area of the proposed Project might be used for future renewable energy projects, but the area in general is ideal for solar energy production and may also be suitable for wind energy production.

CEQA Significance Conclusion

Construction and operation of the proposed Project (Alternative 1) would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts would be less than significant (Class III).

4.16.2.3 Removal of Reach 2 (Alternative 2)

Impact E-1: Project could be wasteful, inefficient, or unnecessarily consume energy resources.

Alternative 2's construction and operation energy use would be similar in manner and quantity to the proposed Project, which is not considered wasteful, inefficient or to unnecessarily consume energy resources. Please see the analysis provided above for Impact E-1 in Section 4.16.2.2.

CEQA Significance Conclusion

Alternative 2's construction and operation energy use would not be wasteful, inefficient or be an unnecessary consumption of energy resources. Impacts would be less than significant (Class III).

Impact E-2: Project could conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Alternative 2's construction and operation would be essentially the same as the proposed Project in relation to conformance with state and local plans for renewable energy and energy efficiency, which would not conflict with such plans. Please see the analysis provided above for Impact E-2 in Section 4.16.2.2.

CEQA Significance Conclusion

Construction and operation of Alternative 2 would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts would be less than significant (Class III).

4.16.2.4 Modified Reach 3 (Alternative 3)

Impact E-1: Project could be wasteful, inefficient, or unnecessarily consume energy resources.

Alternative 3's construction and operation energy use would be similar in manner and quantity to the proposed Project, which is not considered wasteful, inefficient or unnecessarily consume energy resources. Please see the analysis provided above for Impact E-1 in Section 4.16.2.2.

CEQA Significance Conclusion

Alternative 2's construction and operation energy use would not be wasteful, inefficient or be an unnecessary consumption of energy resources. Impacts would be less than significant (Class III).

Impact E-2: Project could conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Alternative 3's construction and operation would be essentially the same as the proposed Project in relation to conformance with state and local plans for renewable energy and energy efficiency, which would not conflict with such plans. Please see the analysis provided above for Impact E-2 in Section 4.16.2.2.

CEQA Significance Conclusion

Construction and operation of Alternative 3 would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts would be less than significant (Class III).

4.16.2.5 No Action (Alternative 4)

Direct and Indirect Effects Analysis

Under the No Action Alternative, Project construction would not occur and flood risk to the area would remain. Flood protection to the developed areas within the FEMA-designated Flood Hazard Area would not be provided. Therefore, no energy consumption would occur from construction and energy consumption and use efficiency for O&M and flood damage repair activities would not change from future baseline conditions, nor would conditions related to conformance with state or local renewable energy or energy efficiency plans change from future baseline conditions.

In the event of catastrophic flooding, the resulting repair and storm waste removal construction activities would result in an increase in energy consumption. However, it is unknown to how often such events may occur or how much subsequent activity would be required. The flood control protections provided by the project could also protect future renewable energy installations if they are constructed within the reach of the Project's flood control protections, and not having proper flood control protections could impede new renewable energy project development in the area protected by the Project.

4.16.3 Impact Summary – Energy

Table 4.16-2 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to Energy. Refer to Section 4.16.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures, and Table 2-4 for the full text of the environmental commitments.

Table 4.16-2. Summary of Impacts and Mitigation Measures – Energy

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
E-1: Project could be wasteful, inefficient, or unnecessarily consume energy resources.	Class III	Class III	Class III	None required.
E-2: Project could conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Class III	Class III	Class III	None required.

N/A: Not Applicable

Class I: Significant impact; cannot be mitigated to a level that is not significant. A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: Significant impact; can be mitigated to a level that is not significant. A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: Adverse; less than significant. A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: Beneficial impact. A Class IV impact represents a beneficial effect that would result from project implementation.

4.17 Wildfire

This section evaluates the impacts relating to wildfire hazards resulting from implementation of the proposed Project. This section identifies the criteria used to determine the significance of environmental impacts and describes the Project's potential impacts relating to wildfire. The Section also considers best management practices to prevent on-site fires and potential spread of wildfires to adjacent lands.

4.17.1 Issues Identified During Scoping

During the public scoping period for the EIR/EIS (see Appendix A, Public Scoping), no issues pertaining to potential impacts to wildfire or wildfire resources were provided by agency or members of the public.

4.17.2 Environmental Consequences

Significance Criteria. The criteria used to determine the significance of the Project's wildfire impacts are based on the criteria identified in the CEQA Guidelines, Appendix G. Project-related impacts would be considered significant if the projects are located in or near state responsibility areas or lands classified as very high fire hazard severity zones and:

- **Criterion WF1:** Substantially impair an adopted emergency response plan or emergency evacuation plan.
- **Criterion WF2:** Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
- **Criterion WF3:** Require the installation or maintenance of associated infrastructure (Such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
- **Criterion WF4:** Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Impact Assessment Methodology. Wildfire hazards associated with the proposed Project are evaluated based on landscape characteristics and the Project's ability to start or exacerbate wildfires. Potential existing hazards are based on review of the Project's locations on Riverside County and CAL FIRE maps to determine their location within FHSZs. Although the Project would not be located in a very high or high FHSZ, the potential for wildfires is still present due to the Project proximity to a Moderate FHSZ within a Federal Responsibility Area. Therefore, this analysis would identify design features and compliance with existing safety procedures, standards, and regulations that would be part of the Project.

4.17.2.1 Proposed Project (Alternative 1)

Direct and Indirect Effects Analysis

Substantially impair an adopted emergency response plan or emergency evacuation plan (Criterion WF1).

Impact WF-1: Construction or operation could temporarily restrict access to or from adjacent land uses and/or restrict the movements of emergency vehicles with no reasonable alternative access routes.

As discussed in Section 4.13 (Transportation), construction of the proposed Project would require temporary closure of Avenue 38 for realignment and temporary lane/road closures to Via Las Palmas, Washington Boulevard, and other roadways. Additionally, construction and maintenance of the Project would include truck trips in volumes that could potentially result in impeding emergency vehicles. As discussed in Table

2-4, EC T-1 (Implement Standard Construction Practices and Safety Precautions) and EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage) would be implemented. Mitigation Measures TR-1, TR-2, and TR-5 would further reduce access restrictions resulting from Project-related activities and traffic (particularly truck trips).

Implementation of the proposed Project would result in the construction of a physical barrier along portions of each Reach. These include levees, channels, culverts, and a sediment basin. This may inhibit some access of emergency vehicles however access roads crossing the structures are proposed for Reach 1 and each Reach would contain access roads on either side of the levee or channel.

ECs and Mitigation Measures Applicable to Impact WF-1

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Section 4.13 (Transportation) for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

MM TR-5 (Coordinate with Emergency Service Providers)

CEQA Significance Conclusion

Construction and maintenance of the proposed Project would require temporary closure and disruptions to roads and/or travel lanes and truck trips could temporarily impede emergency vehicle movements. With the incorporation of EC T-1, EC T-2, and Mitigation Measures TR-1, TR-2, and TR-5, potential impacts to emergency vehicle access and movements would be reduced to a less-than-significant level (Class II).

Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire (Criterion WF2).

Impact WF-2: Due to slope, prevailing winds, and other factors, the project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

According to the CAL FIRE FHSZ Viewer map and the County of Riverside General Plan Safety Element, the Project is not located in a moderate, high, or very high FHSZ and would not be in an area prone to wildfires. The Project site is located in a rural, largely undeveloped desert area approximately 1-2 miles from the nearest moderate FHSZ. The predominant land use of the study area is natural open space, with residential, recreational, commercial, and agricultural uses concentrated in areas just north of Interstate 10.

Small quantities of hazardous chemicals such as fuels and greases would be stored at the sites during construction. They would be stored in appropriate containers in an enclosed and secured location with secondary containment to prevent leakages and accidental fires. This would be ensured through implementation of environmental commitment EC W-1, which would control any accidental spills during construction. Because vegetation on the sites is sparse in most locations, complete vegetation clearance would not be required, but would occur along each proposed Reach. Prior to construction, vegetation would be cleared within the work area and access roadways. Reduction of vegetation would further reduce the availability of flammable fuels around the Project site. This would be ensured through implementation of environmental commitment EC B-1, which would control weeds in the Project area.

The earthen/soil portions of the levees located on the downstream/southern sides of the levee would be periodically sprayed/treated with a dust palliative (soil stabilizer) consisting of a high purity grade co-polymer emulsion, to reduce wind-driven erosion and prevent colonization of vegetation or weeds on the levees. Maintenance activities may include the removal of vegetation along Project levees to provide reliable access to and along the flood control structure and to comply with federal levee requirements. Maintenance may also include selective removal of non-native vegetation within the Project right-of-way.

Due to the presence of sparse vegetation, rural desert location of the Project, and ongoing vegetation maintenance occurring under O&M activities, the potential for the Project to exacerbate wildfire risks and expose nearby residents to the hazards of a wildfire is very low. In addition, environmental commitments PS-1, PS-2, PS-3, and PS-5 would implement best management practices and worker training during construction to reduce the potential for fire ignition and increased wildfire risk.

ECs and Mitigation Measures Applicable to Impact WF-2

EC B-1 (Weed Abatement Program)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the full text of the following mitigation measures:

MM PS-1 (Standard Measures to Reduce Fire Risk)

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-5 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

With implementation of the environmental commitments listed above, the Project would not exacerbate wildfire risks and impacts would be less than significant (Class III).

Require the installation or maintenance of associated infrastructure (Such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment (Criterion WF3).

Impact WF-3: Construction of the Project could exacerbate fire risk from new infrastructure.

Components of the proposed Project include levees, channels, culverts, and a sediment basin. The levees and channels would be comprised of compacted native soil with a layer of soil cement to protect the structures from erosion. The Project would not develop any new public roads that could introduce vehicles to fuels and thus increase the potential for wildfire ignition. Project infrastructure would have no impact with respect to exacerbating fire risks, as they would not include any electricity or other features that could ignite.

ECs and Mitigation Measures Applicable to Impact WF-3

None.

CEQA Significance Conclusion

Project infrastructure would have no impact with respect to exacerbating fire risks, as they would not include any electricity or other features that could ignite. No impact would occur.

Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes (Criterion WF4).

Impact WF-4: The Project would not expose people or structures to significant post-fire flood or landslide risks.

As discussed under Impacts WF-2 and WF-3, the Project is not located in a moderate, high, or very high FHSZ and is not in an area prone to wildfires. The Project site is located in a rural, largely undeveloped desert area approximately 1-2 miles from the nearest moderate FHSZ. According to the Riverside County General Plan, the Project area is not in an area susceptible to landslide (Riverside County, 2021). Additionally, the proposed Project includes a series of flood control improvements to minimize flooding hazards for developed areas in Thousand Palms, California, and the vicinity. This flood improvement is considered beneficial. For these reasons, the Project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

ECs and Mitigation Measures Applicable to Impact WF-3

None.

CEQA Significance Conclusion

The proposed Project is not located in a FHSZ or landslide area. Furthermore, development of the Project would have a beneficial impact with respect to protecting people or structures to significant flood risks. No impacts would occur.

4.17.2.2 Removal of Reach 2 (Alternative 2)

For this alternative Reach 2 would not be constructed. Reaches 1, 3, and 4 would be implemented as described for the proposed Project. Construction activities would be exactly as described in Section 2.2.2 for the proposed Project (Alternative 1), except that no construction would occur along the proposed Reach 2.

Operation and maintenance activities associated with Alternative 2 would be the same as described in Section 2.2.3 for the proposed Project (Alternative 1), except that sand removal activities would not occur along Reach 2.

Direct and Indirect Effects Analysis

Substantially impair an adopted emergency response plan or emergency evacuation plan (Criterion WF1).

Impact WF-1: Construction or operation could temporarily restrict access to or from adjacent land uses and/or restrict the movements of emergency vehicles with no reasonable alternative access routes.

Implementation of Alternative 2 would result in the same impacts as described for the proposed Project. As described for the proposed project the construction of Alternative 2 would require temporary closure of Avenue 38 for realignment and temporary lane/road closures to Via Las Palmas, Washington Boulevard, and other roadways. Construction and maintenance of Alternative 2 would include truck trips in volumes that may result in increased travel times and delays on affected local roadways (see Impact TR-1), which could potentially result in impeding emergency vehicles. Implementation of EC T-1, EC T-2, and Mitigation Measures TR-1, TR-2, and TR-5 would reduce access restrictions resulting from Alternative 2 related activities and traffic (particularly truck trips).

ECs and Mitigation Measures Applicable to Impact TR-8

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Section 4.13 (Transportation) for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

MM TR-5 (Coordinate with Emergency Service Providers)

CEQA Significance Conclusion

Construction and maintenance of Alternative 2 would require the same temporary closure and disruptions to roads and/or travel lanes and truck trips as described for the proposed project. These impacts could temporarily impede emergency vehicle movements. With the implementation of EC T-1, EC T-2, and Mitigation Measures TR-1, TR-2, and TR-5, potential impacts to emergency vehicle access and movements would be reduced to a less-than-significant level (Class II).

Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire (Criterion WF2).

Impact WF-2: Due to slope, prevailing winds, and other factors, the project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Alternative 2 traverses the same lands as the proposed Project, with the exception that Reach 2 would not be constructed. Alternative 2 is not located in a moderate, high, or very high FHSZ and would not be in an area prone to wildfires. Due to the presence of sparse vegetation, rural desert location of Alternative 2, and ongoing vegetation maintenance occurring under O&M, the potential for Alternative 2 to exacerbate wildfire risks and expose nearby residents to the hazards of a wildfire is very low. Implementation of environmental commitments related to accidental spill protocols and weed abatement would ensure Alternative 2 does not exacerbate wildfire risks. In addition, environmental commitments PS-1, PS-2, PS-3, and PS-5 would implement best management practices and worker training during construction to reduce the potential for fire ignition and risk.

ECs and Mitigation Measures Applicable to Impact WF-2

EC B-1 (Weed Abatement Program)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the full text of the following mitigation measures:

MM PS-1 (Standard Measures to Reduce Fire Risk)

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-5 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

With implementation of the environmental commitments listed above, Alternative 2 would not exacerbate wildfire risks and impacts would be less than significant (Class III).

Require the installation or maintenance of associated infrastructure (Such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment (Criterion WF3).

Impact WF-3: Construction of the Project could exacerbate fire risk from new infrastructure.

Components of Alternative 2 include levees, channels, culverts, and a sediment basin. Reaches 1, 3, and 4 would be implemented as described for the proposed Project. The levees and channels would be comprised of compacted native soil with a layer of soil cement to protect the structures from erosion. Alternative 2 would not develop any new public roads that could introduce vehicles to fuels and thus increase the potential for wildfire ignition. The new infrastructure would have no impact with respect to exacerbating fire risks, as they would not include any electricity or other features that could ignite.

ECs and Mitigation Measures Applicable to Impact WF-3

None.

CEQA Significance Conclusion

The infrastructure associated with Alternative 2 would have no impact with respect to exacerbating fire risks, as they would not include any electricity or other features that could ignite. No impact would occur.

Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes (Criterion WF4).

Impact WF-4: The Project would not expose people or structures to significant post-fire flood or landslide risks.

As discussed under Impacts WF-2 and WF-3, Alternative 2 is not located in a moderate, high, or very high FHSZ and would not be in an area prone to wildfires. According to the Riverside County General Plan, Alternative 2 is not in an area susceptible to landslide (Riverside County, 2021). Alternative 2 includes a series of flood control improvements to minimize flooding hazards for developed areas in Thousand Palms and the vicinity. This flood improvement is considered beneficial. For these reasons, Alternative 2 would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

ECs and Mitigation Measures Applicable to Impact WF-3

None.

CEQA Significance Conclusion

Alternative 2 is not located in a FHSZ or landslide area. Furthermore, the development of Alternative 2 would have a beneficial impact with respect to protecting people or structures from significant flood risks. No impacts would occur.

4.17.2.3 Modified Reach 3 (Alternative 3)

Direct and Indirect Effects Analysis

Under this alternative there are two possible alignments of Reach 3. Each would be adjusted so the upstream portion of the levee angles more to the west/southwest compared to the proposed Project (Figure 2-9, Alternative 3a and 3b Alignments). Two options for this alternative are under consideration. Option A would tilt the levee portion of Reach 3 approximately six to 10 degrees to the west/southwest

and Option B would tilt the levee approximately 17 degrees to the west/southwest respectively when compared to the levee for the proposed Project (Alternative 1).

Reaches 1, 3, and 4 would be implemented as described for the proposed Project. Construction activities would be exactly as described for the proposed Project (Alternative 1), except that the physical location of the Reach would be changes.

Operation and maintenance activities associated with Alternative 3 would be the same as described in for the proposed Project (Alternative 1).

Substantially impair an adopted emergency response plan or emergency evacuation plan (Criterion WF1).

Impact WF-1: Construction or operation could temporarily restrict access to or from adjacent land uses and/or restrict the movements of emergency vehicles with no reasonable alternative access routes.

Construction of Alternative 3 would require the same temporary closure of Avenue 38 for realignment and temporary lane/road closures to Via Las Palmas, Washington Boulevard, and other roadways as described for Alternative 1. Construction and maintenance of Alternative 3 would include truck trips in volumes that may result in increased travel times and delays on affected local roadways (see Impact TR-1), which could potentially result in impeding emergency vehicles. The implementation of EC T-1, EC T-2, and Mitigation Measures TR-1, TR-2, and TR-5 would reduce access restrictions resulting from Alternative 2 related activities and traffic (particularly truck trips).

ECs and Mitigation Measures Applicable to Impact TR-8

EC T-1 (Implement Standard Construction Practices and Safety Precautions)

EC T-2 (Limit Large Vehicle Use, Lane Closures, and Road Damage)

See Section 4.13 (Transportation) for the full text of the following mitigation measures:

MM TR-1 (Construction and Maintenance Traffic Management Plan)

MM TR-2 (Traffic Control Plan for Lane Closures and Detours)

MM TR-5 (Coordinate with Emergency Service Providers)

CEQA Significance Conclusion

Construction and maintenance of Alternative 3 (Option A or B) would require the same temporary closure and disruptions to roads and/or travel lanes and truck trips that could temporarily impede emergency vehicle movements as Alternative 1. With the implementation of EC T-1, EC T-2, and Mitigation Measures TR-1, TR-2, and TR-5, potential impacts to emergency vehicle access and movements would be reduced to a less-than-significant level (Class II).

Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire (Criterion WF2).

Impact WF-2: Due to slope, prevailing winds, and other factors, the project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Alternative 3 traverses the same lands as the proposed Project and is not located in a moderate, high, or very high FHSZ. Alternative 3 is not located in an area prone to wildfires. Due to the presence of sparse vegetation, the rural desert location of Alternative 3, and ongoing vegetation maintenance occurring

under O&M, the potential for Alternative 3 to exacerbate wildfire risks and expose nearby residents to the hazards of a wildfire is very low. Implementation of environmental commitments related to accidental spill protocols and weed abatement would ensure Alternative 3 does not exacerbate wildfire risks. In addition, environmental commitments PS-1, PS-2, PS-3, and PS-5 would implement best management practices and worker training during construction to reduce the potential for fire ignition and risk.

ECs and Mitigation Measures Applicable to Impact WF-2

EC B-1 (Weed Abatement Program)

EC W-1 (Hazardous Spills)

See Section 4.11 (Public Safety) for the full text of the following mitigation measures:

MM PS-1 (Standard Measures to Reduce Fire Risk)

MM PS-2 (Refueling Practices)

MM PS-3 (Worker Training)

MM PS-5 (Worker Environmental Awareness Program)

CEQA Significance Conclusion

With the implementation of the environmental commitments listed above, Alternative 3 would not exacerbate wildfire risks and impacts would be less than significant (Class III).

Require the installation or maintenance of associated infrastructure (Such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment (Criterion WF3).

Impact WF-3: Construction of the Project could exacerbate fire risk from new infrastructure.

Components of Alternative 3 include the same types of levees, channels, culverts, and sediment basin as described for Alternative 1. The levees and channels would be comprised of compacted native soil with a layer of soil cement to protect the structures from erosion. Alternative 3 would not develop any new public roads that could introduce vehicles to fuels and thus increase the potential for wildfire ignition. Infrastructure would have no impact with respect to exacerbating fire risks, as they would not include any electricity or other features that could ignite.

ECs and Mitigation Measures Applicable to Impact WF-3

None.

CEQA Significance Conclusion

The infrastructure associated with Alternative 3 would have no impact with respect to exacerbating fire risks, as they would not include any electricity or other features that could ignite. No impact would occur.

Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes (Criterion WF4).

Impact WF-4: The Project would not expose people or structures to significant post-fire flood or landslide risks.

As discussed under Impacts WF-2 and WF-3, Alternative 3 is not located in a moderate, high, or very high FHSZ and is not located in an area prone to wildfires. According to the Riverside County General Plan, Alternative 3 is not in an area susceptible to landslide (Riverside County, 2021). Alternative 3 includes a

series of flood control improvements to minimize flooding hazards for developed areas in Thousand Palms and the vicinity. This flood improvement is considered beneficial. For these reasons, Alternative 3 would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

ECs and Mitigation Measures Applicable to Impact WF-3

None.

CEQA Significance Conclusion

Alternative 3 is not located in a FHSZ or landslide area. Furthermore, development of Alternative 3 would have a beneficial impact with respect to protecting people or structures from significant flood risks. No impacts would occur.

4.17.2.4 No Action (Alternative 4)

Direct and Indirect Effects Analysis

Under the No Action Alternative, the flood control project would not be constructed. No changes to the existing vegetation in the area is anticipated that would substantially increase the risk of wildfire hazards. If the proposed Project is not built it is possible that another project may be proposed in the future to address the area's flooding problem. It is unknown if future project(s) would share design features with the proposed Project or where such a project would be located. Under a scenario where catastrophic flooding occurs, adverse impacts are not anticipated to be influenced by, or exacerbated by, wildfire because the Project area is not located in a high FHSZ. However, the scale, duration, and location of such flooding impacts is unknown and speculative. Therefore, the No Project Alternative would not result in any direct wildfire impacts.

4.17.3 Impact Summary – Wildfire

Table 4.17-1 summarizes the direct and indirect environmental impacts of the Project and the alternatives related to wildfire. Refer to Section 4.17.2 (Environmental Consequences) for the entire environmental analysis and the full text of recommended mitigation measures.

Table 4.17-1. Summary of Impacts and Mitigation Measures – Wildfire

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
WF-1: Construction or operation could temporarily restrict access to or from adjacent land uses and/or restrict the movements of emergency vehicles with no reasonable alternative access routes.	Class II	Class II	Class II	None required.
WF-2: Due to slope, prevailing winds, and other factors, the project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	Class III	Class III	Class III	EC B-1 (Weed Abatement Program) EC W-1 (Hazardous Spills) MM PS-1 (Standard Measures to Reduce Fire Risk) MM PS-2 (Refueling Practices) MM PS-3 (Worker Training) MM PS-5 (Worker Environmental Awareness Program)

Table 4.17-1. Summary of Impacts and Mitigation Measures – Wildfire

Impact	Impact Significance			Mitigation Measures/ECs
	Alt. 1: Proposed Project	Alt. 2: Removal of Reach 2	Alt. 3: Modified Reach 3	
WF-3: Construction of the Project could exacerbate fire risk from new infrastructure.	No Impact	No Impact	No Impact	None required.
WF-4: The Project would not expose people or structures to significant post-fire flood or landslide risks.	No Impact	No Impact	No Impact	None required.

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.

5. Cumulative Effects

5.1 Introduction

Preparation of a cumulative impact analysis is required under both CEQA and NEPA. CEQA and NEPA identify three types of potential impacts: direct, indirect, and cumulative. A "cumulative impact" is an impact on the environment that results from the combined effect of the proposed action (Project) and other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such other actions.

Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR §1508.7). Under NEPA, both context and intensity are considered. Among other considerations when considering intensity is "[w]hether the action is related to other actions with individually minor but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts" (40 CFR §1508.27[b][7]). Additionally, the Council on Environmental Quality (CEQ) recommends that agencies "look for present effects of past actions that are, in the judgment of the agency, relevant and useful because they have a significant cause-and-effect relationship with the direct and indirect effects of the proposal for agency action and its alternatives."

Under the State CEQA Guidelines, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts" (14 CCR §15130[a][1]; CEQA Guidelines §15355). An EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects, is "cumulatively considerable" (14 CCR §15130[a]). An EIR may determine that a project's contribution to a significant cumulative impact will be rendered "less than cumulatively considerable" and thus not significant when a project is required to implement or fund its fair share of a mitigation measure(s) designed to alleviate the cumulative impact (14 CCR §15130[a][3]).

Incremental effects are to be "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (14 CCR §15164[b][1]). Together, these projects comprise the cumulative scenario that forms the basis of the cumulative impact analysis. Both the severity of impacts and the likelihood of their occurrence are to be reflected in the cumulative discussion, "but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion of cumulative impacts shall be guided by standards of practicality and reasonableness and shall focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact" (14 CCR §15130[b]). This includes the requirement that an environmental impact report (EIR) take into account all "past, present, and reasonably foreseeable future projects" (CEQA Guidelines §§15355[b], 15130[b][1][A]).

The cumulative analysis must be in sufficient detail to be useful to the decision maker in deciding whether, or how, to alter a project to lessen cumulative impacts. Most of the projects listed in the cumulative projects table below (Table 5-1) have been, are, or will be required to undergo their own independent environmental review under CEQA, NEPA, or both. Any contribution from the Project to the overall cumulative impact that is cumulatively considerable (i.e., has a significant incremental effect) would be required to be reduced, avoided, or minimized through the application and implementation of mitigation measures. The net effect of these mitigation measures is assumed to be a general lessening of the

potential for a contribution to cumulative impacts. The key consideration is whether the remaining physical change or effect on the environment represents an adverse environmental impact.

5.2 Methodology

The list of cumulative projects provided in Table 5-1 and shown in Figure 5-1 (Cumulative Projects) includes projects recently completed, in the process of construction, or currently under review within the Project vicinity. The area over which the cumulative scenario is evaluated varies by resource, as the nature and range of potential effects vary by resource (e.g., air quality impacts tend to disperse over a large area or region while noise impacts only affect a localized area). The geographic scope for the analysis of cumulative impacts is identified for each resource.

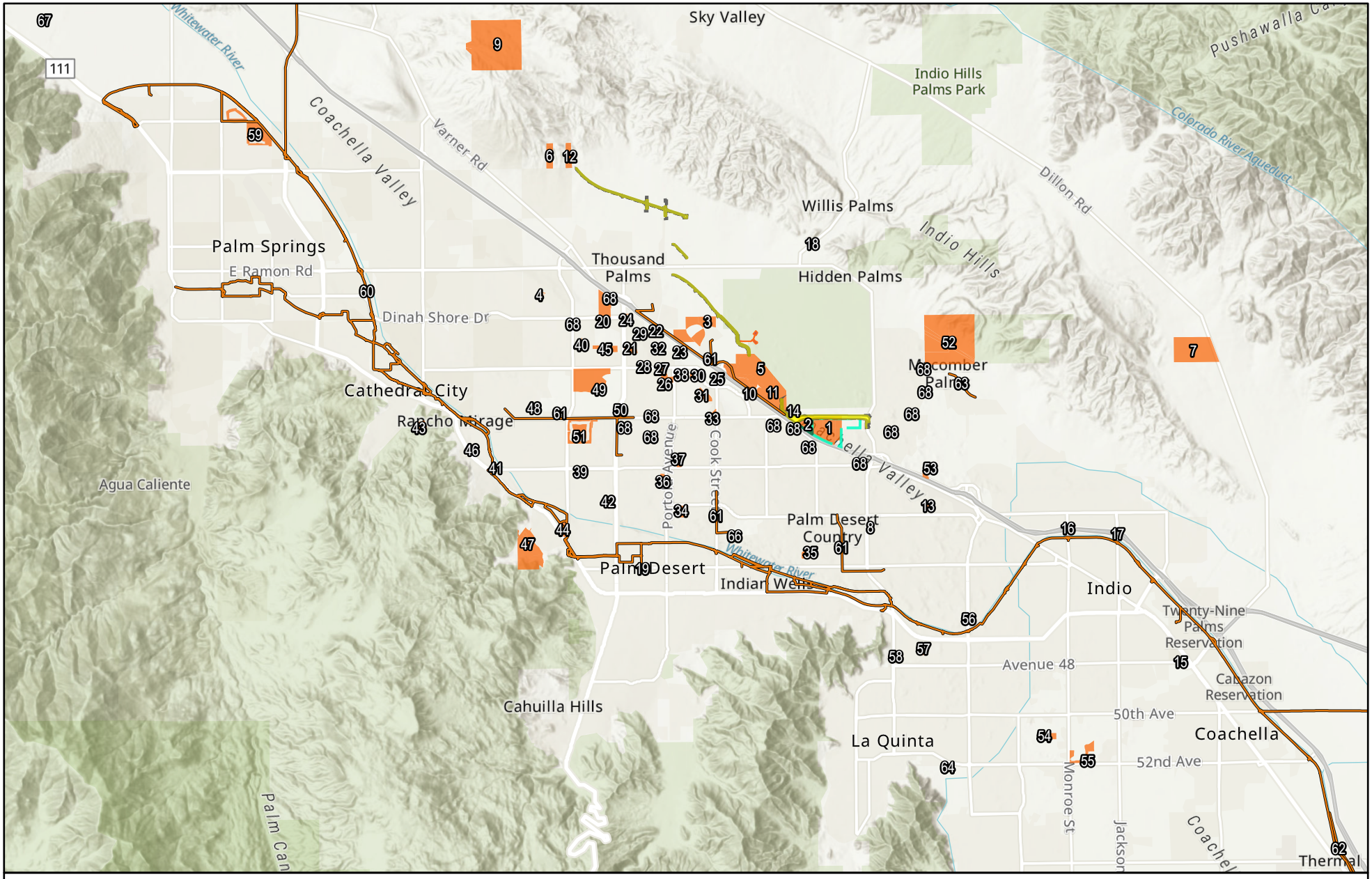
In considering the potential for cumulative impacts to result from the combination of the proposed Project and the projects listed in Table 5-1, each issue area analysis considers the following questions:

1. Does a relationship exist such that the impacts from the Project might affect or be affected by impacts from other actions?
2. If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the Project is considered alone?

Based on consideration of the two questions listed above, cumulative impacts are characterized in comparison with baseline conditions, and with the impact analyses provided in Chapter 4. The Project's potential to contribute to cumulative impacts is considered with the implementation of all mitigation measures proposed to address the direct and indirect impacts of the Project. If it is determined that the Project would make a substantial contribution to a cumulative impact regardless of proposed mitigation, additional mitigation is identified where feasible.

5.3 Applicable Cumulative Projects

Existing and future projects identified in Table 5-1, which are considered to result in potentially cumulative impacts, are under the jurisdiction of the CVWD; County of Riverside; the cities of Palm Desert, Rancho Mirage, Indio, and Palm Springs; U. S. Fish and Wildlife Service (USFWS); Bureau of Land Management (BLM–Palm Springs); and Coachella Valley Association of Governments (CVAG). In compiling this list, additional agencies and organizations were contacted to determine all potential cumulative projects, including the community of Bermuda Dunes; cities of Cathedral City, Palm Desert, Indian Wells, and La Quinta; Coachella Valley National Wildlife Refuge; Bureau of Indian Affairs (Agua Caliente Reservation); and California State Lands Commission. Table 5-1 contains a full list of applicable cumulative projects and Figure 5-1 shows the location of these projects relative to the proposed Project. For each project in the list, the following information (to the extent available) is listed in Table 5-1: map identification number, lead agency, project name, location, status, description, and timeframe (for construction).



Sources: Riverside County, 2021; City of Palm Desert, 2021; City of Rancho Mirage, 2021; City of Indio, 2021; City of Palm Springs, 2021; USFWS, 2021; BLM, 2021; CVAG, 2021; Coachella Valley National Wildlife Refuge, 2021

1 0 2 Miles

- Permanent Impact Area
- Temporary Impact Area
- Temporary Soil Deposition Area
- Temporary Concrete Batch Plant/Marshalling Yard
- Existing FWS Soil Deposition
- Cumulative Projects
- Cumulative Linear Projects
- # Map ID - *See Table 5-1 for details.*

Figure 5-1

Cumulative Projects

Table 5-1. Cumulative Project List

Map ID	Project ID and Type	Project Name	Location	Description and Status (if applicable)
RIVERSIDE COUNTY				
1	TR35058/SP338S1 Residential	Specific Plan 338 (Mirasera)	Northeast of Varner Road, South of 38th Avenue, West of Washington Street (APN: 626-150-025, 626-150-003, 626-150-004, 626-150-005, 626-150-006, 626-150-007, 626-150-008, 626-150-009, 626-150-010, 626-150-011, 626-150-012, 626-150-013, 626-150-014)	Community consisting of up to 1,756 residential units of varying density, single-family, townhomes, condominiums, and flats; 122,700 s.f. of retail or office space; a 200-room hotel; 228,700 s.f. of business park/office development and 187,300 s.f. of community retail space. Status: Not Active.
2	TR34651/SP360A1 Residential	Specific Plan 360 (Valanté)	Northeast of Varner Road, South of 38th Ave, West of Specific Plan 338 (Mirasera). (APN: 626-130-019)	Community consisting of up to 460 single-family detached and attached dwelling units; over 9 acres of neighborhood park and open space; and approximately 20 acres for regional drainage infrastructure improvements and major circulation improvements. Conceptual Land Use Plan. Status: Not Active.
3	D SP00392 CZ 07893, EA 40070, PP 17668 Community Plan SP00392, GPA01133, CZ07893, TR37434 Community Plan	Ivey Palms Specific Plan 392 Environmental Impact Report	North of Varner Road, South of Calle Tosca/Ramon Road, East of Bell Road, West of Jack Ivey Road (APN: 694-050-001, 694-050-006, 694-120-002, 694-120-010, 694-120-011, 694-050-011, 694-050-012, 694-050-013)	Specific plan with residential, mixed use, park, and recreation. Status: Applied; In Review. Amendment to General Plan Amendment No. 1133 (GPA01133), Change of Zone No. 7893 (CZ07893), Specific Plan No. 392 (SP00392), and Tentative Tract No. 37434 (TR37434) to facilitate the development of 600 single-family residences on 98.0 acres, 2.3-acre electrical substation site, 6.4-acre community park, 5 0.5-acre parks, 3.5-acre driving range, 5.7 acres of open space for internal roadways on approximately 14.2 acres, and associated on-site and off-site utility infrastructure. Also plans to designate a total of 7 planning areas, totaling 69.6 acres which would accommodate the development of mixed-use buildings with up to 900 multiple-family dwelling units and 378,970 square feet of commercial retail space. In addition, a 14.5-acre planning area would be offered to the PSUSD for development of a k-5 elementary school or approximately 80 single-family swelling units if PSUSD does not develop in Planning Area 7. Off-site improvements associated include construction of a secondary roadway access to Planning Area 7 via Cook Street and construction of an off-site sewer improvement in Varner Road between Cook Street and Ivey Ranch Country Club. Status: Applied.

Table 5-1. Cumulative Project List

Map ID	Project ID and Type	Project Name	Location	Description and Status (if applicable)
4	D SP00391, CZ 07890, GPA 01159 Community Plan PDP 17001, TTM 36809 Residential	Specific Plan 391 Pulte Homes/ Del Webb	South of Ramon Road, north of Dinah Shore Drive, east of Bob Hope Drive, west of Los Alamos Road (APN: 673-120-025)	Specific plan with residential, mixed use, park, and recreation on approximately 321 acres and with a maximum dwelling unit count of 1,200. Status: Applied; Active. A Preliminary Development Plan for development of an age-restricted (55+) residential community of up to 1,200 dwelling units consisting of ten (10) floor plans, three elevations. Common area amenities include approximately 85 acres of greenbelt open space with numerous amenities, walking and hiking trails, a clubhouse, swimming pools, tennis, bocce and pickle ball courts, and common area landscaping. Status: Under Construction.
5	SP0034A02, GPA200005, OAPL2001271, PPT2000021 TPM38040, SCH #2005011054 Community Planning	Northstar Palm Desert Specific Plan (Specific Plan No. 343)	(APN: 695-100-015, 695-100-002, 695-100-003, 695-100-017, 695-100-001)	Amendment to Northstar Specific Plan 343 proposed to create a new planning area: planning area 11 to permit the development of a new arena & event center. Existing Planning Area 8 primarily will be reduced in size to accommodate planning area 11 and planning areas 4, 6b, and 7 would also have boundary changes to accommodate planning area 11. The specific plan amendment also proposes to incorporate guidelines for signs specific to planning area 11, including guidelines for digital signage. Status: In Review, BOS.
6	P SMP00204 0000 Mining	Surface Mine	East of Rio del Sol Road (APN: 670-040-003)	An ongoing surface mining project permitted to continue operation through 2022. Status: Ongoing.
7	RCL00152R2, State ID#91-33-0063 Private	Simon Mine (CEQ 190054)	west of Dillion Road, south of Old Aqueduct Road (APN: 745-350-001)	Revised reclamation plan prepared by Webber & Webber Mining Consultations for the expansion of existing surface mine (Simon Mine) onto 261.37 acres. Status: Applied. (LDC Review).
8	CUP210010, PM 6810 Commercial	CEQ 210025	42500 Washington St. Indio, CA 92203 (APN: 609-020-024)	Approximately 3,250 square foot drive through restaurant and an approximately 9,990 square foot childcare concept known as the learning experience with an outdoor playground. Each building will be built on its own parcel through a new tentative parcel map. The subject property will be rezoned from its current designation of residential to C1CP. Status: In Review.
9	EA39216 Community Plan	Environmental Assessment for Edom Hill Landfill Final/Post Closure Plan	70100 Edom Hill Desert Hot Springs, CA 92241 (APN: 659-200-002, 659-180-028, 659-190-017)	Edom Hill Landfill, a municipal solid waste landfill, was open from 1967 to 2004. Final closure and post-closure include the construction of final cover systems and ancillary structures, such as sediment basins. Post-closure includes environmental monitoring and maintenance for a period of not less than 35 years. Status: Applied.

Table 5-1. Cumulative Project List

Map ID	Project ID and Type	Project Name	Location	Description and Status (if applicable)
10	GPA200005, TR34484 Community Plan	Coachella Valley Plan General Plan Amendment	(APN: 695-100-013, 695-100-007, 695-100-004, 695-100-005, 695-100-009, 659-100-011, 695-100-006, 695-100-008, 695-100-009, 695-100-010, 695-100-014)	The General Plan Amendment is a proposal to modify the land use designations of the General Plan to match those as proposed by the specific plan amendment, in particular to designate the proposed Planning Area 11 area as commercial tourist, and to modify western Coachella Valley Area plan policy 15.4 to allow for alternative standards for free-standing signs within specific plans with the inclusion of the following provision "e. The provisions of this policy shall not apply to signs and development located in a specific plan where the specific plan has sign design guidelines or standards". Status: Applied; BOS.
11	GPA200005, TR 34484 Community Plan	Coachella Valley Arena	75700 Varner Rd. Thousand Palms, CA 92276 (APN: 695-100-010)	The Coachella Valley Arena is an Oak View Group project that will support privately funded sports entertainment (such as hockey). Status: Under Construction, Complete in late 2022.
12	SMP00147S01 Mining	Sam Jones Mine	27925 Rio del Sol Rd. Thousand Palms, CA 92276 (APN: 670-040-007)	SC is submitted to close the Sam Jones Mine and allow the existing inert landfill to continue to fill the mined area. The inert landfill has an approved conditional use permit (CUP3319). The CUP has conditions of approval for the implementation and completion of the landfill; allowing mine closure without reclamation completion at this time. The conditional use permit will be approved entitlement for this property after the mine closure is complete. Status: Applied.
13	CZ1900007, TTM37735, PPN210006 Residential	CEQ190031	North of 42nd Ave and Port Royal Ave, South of Aerodrome Ave, West of Hopewell Dr, and East of Hermitage Dr in Bermuda Dunes (APN: 607-312-034)	Proposes to modify the existing Controlled Development Areas (W-2) Zone to the General Residential (R-3) Zone and proposes to subdivide 3.70 acres into 18-detatched single-family residential condominium units with common open space, retention basin, and desert landscaping. Approximately 13-single-story and approximately 5 two-story detached single-family residential condominiums ranging in size from approximately 1742 square feet to 2063 square feet each. Status: In Review.
14	SB1-1718, SB1 Gas Tax Resurfacing, County of Riverside Transportation Department	Varner Road Resurfacing	Monterey Ave to Cook Street and 38th Avenue to Berkley Dr	The County of Riverside Transportation Department is proposing to resurface approximately 4.3 miles of Varner Road from Monterey Avenue to Cook Street and from 38th Avenue to Berkey Drive. Varner Road is classified as both a Major and Secondary Highway in the County of Riverside's General Plan. Varner Road is a two to four lane road and currently ranges from 24 to 100 feet wide with dike and curb/gutter along various segments of the roadway. Status: Completed (June 2021).

Table 5-1. Cumulative Project List

Map ID	Project ID and Type	Project Name	Location	Description and Status (if applicable)
15	SB1 Gast Tax Resurfacing, County of Riverside Transportation Department	Avenue 48 Widening	Avenue 48 from Van Buren St eastward to Dillon Road	The County of Riverside Transportation Department (County), in cooperation with the City of Coachella (City) and the Coachella Valley Association of Governments (CVAG), are proposing to widen Avenue 48 from Van Buren Street eastward to Dillon Road, a total distance of approximately 0.5 miles. The project will widen Avenue 48 from two lanes to five lanes to accommodate for one additional westbound lane and 2 additional eastbound lanes with a raised median. Status: Construction Start Winter 2021.
16	EA080K730, PN0800000368 Community	Interstate 10/Monroe Street Interchange Improvement Project	I-10 and Monroe St Interchange in the City of Indio	The County of Riverside (County), in cooperation with the California Department of Transportation (Caltrans) and the City of Indio, proposes to reconstruct and widen the Monroe Street interchange on the I-10 freeway to improve traffic flow. Status: Design Phase Completion in 2023.
17	EA080M910, PN0800020208 Community	Interstate 10/Jackson Street Interchange Project	I-10 and Jackson St Interchange in the City of Indio	The County of Riverside (County), in cooperation with the California Department of Transportation (Caltrans) and the City of Indio, proposes to reconstruct and widen the Jackson Street interchange on the I-10 freeway to improve traffic flow. Status: Environmental Clearance Phase Fall 2021.
18	SCH2021050392, RCP WO No. A7-0394, Community	Thousand Palms Canyon Road Widening and Resurfacing Project	Thousand Palms Canyon Rd, between Ramon Rd/Washington St and Dillon Rd	The Riverside County Transportation Department proposes to widen and resurface Thousand Palms Canyon Rd, between Ramon Rd/Washington St and Dillon Rd, in the Thousand Palms area of Riverside County. Thousand Palms Canyon Rd is a 2-lane collector that travels in the North-South directions. Existing pavement width is approximately 22' wide with 11' through lanes and a 1' paved shoulder. There is graded dirt shoulder of varying width along both sides of the road bounded by dirt berms. There is a half-mile segment of Thousand Palms Canyon Rd adjacent to the Coachella Valley Nature Preserve that is 32' wide, with 12' through lanes and 4' paved shoulders, with graded shoulders bounded by dirt berms. Status: In Review, Construction Start Summer 2022.
City of Palm Desert				
19	PP 20-0003 Commercial	Chandi Plaza	73-515 Fred Waring Drive	Proposed 3-story mixed-use building with 14,000 sq. ft. of ground floor retail and two-floors of 60-unit apartments, at the southeast corner of San Pablo Avenue and Fred Waring Drive. Status: In Review.
20	SP 18-0001, GPA 18-0001, CZ 18-0004, TPM 37575 Residential and Commercial	Landmark	Vacant 74+ acre parcel located at the northeast corner of Key Largo Ave and Dinah Shore Drive	A vacant 74+ acre parcel to be subdivided into eight parcels for the development of a 266,000 sq. ft. storage facility, up to 1,500 multi-family units and 75,000 sq. ft. of commercial/retail space. Status: In Review.

Table 5-1. Cumulative Project List

Map ID	Project ID and Type	Project Name	Location	Description and Status (if applicable)
21	PCD 16-000342 TPM 37234 Commercial	MCPP Palm Desert	Vacant 32+ acre parcel bounded by Monterey Avenue to west, "A" Street to the South, Dick Kelly Drive to the North, and Gateway Drive to the East	A vacant 32+ acre parcel to be subdivided into 4 parcels. Two parcels are proposed along Monterey Avenue for up to 120,000 sq. ft. of commercial development. Two parcels are proposed along Gateway Drive for up to 384 multi-family units. Status: In Review.
22	PP 19-0010 Commercial	Alpha Holdings	73-725 Dinah Shore Drive	The project is requesting approval for a new 17,900 sq. ft., two-story, multi-tenant light industrial building on a vacant 1.21-acre parcel. Status: Approved.
23	DA/GPA/CZ/EA 14-332, TPM 36792, TTM 36783 Commercial DA/GPA/CZ/EA 14-332, TPM 36792, TTM 36793 Residential	Millennium Specific Plan	152 acres north of Gerald Ford Drive, south of Pacific Union Railroad, east of Portola Avenue and west of Technology Drive	Mitigated Negative Declaration of Environmental Impact, a Development Agreement, a Specific Plan, a General Plan Amendment, and a Change of Zone to establish nine (9) parcels, within the Specific Plan Area, and a Tentative Tract Map to subdivide 38+ acres into 166 single-family home lots, located on 152 acres north of Gerald Ford Drive, south of pacific Union Railroad, east of Portola Avenue and west of Technology Drive. Status: Under Construction
24	SP/PP/CUP 16-188 TPM 37157 Commercial	Monterey Crossing	Northeast corner of Monterey Avenue and Dinah Shore Drive	An 18-acre regional shopping center to include 130,000 sq. ft. of commercial, dinning, and automotive uses and two four-story hotels (Holiday Inn Express and a future hotel to be named later) along Technology Drive. Plans call for 96-room Holiday Inn Express and 90-room 2nd hotel. Improvements include new parking and landscaping. Status: Under Construction.
25	PP/CUP 19-0007 Commercial	La Quinta Brewery	74-714 Technology Drive	13,300 sq. ft. brewery, distribution, taproom, and beer garden. Status: Under Construction.
26	GPA 21-0001, PP 21-0001, TTM 37993 Residential	Montage	APN: 694-300-001, 002, 005, 014, 015	Proposed 63-unit single-family residential development on 24 acres at the intersection of Shepard Lane and Julie Drive. Status: In Review.
27	CZ 20-0002, PP 20-0010, TTM 20-0003 Residential	Desert Luxury Apartments	APN: 694-300-003	Proposed 48-unit condominium/apartment project with pool and recreational amenities at the southwest corner of Shepard Lane and Gerald Ford Drive. Status: In Review.
28	TT 31071 Residential	Dolce Development	Northeast corner of Gerald Ford Drive and Gateway Drive (APN: 653-260-030)	Construction of 159 single-family lots, 11 lots for common area. To date, 27 homes have been completed. Status: Approved, Not Active.
29	CZ 05-03, TT 34179, PP 05-02 Residential	Falling Waters	73-600 35th Avenue (APN: 653-250-007)	Construction of 247 residential condominium units on a 20-acre site. To date, 20 homes have been completed. Status: Approved, Not Active.

Table 5-1. Cumulative Project List

Map ID	Project ID and Type	Project Name	Location	Description and Status (if applicable)
30	DA 06-02, TT 32655, TPM 31730 Residential	Desert Wells	Parcel 9 of TPM 31730 between Portola Ave/Cook St and Frank and Sinatra Dr/Gerald Ford Dr	Approval of 270 single-family lot subdivision with open space amenities. The site has been rough graded but no homes have been constructed to date. Status: Approved, Not Active.
31	PP 06-05 Amendment #1, THE 10-434, TT 36342 Residential	University Park	Northwest corner of University Park Drive and College Drive (APN: 694-190-039, 694-190-044, 694-190-046, 694-190-048)	Approval of an amendment to approved Tentative Tract map 36342 for 196 residential homes to allow: 11 condominium lots totaling 78 condominium units; 69 single-family attached homes; 49 single-family detached homes; and a private recreation facility. Status: Approved, Not Active.
32	PP 14-170, TT 36351 Residential	Sage	South side of Dick Kelly Drive, between Cortesia Way and Dinah Shore Drive (APN 694-130-024)	Approval of a 30+ acres subdivision for 111 single-family home lots and one 8+ acre lot for future multi-family development. Status: Under Construction
33	PP 17-035, TTM 37339 Residential	Villas at Cook Street	Northwest corner of Frank Sinatra Drive and Cook Street	Approval of 80 two-story detached residential units with open space amenities. A 1.3-acre parcel is provided at the corner of Frank Sinatra Drive and Cook Street for commercial use. Status: Approved, Not Active.
34	PP 16-394 Residential	The Sands Apartments	74-555 Hovely Lane East	388-unit apartment complex on 18 acres located at the southwest corner of Jasmine Court and Hovely Lane West Status: Waiting State Financing
35	CZ 16-280, PP 16-280, CUP 16-280 Residential	Palm Desert Country Club Former Executive Golf Course	Palm Desert Country Club former Executive Golf Course (APN 637-190-121, 024, 027)	Conversion of a former 9-hole golf course into 69 condominium units with open space and recreational amenities. Status: Under Construction.
36	PP 18-0004 Residential	Avenida Senior Living	40-445 Portola Avenue	161-unit skilled nursing facility at Villa Portofino Status: Under Construction.
37	CZ 18-0002, PP 18-0003 Residential	Wolff Senior Living	74-300 Country Club Drive	A 164 independent senior living facility with clubhouse building and amenities. Status: Under Construction.
38	PP 18-0005, TTM 37506 Residential	University Park	Southeast corner of Portola Avenue and Gerald Ford Drive	Approval of a 174+ acre subdivision consisting of 1,100 housing units, eight distinct housing types (detached single-family, alley-loaded, duplexes, multi-family apartments) and 11+ acres of public parks and 7+ acres of private open space. Status: Building Plans Under Review.
City of Rancho Mirage				
39	PDP 18004, DA 180003, EA 180002 Residential	Carefield Senior Living	Southeast corner of Country Club Dr. and John L. Sinn Road (APN: 682-010-022-5).	A Preliminary Development Plan for 80,000 sq. ft. two-story senior assisted living facility with 84 units and common amenities. Status: Approved.
40	PDP 18003 Residential	ECHO at Rancho Mirage	North side of Ginger Roger, east of Landy Lane (APN: 685-080-004-7)	A Preliminary Development Plan for development of nine single family homes. Status: Under Construction.

Table 5-1. Cumulative Project List

Map ID	Project ID and Type	Project Name	Location	Description and Status (if applicable)
41	MOD 18021, MOD 16019 Residential	Veneto	70-600 Country Club Drive (APN: 689-231-016)	A (Major) Modification to build out an existing project into 34 units by adding a 1 one-story 6-unit condominiums and 15 villas 2 of which will be custom built to bring the total to 34 units. Status: Under Construction.
42	PDP 13003, FDP 13004 Residential	Revelle	72-860 Clancy Lane (APN: 682-250-003, 682-250-054/055)	A Preliminary Development Plan to build 32 semi-custom residences on 18 acres in a gated community at Revelle at Clancy Lane. Status: Under Construction.
43	FDP 05004, PDP 04011, MOD 06024, MOD 11040 Residential	Mirada Villas	Across from 68900 Frank Sinatra Dr (APN: 689-420-001 thru -026, -689-410-001 thru -026)	Development of 27 acres into 46 single family homes on the north side of Frank Sinatra Dr across from The Ritz at Rancho Mirage in the Santa Rosa Mountains Status: Under Construction
44	TPM 37957, PDP 20002, CUP 20002, VAR 20006 Residential Parcel Division	The River Hotel	Northeast Corner of The Rivers Shopping Center (APN: 684-440-039)	A Preliminary Development Plan to construct a hotel. Status: Under Review.
45	TTM 36620, EA 130006, SPA 13001, TTM 36622 Commercial Tract Division DA 190002, TTM 36620 Residential	38 JV, LLC c/o Meriwether Companies	Northwest corner of Via Florencia and Via Josefina (APN: 685-100-013 & 685-110-004 -009)	A Tentative Tract Map to subdivide 33.74 acres into 97 single family lots. Status: Approved.
46	TTM 35573 Commercial Tract Division	Ken Catanzarite	(APN: 689-151-070)	Recombine 51 existing, small non-conforming lots and portions of three others along with a portion of common Lot 42 of Tract Map No. 2515 into 20 new larger single-family lots and common lots for landscaping. Status: Approved.
47	PDP 20-0006, SP 20-0002, EIR 20-0002, DA 20-0001 Commercial	Porcupine Properties	(APN: 684-270-003, -036, -043, -044)	A Specific Plan to guide construction of new 42 guest units, spa facility including treatment cabanas and a staff support building. A new maintenance and operations campus, minor upgrades to existing buildings and site for accessibility and life safety. Status: Under Review.
48	CUP 19004 Commercial	Annenberg Foundation at Sunnylands	(APN: 674-430-004)	A Conditional Use Permit to construct a 1-mega-watt solar farm. Status: Approved.
49	SP 180001, EIR 18001, GPZMA 18003 Commercial	Section 31 Specific Plan Project	South of Gerald Ford Drive, east of Bob Hope Drive, north of Frank Sinatra Drive, and west of Monterey Ave.	A Specific Plan to implement the City's General Plan by regulating development of a mix of resort, residential, and supporting commercial uses on the approximately 618-acre site. Status: Approved.

Table 5-1. Cumulative Project List

Map ID	Project ID and Type	Project Name	Location	Description and Status (if applicable)
50	CUP 18004, TPM 37486, EA 180004 Commercial	Tower Energy Group	Frank Sinatra and Monterey Ave. (APN: 685-220-003)	A Conditional Use Permit for construction of Tower Market neighborhood market with fueling station. Status: Approved.
51	PDP 18002, TTM 37461 Commercial	Oasis Ranch LLC	Frank Sinatra and Bob Hope Drive (APN: 685-230-001 thru -004 & 685-240-019)	A Preliminary Development Plan for the development of a 60-room hotel and 109 residential condo-hotel units and certain accessory uses on approximately 25 acres of land, along with improvements to the new entry. Status: Approved.
City of Indio				
52	SP 15132, PMP 16157, TTM 164171 Residential	Virada	East of Adams Street and Falsetto Drive and south of Coyote Song Way Drive (APN 750-210-003 through 011; 753-030-020 through 023)	Construction of 242 multi-family attached flats dwelling units, 555 single-family detached residential dwelling units, 88 clusters dwelling units, 145 residential condominiums dwelling units, 87 duplex dwelling units, 220 apartment dwelling units on approximately 244 acres, 1.9-acre demonstration xeriscape garden, and 75 acres of regional park. Status: Ongoing Construction.
53	CUP 1561009(A) Commercial	I-10 New and Used Car Annex	79200 Varner Road (APN 607-230-002, 04 & 13; 607-251-002; 604-251-026; 607-251-016 & 017)	Construction of a single story 3,444 square foot car dealership building with associated services, parking, circulation, and landscaping on an approximately 4.99-acre lot. Status: Unknown.
54	Addendum to SCH 2012081085 Commercial	The Music Festivals Plan	The Approved Overlay Zone (south of Avenue 49, west of Monroe Street, north of Avenue 52, and east of Madison Street)	Plan to increase the maximum daily attendance at music festivals within the approved 601-acre festival site and expand the site by 41.8 acres within the Approved Overlay Zone established by the Major Music Festival Ordinance. Status: Under Review.
55	PMP 170358, TTM 0703475 Commercial	Trilogy at Polo Club- Phase 8	Northeast corner of Monroe Street and Avenue 52 (APN 767-110-014, 018, 019, 023, 040; 767-910-057 thru 060; 767-920-022, 767-940-051; 767-950-052, 054, 055)	Construction of approximately 226 residential family lots on approximately 47 acres. Status: Approved, Scheduled.
City of La Quinta				
56	Residential	Jefferson Street Apartments	46170 Jefferson Street	Construction of approximately 40 apartment units on approximately 5.36 acres. Status: Under Review.
57	TPM 37359, SDP 20170012, CUP 2002067, PM 34855 Residential	Centre at La Quinta	South of Auto Centre Drive, east of Adams Street	Construction of 133 condominium units and a 2.7-acre hotel site all on approximately 22 acres. Status: Approved.

Table 5-1. Cumulative Project List

Map ID	Project ID and Type	Project Name	Location	Description and Status (if applicable)
58	SDP 2018003, CUP 20180004 Commercial	California Desert Museum of Art	47705 Caleo Bay	Construction of 18,456 square foot museum that would include multiple art galleries, offices, and an art studio on approximately 1.12 acres. Status: Approved.
City of Palm Springs				
59	PD 366 5.1327, DA, TTM 36691 Commercial	Serena Park	Whitewater Club and Verona Rd. (APN: 501-190-011, 669-480-027, 669-590-066)	A conversion of a defunct, 126-acre golf course to a 386-unit residential development, including detached and attached single-family residences. Status: Approved.
Coachella Valley Association of Governments				
60	Transportation	CV Link	Palm Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, La Quinta, Indio, and Coachella	Construction of a 50-mile, alternative transportation corridor for bicycles, pedestrians, and low-speed electric vehicles along the Whitewater River and Tahquitz Creek that will initially stretch from Palm Springs to Coachella. Status: Construction Ongoing.
Coachella Valley Water District				
61	SCH 2020100292 Non-Potable Water Connections Project	Fiscal Year 2020-2021 Non-Potable Water Connections Project	Palm Desert, Rancho Mirage, Indian Wells, and La Quinta	Construction and operation of approximately 12 miles of non-potable water (NPW) pipeline segments and connections to provide irrigation water for seven local golf courses, one community church, and one sports and entertainment venue; on-site pumped groundwater would shift to Blended Recycled Water provided from CVWD's existing Water Reclamation Plant No. 10 (WRP10) facility. Status: Under Review.
62	SCH 2015111067 Stormwater Improvement	Coachella Valley Stormwater Channel Improvement Project – Avenue 54 to the Thermal Drop Structure	Avenue 54 downstream to Thermal Drop Structure north of Avenue 58	CVWD proposes to modify existing Coachella Valley Stormwater Channel and add additional flood control improvements to provide at least 100-year flood protection. Status: Construction to commence in 2021.
NA CVWD wide	SCH 2017028217 Water Connections Project	Eastern Coachella Valley Water Supply Planning Project	Highway 86	CVWD proposes to develop a master plan to identify disadvantaged community water connection projects such as critical drinking water need, infrastructure requirements, feasibility, and cost. Status: Under Review.
63	SCH 2019049102 Flood Management	East Side Dike Improvement Project, Phase 1	Eastern half of Section 32, Township 3 South, Range 4 East of the San Bernardino Base and Meridian; City of Indio	CVWD proposes to certify the East Side Drike, from Dune Palms Road to I-10, with the Federal Emergency Management Agency as a flood protection structure and proposes the construction of 3,420 linear feet of concrete slope lining of the sike. Status: Construction to commence in 2021.

Table 5-1. Cumulative Project List

Map ID	Project ID and Type	Project Name	Location	Description and Status (if applicable)
64	SCH 2015071047 Stormwater Plan	Eastern Coachella Valley Stormwater Master Plan	Unincorporated Riverside County and the communities of Mecca, North Shore, Thermal, Oasis, Vista Santa Rosa, and Coachella	CVWD proposes to improve drainage facilities in the eastern Coachella Valley region, including channels, storm drains, levees, basins, dams, and other facilities capable of relieving flooding problems within the area. Status: Under Review.
65	SCH 2012101011	Highway 86 Water Transmission Main and Pump Station Project	Salton Sea Beach, Desert Shores, Salton City, unincorporated areas of Riverside and Imperial Counties	CVWD proposes to supply domestic water to the communities of Salton Sea Beach, Desert Shores, Salton City, and unincorporated areas of Riverside and Imperial Counties. Status: Under Review.
66	SCH2017041072 Groundwater Replenishment	Palm Desert Groundwater Replenishment Project	Hovley Lane and Beacon Hill	CVWD proposes to repurpose existing percolation ponds located north of CVWD's Water Reclamation Plant Np. 10 and construction detention basins within the Whitewater River Stormwater Channel for the purposes of replenishing the groundwater basin using Colorado River Water. An Addendum to this project requests relocating the Mid-Valley Pipeline Extension from the channel bed to the channel embankment and adding slope lining adjacent to the Water Reclamation Plant No. 10. Status: Under Review.
N/A	SCH 2019090307 Sanitation Plan	Coachella Valley Water District Sanitation Master Plan Update 2020	Desert Hot Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, Indio, La Quinta, and unincorporated areas of Riverside and Imperial Counties.	CVWD proposes to construction a long-term capital improvement project to be implemented in a phased program from 2021 through 2040 consisting of recommendations to refurbish existing assets, optimize operations, and satisfy projected capacity needs of all CVWD sanitation facilities within its service area. Status: Construction to commence in 2021.
67	SCH 2020020004 Groundwater Replenishment	Whitewater River Groundwater Replenishment Project	Whitewater River Groundwater Replenishment Facility located	CVWD is requesting a renewable to a right-of-way grant from the BLM for continued operation and maintenance of the existing Whitewater River Groundwater Replenishment Facility. No new construction or ground disturbance activities are anticipated for this project. An additional renewal area not previously included in the prior ROW grants includes approximately 178.83 acres and two existing flood control berms within portions of Sections 23 and 24 of Township 3 South, Range 3 East. Status: Under Review.

Sources: Riverside County, 2021; City of Palm Desert, 2021; City of Rancho Mirage, 2021; City of Indio, 2021; City of Palm Springs, 2020; 2021; City of Indian Wells, 2021; USFWS, 2021; BLM, 2021; CVAG, 2021.

5.4 Cumulative Effects

5.4.1 Aesthetics

5.4.1.1 Spatial and Temporal Boundaries

The geographic area of analysis for cumulative impacts related to aesthetics is limited to areas within visual range of the proposed Project. As discussed in Section 3.2 (Aesthetics), within the study area for aesthetics, long-range views to the north and east include the Little San Bernardino Mountains in the background and the Indio Hills in the foreground. To the south, long-range views include the Santa Rosa and San Jacinto Mountains. In general, views to the north are not impeded by topography or man-made features. Scattered palm oases can be viewed at the base of the Indio Hills. Views to the south, however, include the I-10 corridor signified by trees along its route and vehicular traffic. Low-rise commercial buildings and single- and multi-family developments occur throughout the Thousand Palms, Tri-Palms Estates, and Del Webb's Sun City areas. Two housing developments have been approved (not yet under construction) at the southern terminus of Reach 4 – Mirasera (Map ID #1) and Valanté (Map ID #2); both projects have agreements with the U.S. Army Corps of Engineers (USACE) regarding the planned flood control facility. The green, man-made rolling terrain of golf courses, including the Classic Club Golf Course, can be viewed in the developed areas south of the Project. As shown on Figure 5-1, there are multiple other planned or proposed housing developments located in areas which would receive flood protection from the construction and operation of the proposed Project or its alternatives.

5.4.1.2 Cumulative Effects of the Proposed Project and Alternatives

The overall visual quality of the area immediately north and east of the Project is primarily open natural space, including the Coachella Valley National Wildlife Refuge. The southern and western areas contain commercial and residential developments, as well as a golf course (Classic Club Golf Course) in between the proposed Reach 3 and Reach 4 channels. The potential for cumulative impacts during construction is limited, as cumulative projects would need to be constructed simultaneously with the proposed Project in order for a temporary cumulative impact to occur. Most of the larger development projects proposed in the Project area intend to be constructed following completion of the proposed Project; therefore, the presence of heavy equipment during construction would not likely combine with these projects to result in a cumulatively significant impact. However, other smaller projects may be constructed at the same time. These projects would generally be within the developed areas of the Thousand Palms community and would not contribute to the impacts on the viewsheds of the Project. Therefore, cumulative visual impacts from construction would not occur. Use of large construction equipment would not obscure views; therefore, the Project's contribution would not be cumulatively considerable.

The long-term visual changes associated with the cumulative projects listed above include large-scale commercial and residential developments that would substantially alter the existing visual conditions in the surrounding area. As discussed in Section 2 (Project Description), the levees would be constructed to blend in with the existing surroundings per EC V-1; however, the proposed levees would obstruct foreground views of the desert landscape, most notably within Reach 1, which would degrade the existing visual quality of the surroundings. This alteration, when combined with the effects from other projects in the region, could result in a cumulatively considerable contribution to an adverse effect by blocking scenic views of the desert landscape from areas immediately south of Reach 1.

Implementation of either Alternative 2 or 3 would result in similar cumulative aesthetic impacts due to design elements common across all alternatives, such as channel design and levee location. Alternative 2

would slightly reduce the adverse aesthetic effect due to the removal of Reach 2 from the construction plan. The proposed Project, as well as the alternatives, would implement EC V-1 (Design consistent with surroundings), EC N-1 (Locate Construction Activities to Avoid Sensitive Receptors), and MM BIO-10 (Ensure Wildlife Impact Avoidance and Minimization) to reduce impacts to the extent feasible.

The No Project Alternative would not construct the proposed levees and channels. Therefore, scenic vistas or views and existing visual character would not be subject to visual changes associated with the Project and no cumulative impact would occur. If the Project is not built, it is possible that another project may be proposed in the future to address the area's flooding problem, which could have a cumulatively considerable effect on scenic vistas or views and existing visual character. It is unknown if future project(s) would share design features with the Project or whether such a project would be located in a similar location, such that the cumulative effects cannot be known.

CEQA Significance Conclusion

The proposed Project, and its action alternatives, would make a substantial contribution to long-term visual changes along the Project alignment due to the proposed levees and channels. Therefore, the Project's contribution to cumulative visual impacts is considered significant and unavoidable (Class I). The No Project Alternative would not contribute to a cumulative impact on scenic vistas or views and would not directly alter the existing visual character of the area.

5.4.2 Air Quality and Greenhouse Gases

5.4.2.1 Spatial and Temporal Boundaries

As discussed in detail in Section 3.3.1 (Air Quality and Greenhouse Gases – Environmental Baseline), the proposed Project and its alternatives would be in the Coachella Valley (Valley) area of Riverside County, within the designated Salton Sea Air Basin (SSAB), under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). For air quality, the geographic extent of the cumulative impact area remains within the SSAB and within the jurisdiction of the SCAQMD. The Project area is more than 10 miles east and south of the borders of the nearest air basins/jurisdictions and is separated from the Mojave Desert Air Basin (MDAB) by the Little San Bernardino Mountains and from the South Coast Air Basin by the San Gorgonio Pass and the San Bernardino and San Jacinto Mountains. Traffic could occur in other areas, such as from import of cement or specialty materials through the MDAB and South Coast Air Basin, or from construction employee commuting from any of the surrounding air basins or jurisdictions (e.g., Imperial County Air Pollution Control District within the SSAB), or construction equipment that may need to be hauled to the site from the neighboring air basins/jurisdictions; however, these traffic emissions are not considered to be of a magnitude to create cumulative air quality impacts in areas other than within the SSAB under the jurisdiction of the SCAQMD near the Project site. Therefore, cumulative impacts could extend over the entire Project area including the project footprint, along the haul routes, and near the sediment disposal site located within the Preserve.

Climate change is a long-term global impact, not a direct localized impact; and because the direct environmental effect of an increase in greenhouse gas (GHG) emissions is the increase in global temperatures, which in turn has numerous indirect effects on the environment and humans, the area of influence for GHG emissions impacts associated with the Project would be global. However, those cumulative global impacts would be manifested as impacts on resources and ecosystems in California. The GHG analysis provided in Section 4.3 (Air Quality and Greenhouse Gases) captures these cumulative global climate change impacts; therefore, a separate cumulative impacts analysis for GHG is not performed herein.

5.4.2.2 Cumulative Effects of the Proposed Project and Alternatives

For the purpose of cumulative air quality analysis, projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD, 2003). Based on this SCAQMD guidance, construction of the Project would have significant regional cumulative air pollutant impacts for PM10 (under all alternatives). All other mitigated emissions, including construction and operation, have been determined to be below all SCAQMD regional emissions significance thresholds.

As described in Section 4.3 (Air Quality and Greenhouse Gases), the construction of the proposed Project, or its alternatives, would also result in significant impacts stemming from exceedance of the SCAQMD Localized Significance Thresholds (LSTs) for both PM10 and PM2.5. A cumulatively considerable localized adverse effect on air quality would result only if construction of the proposed Project (or its alternatives) were to overlap with the construction of nearby projects, as LSTs would only be affected for receptors within 500 meters from the levee and channel construction work sites. As is it unknown when the Project would be constructed, it is unknown if any of the projects listed in Table 5-1 would have overlapping construction timeframes. However, if those projects were to be constructed at the same time as the proposed Project and it close proximity, the Project could contribute a cumulatively considerable amount of localized PM10 and PM2.5 emissions to the region.

As discussed in Section 4.3, emissions of acutely hazardous pollutants from proposed Project emissions sources are negligible, so the primary potential health risk would be related to the carcinogenic and chronic risks from diesel particulate matter (DPM) exposure related to the proposed Project's diesel-fueled off-road equipment and on-road vehicles. The construction DPM emissions are spread over a very large area, the construction duration is only two years, and the DPM emissions would be substantially reduced through the implementation of MM AQ-1. Therefore, construction emissions are not considered to be of concern in relation to the potential long-term health risk impacts from DPM exposure. The Project's increase in O&M emissions are minimal, again would occur over a very large area, and would not significantly affect the area's health risk from air pollutants. In the event that construction of the Project overlaps with other projects in the region, the Project would not contribute a cumulatively considerable amount of toxic air contaminant emissions, such that they would not exceed SCAQMD significance thresholds.

Conformance with approved ambient air quality plans is a Project-specific impact and therefore cannot have cumulative impacts. Other air quality impacts discussed in Section 4.3 where the proposed Project was determined to have less than significant impacts and the Project's contribution to cumulative impacts have been determined not to be cumulative considerable include: new or substantial contributions to air quality violations, impacts related to increasing the incidence of Valley Fever, and odor impacts. Finally, compliance with the federal General Conformity regulation is a federal requirement; a CEQA cumulative analysis is not applicable.

CEQA Significance Conclusion

Per SCAQMD guidance, the Project would result in a cumulatively considerable significant and unavoidable impact for regional PM10 construction emissions under all alternatives. Additionally, if construction of the Project were to overlap with other projects located within the area of LST impact, the Project could contribute a cumulatively considerable amount of air pollutant emissions, specifically PM10 and PM2.5. (Class I) All other air quality/GHG impacts would not be cumulatively considerable.

5.4.3 Topography, Geology, and Soils

5.4.3.1 Spatial and Temporal Boundaries

The geographic extent of cumulative analysis for topography, geology, and soils is limited to the area immediately underlying and adjacent to the Project footprint. This area is considered sufficient to capture potential cumulative effects to geology and soils because primary impacts from geologic conditions and geologic hazards, such as liquefaction or unstable soils, occur at specific locales and are unaffected by activities not acting on them directly. Any impacts of the Project would be site specific. The cumulative analysis for soil erosion includes the Project area as well as any areas downstream of the Project area. The Project area consists of generally flat desert washes, bajadas, and alluvial plains such that landslides are not an issue. The Project is located in a moderate liquefaction zone, where significant groundwater could increase the liquefaction potential of the soil.

5.4.3.2 Cumulative Effects of the Proposed Project and Alternatives

Generally, geologic hazards and the potential effects of geologic-related damage would affect each project individually and would therefore not introduce cumulatively considerable impacts.

Neither the proposed Project, nor its alternatives, would involve the construction of housing or large structures which could be damaged during an earthquake or cause damage to other people or structures. The Project would not create any large slopes or be located on any large slopes, which could otherwise expose people or structures to risk from landslides, and the presence of the Project would not alter risk of seismic ground shaking and/or ground failure in the area.

By virtue of the Project being for the purposes of flood control, infrastructure introduced under the Project would alter local topography by elevating it in some areas, where levees would be constructed, and by lowering it in other areas, where channels would be implemented. The proposed Project would also result in an approximately two-foot-high spoil area across an approximately 242-acre site. However, this spoil pile would be contoured similar to the existing site topography.

The proposed Project, and its alternatives, would not result in a cumulatively considerable effect on geology and soils, as an impact would not be created as a result of the combination of the Project together with other projects in the region.

CEQA Significance Conclusion

The Project would not create an incremental impact to seismic or geologic hazards that would be cumulatively considerable (Class II).

5.4.4 Sand Migration

5.4.4.1 Spatial and Temporal Boundaries

The study area for cumulative analysis regarding sand migration includes the Project footprint as well as areas within the wind corridor, as defined in the "Geomorphic Assessment of Sand Transport Impacts for the Thousand Palms Flood Control Project (Lancaster, 2015) is shown on Figure 3.5-1. The processes which affect sand migration in the region are described in detail in Section 3.5 (Sand Migration). As shown in Figure 3.5-1, the wind corridor generally encompasses the Reach 1 footprint, proceeding in a south easterly direction along a similar direction as Reaches 2 and 3, through the Preserve, and ending at Reach 4. This area is considered sufficient to capture potential cumulative effects to sand migration

because the primary impacts to sand migration, as discussed in Section 4.5 (Environmental Consequences – Sand Migration), primarily result from continuing development in the wind corridor which may contribute to further decreases in sand transport and reduction of viable sand habitat in the Preserve, as well as the accompanying adverse effects on species within the Preserve. Projects which may combine with the proposed Project for a cumulative effect include those listed in Table 5-1 which are located within the wind corridor. Of the projects listed, two (Map ID #1 and 5) would be located within the wind corridor. One project (Map ID # 3) is located directly adjacent to the wind corridor.

5.4.4.2 Cumulative Effects of the Project

The proposed Project, or its alternatives, would only combine with other projects located within the wind corridor, or upstream, to result in a cumulative effect on sand transport if they trap or disrupt sediment transport. Construction or O&M activities that result in disruption of either fluvial or aeolian transport and reduction of sand supply to the wind corridor and disruption of sand sorting and deposition would be considered an adverse effect.

As any barrier to the downwind movement of sand will trap the sand, ongoing or future construction within the wind corridor could affect sand source areas and could result in a reduction in the replenishment of sand to the wind corridor. This could, in turn, result in the loss or degradation of downwind habitat for sand-dependent special-status plant and wildlife species and affect the long-term viability of the Preserve. Sand source areas could also be directly affected by grading or other temporary construction activities, by ongoing O&M activities, or by permanent disruption of fluvial or aeolian transport of sediment to sand source areas by introducing barriers to sand transport within the study area.

As compared to current conditions, this diversion of flow and resulting fluvial transport has the potential to increase the supply of sand moving into the wind corridor (Lancaster, 2015). In summary, the analysis of alluvial and wind sediment transport data indicates that the proposed flood control structures will have a positive effect on sand supply to the dunes and sand sheets that occur in the Preserve Refuge. The Project will increase sand supply by 9 – 14 percent, mainly because of the diversion of water and sediment to the east and southeast to the primary sand deposition area by the levee and channel of Reach 1 (Lancaster 2015) (see Section 4.12, Socioeconomics and Environmental Justice). Should development occur in the wind corridor this could impeded sand transport, however the placement of the levee would likely reduce development pressure in some locations above the levee. However, since the Thousand Palms area is the largest land area available for future development in the Coachella Valley, development pressure will remain regardless of whether a regional flood control system (i.e., the Project) is constructed. Flood control structures incorporated into individual future developments would impact sand migration and, in aggregate, this impact is likely to be greater than that of a regional flood control project that has been designed to minimize and mitigate for sand migration impacts. In addition, the proposed Project protects the 550-acre floodway within the wind corridor from future development. As such, the proposed Project, or its alternatives, would not contribute a cumulatively significant effect on sand migration when combined with future planned development or other projects in the region.

CEQA Significance Conclusion

Development in the study area could affect (directly and indirectly) sand source areas and fluvial transport, which would result in a significant cumulative impact. However, the Project has specifically been designed with the objective of enhancing the viability of the Coachella Valley Preserve and Wildlife Refuge by establishing clear boundaries for the Preserve/Refuge, minimizing disruption of aeolian processes for sand transport, preserving an approximately 550-acre floodway area, and replenishing sand

on the Preserve/Refuge during the O&M phase. With these features, and implementation of EC SM-1 (Sand Removal and Distribution or Disposal), EC SM-2 (Adaptive Management Plan), and Mitigation Measures SM-1 (Minimize Sand Impacts), and SM-2 (Prepare and Implement a Sand Migration Management Plan) during Project construction would be reduced to a less-than-significant level. As such, the Project's impacts would not be cumulatively considerable (Class II).

5.4.5 Biological Resources

5.4.5.1 Spatial and Temporal Boundaries

The area of cumulative effect for biological resources varies by a species' life history, mobility, distribution, and specific range in the Project area. The "geographic scope" of the analysis of cumulative impacts to biological resources refers to the area within which cumulative impacts are likely to occur. For the Project, most of the cumulative effects analysis makes a broad, regional evaluation of the impacts of existing and reasonably foreseeable future projects that affect plant communities and wildlife within the northern Coachella Valley.

5.4.5.2 Cumulative Effects of the Proposed Project and Alternatives

Threatened, Endangered, and Special-Status Plants

One federally-listed endangered plant species, the Coachella Valley milk-vetch, was observed in the Project Study Area, and portions of the Project site are within USFWS-designated critical habitat for this species. No other federal or State-listed threatened or endangered plant species are likely to occur and no other designated critical habitat for plant species is located on the Project site. Chaparral sand-verbena (California Rare Plant Rank (CRPR) 1B.1) was observed in several locations within Reach 4. No other rare plants were observed; however, several other non-listed special-status plants could occur on the Project site, with probabilities ranging from low to high (see Section 3.6, Biological Resources). The Project's potential direct effects to listed and non-listed special-status plants would occur primarily during construction and could include direct removal or trampling as well as habitat alteration or loss. Potential indirect impacts could occur during construction and O&M and could include the disruption of native seed banks through soil alterations; the accumulation of fugitive dust; increased erosion and sediment transport; disruption of the sand transport system; and the colonization of non-native, invasive plant species. These effects could combine with similar effects from any of the development projects in the cumulative scenario. In addition, any ground-disturbing activities by projects in the cumulative scenario have the potential to introduce or spread weeds, which have been an ongoing issue for many years in parts of the Coachella Valley.

Construction of the Project would result in the loss of designated critical habitat for Coachella Valley milk-vetch (see Figure 3.6-2), although these areas are not expected to support the plants themselves. These areas were designated as critical habitat to protect sand transport functions, rather than occupied habitat (see Section 3.6.1.4). Construction of the Project is not expected to adversely affect the wind corridor and may result in beneficial affects over time by trapping sediment that would otherwise be lost to the system as storms carry blowsand out of the wind corridor along the many drainages crossed by the proposed levees. Under the Project, blowsand trapped in the levees or channels would be periodically removed and placed back into the wind corridor above the Preserve.

There are currently no projects in the cumulative scenario that are proposed within Coachella Valley milk-vetch critical habitat, although some are adjacent (see Figure 5-1). None of the projects included in this cumulative analysis are anticipated to result in the loss of Coachella Valley milk-vetch critical habitat.

To reduce impacts of the Project and minimize its contribution to cumulative effects to listed and other special-status plants and their habitat, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3, as described in Section 2.2.1. During Project O&M, the CVWD would transport sand that accumulates along and in the Project levees and channels to the wind corridor upwind of suitable aeolian sand habitat, for aeolian transport onto the Preserve, as described in Section 2.2.3. These two components of the Project serve to protect and manage aeolian sand habitat for Coachella Valley milk-vetch and other special-status plants. Land acquisition in the floodway could offset direct impacts, if the acquired land is managed and maintained as habitat for special-status species (e.g., as aeolian sand habitat or sand transport area). In addition, environmental commitments and mitigation described in Section 4.6 (Biological Resources) would minimize or avoid effects from the proposed Project or its alternatives to listed and sensitive plants, their habitat, and designated critical habitat. These include EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), and BIO-9 (Minimize and Mitigate Impacts to Special-status Plants). These measures include a weed abatement program, construction monitoring, strategies to minimize disturbance to sand and sand transport, BMPs to control hazardous materials spills and fugitive dust, preconstruction surveys and avoidance of sensitive resources to the extent possible, worker environmental awareness training, revegetation of temporarily impacted areas, and compensation for permanent impacts. These measures would minimize the Project's incremental contribution to adverse cumulative impacts to Coachella Valley milk-vetch, its designated critical habitat, chaparral sand-verbena, and other sensitive plants. Nonetheless, ongoing habitat loss, including interference with sand migration corridors that results in degradation of habitat for sand-associated species, remains a substantial cumulative issue in the northern Coachella Valley.

Threatened, Endangered, and Special-Status Wildlife

Coachella Valley fringe-toed lizard (CVFTL), federally listed as threatened and State-listed as endangered, occupies sandy habitats in the Coachella Valley. It has been observed, and suitable habitat exists, at several locations throughout the Project area. Other State or federally listed species or candidates for listing could potentially occur in the Project Study Area: desert tortoise and mountain lion. Townsend's big-eared bat may also occur. Non-listed special-status species that could occur in the Project area include flat-tailed horned lizard (FTHL), golden eagle, burrowing owl, Nelson's bighorn sheep, American badger, desert kit fox, several other small mammals, Coachella Valley giant sand-treader cricket, and Coachella Valley Jerusalem cricket. CVFTL, desert tortoise, FTHL, burrowing owl, Palm Springs pocket mouse, Palm Springs (Coachella Valley) round-tailed ground squirrel, Coachella Valley giant sand-treader cricket, and Coachella Valley Jerusalem cricket are covered species under the CVMSHCP. Most of the Project would be within or adjacent to designated critical habitat for the CVFTL.

The Project's potential direct effects to listed and non-listed special-status wildlife include mortality due to collisions with vehicles or heavy equipment, loss or degradation of habitat, fugitive dust, release of hazardous materials, sand compaction, increased noise and disturbance, alterations to upstream or downstream hydrology leading to alteration of habitat (e.g., removing surface or soil water source, or causing inundation of an upland species occurrence), and disruption of fluvial and aeolian sand transport.

Indirect impacts include increased human presence, including OHV use, provision of predator subsidies, and the introduction and spread of invasive weeds (particularly Sahara mustard) that stabilize sand dunes, outcompete food plants, and do not support insect prey. The proposed Project could have similar direct and indirect effects on CVFTL critical habitat on or near the Project site, or downstream or downwind of the Project site or in the floodway. These effects could combine with similar effects from any of the development projects in the cumulative scenario.

Similar as described above for Coachella Valley milk-vetch critical habitat, construction of the Project would result some loss of designated critical habitat for CVFTL, although most of the Project's potential effects to designated critical habitat would be to sand source areas within critical habitat boundaries rather than to occupied habitat (see Section 3.6.1.6). Construction of the Project is not expected to adversely affect the wind corridor and may result in beneficial affects over time by trapping sediment that would otherwise be lost to the system as storms carry blowsand out of the wind corridor along the many drainages crossed by the levees. Similarly, blowsand trapped in the levees or channels would be periodically removed and placed in the wind corridor above the Preserve. Over time, the placement of the levee and channels may also hinder OHV use particularly in Reach 3 where OHV use is common along the western edge of the Refuge. Blocking the dirt road in this location it may reduce vehicle traffic in areas that could support CVFTL or FTHL and reduce impacts to portions of the Thousand Palms Conservation Area. Construction of the levees would also prevent the transport of sediment out of the wind corridor as storms movement sediment to downstream areas. This material would be trapped by the levels and become available for long-term sand replenishment to the Preserve.

There are three projects in the cumulative scenario that also appear to be proposed within CVFTL critical habitat; these include Specific Plan 343 (Northstar Palm Desert Specific Plan), a general amendment to the Coachella Valley Plan, and a road widening project on Ave 48. Some of these projects may result in the loss of critical habitat, particularly large development projects such as the Northstar Palm Desert Specific Plan and the Coachella Valley Plan. These projects may also adversely affect sand transport systems in the region.

To reduce impacts of the Project and minimize its contribution to cumulative effects to listed and other special-status wildlife and their habitat, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). During Project O&M, the CVWD would transport sand removed from the Project facilities (accumulated along the levees and channels) to the wind corridor upwind of suitable aeolian sand habitat, for aeolian transport onto the Preserve (Section 2.2.3). These two components of the proposed Project would serve to protect and manage aeolian sand habitat for CVFTL, FTHL, and other special-status wildlife. Land acquisition in the floodway could offset direct impacts if the acquired land is managed and maintained as habitat for special-status species (e.g., as aeolian sand habitat or sand transport area). In addition, environmental commitments and mitigation described in Section 4.6 would minimize or avoid effects from the project or its alternatives to listed and sensitive wildlife, their habitat, and designated critical habitat. These include EC B-1 (Weed Abatement Program), EC B-2 (Biological Monitoring and Relocation of Sensitive Species), EC B-3 (Avoid Impacts to Sensitive Species), EC W-1 (Hazardous Spills), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), BIO-1 (Conduct Pre-construction Biological Resources Surveys), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), BIO-10 (Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan), BIO-11 (Conduct

Coachella Valley Fringe-toed Lizard and Flat-tailed Horned Lizard Surveys, Monitoring, and Avoidance), BIO-12 (Conduct Desert Tortoise Surveys, Monitoring, and Avoidance and Prepare a Desert Tortoise Relocation Plan), BIO-13 (Prepare and Implement Raven Monitoring, Management, and Reporting Plan), BIO-14 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds), BIO-15 (Conduct Surveys and Avoidance for Burrowing Owl), BIO-16 (Conduct Surveys and Avoidance for Bat Roosts), BIO-17 (Conduct Surveys and Avoidance for Special-status Small Mammals), and BIO-18 (Conduct Surveys and Avoidance for American Badger and Desert Kit Fox). These measures include a weed abatement program; construction monitoring; strategies to minimize disturbance to sand and sand transport; BMPs to control hazardous materials spills and fugitive dust; preconstruction surveys and avoidance of sensitive resources to the extent possible; exclusion fencing around work areas in listed species' habitat; BMPs to minimize impacts to wildlife; preparation and implementation of a Raven Monitoring, Management, and Reporting Plan and monetary contribution to the USFWS Regional Raven Management Program; worker environmental awareness training; revegetation of temporarily impacted areas; and compensation for permanent impacts. These measures would minimize the Project's and its alternatives' incremental contribution to adverse cumulative impacts to CVFTL, its designated critical habitat, FTHL, desert tortoise, Townsend's big-eared bat, and other special-status wildlife. Nonetheless, ongoing habitat loss, including interference with sand migration corridors that results in degradation of habitat for sand-associated species, remains a substantial cumulative issue in the northern Coachella Valley.

Sensitive Natural Communities

The Project Study Area supports native vegetation and habitat, including sensitive desert dune habitat. The Project would result in the permanent loss and degradation of native vegetation and habitat through direct habitat disturbance and removal, and indirect fugitive dust, spills of hazardous materials, sand compaction and stabilization, interruption of sand transport, alterations in local hydrology, and natural community degradation from weeds. Past and foreseeable future actions in the northern Coachella Valley contribute to ongoing loss of native vegetation, particularly to desert communities such as creosote bush scrub and sand dunes that support a suite of sensitive plants and wildlife. The loss of desert scrub communities and sand dunes, in combination with reasonably foreseeable projects would contribute to the cumulative loss of natural communities and landforms in the region. To reduce impacts of the Project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). Land acquisition in the floodway would offset direct impacts from habitat loss if the acquired land is managed and maintained as habitat for special-status species. In addition, implementation of EC B-1 (Weed Abatement Program), EC W-1 (Hazardous Spills), EC SM-1 (Sand Removal and Distribution or Disposal), EC SM-2 (Adaptive Management Plan), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), SM-1 (Minimize Sand Impacts), SM-2 (Prepare and Implement a Sand Migration Management Plan), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), and BIO-8 (Prepare and Implement an Integrated Weed Management Plan) would reduce the Project's contribution to cumulative impacts on vegetation.

The amount of permanent loss of native habitats is relatively small from the proposed Project (see Section 4.6), and the Project would not result in the large-scale conversion of natural desert habitats and sand dune habitats like many of the projects in the cumulative scenario such as housing developments and utility-scale solar developments. With mitigation, the Project's incremental contribution to the loss of natural communities would not be considerable. Nonetheless, ongoing loss of natural communities remains a substantial cumulative issue in the northern Coachella Valley.

Federally Protected Wetlands

There are no federal wetland waters in the Project area. The preliminary jurisdictional determination and delineation of waters report identified approximately 20,398 linear feet of jurisdictional drainages in the Project Study Area, totaling 15.12 acres of non-wetland waters under the jurisdiction of CDFW, USACE, and RWQCB (see Appendix D). The Project would affect jurisdictional waters of the State and waters of the US during construction and O&M, by placing fill material into jurisdictional waters to construct levees; constructing channels or other flood control structures across jurisdictional drainages; and redirecting runoff away from existing natural channels. All Project impacts to waters of the State or waters of the U.S. (including construction and O&M phases) will be subject to permitting under the California Fish and Game Code and federal Clean Water Act (CWA). CVWD must prepare and submit appropriate applications, notifications, and fees to the USACE (according to Section 404 of the CWA), the CDFW (according to Sections 1600-1616 of the California Fish and Game Code), and the California Regional Water Quality Control Board (according to Section 401 of the CWA). Projects in the cumulative scenario that would affect jurisdictional areas would be subject to the same permitting requirements.

As a part of the proposed Project, CVWD would acquire approximately 550 acres of the floodway located along the levees and in the active wind corridor between Reach 1 and Reach 3 (Section 2.2.1). Land acquisition in the floodway would offset impacts if the acquired land is managed and maintained as habitat for special-status species. Potential impacts to vegetation and habitat would be reduced through implementation of a Storm Water Pollution Prevention Plan (SWPPP) including Best Management Practices (BMPs) in compliance with the conditions set forth in State and federal permits or authorizations (California Fish & Game Code Sections 1600-1616 and CWA Sections 401 and 404). Implementation of EC B-1 (Weed Abatement Program), EC W-1 (Hazardous Spills), EC SM-1 (Sand Removal and Distribution or Disposal), EC SM-2 (Adaptive Management Plan), and Mitigation Measures PS-2 (Refueling Practices), PS-3 (Worker Training), PS-4 (Human Waste), SM-1 (Minimize Sand Impacts), SM-2 (Prepare and Implement a Sand Migration Management Plan), BIO-2 (Conduct Biological Monitoring and Reporting), BIO-3 (Prepare and Implement Worker Environmental Awareness Program), BIO-4 (Minimize Native Vegetation and Habitat Loss), BIO-5 (Utilize Native Species for Revegetation of Temporary Disturbance Areas), BIO-6 (Compensate for Habitat Loss), BIO-7 (Prepare and Implement an Operations & Maintenance Plan), BIO-8 (Prepare and Implement an Integrated Weed Management Plan), and BIO-19 (Minimize and Mitigate Impacts and Ensure No Net Loss for Jurisdictional Waters) would minimize the Project's contribution to cumulative impacts to waters of the State and waters of the US.

Wildlife Movement Corridors

The Project may result in localized and generally short-term hindrance of movement for resident or migratory wildlife, but the impact would be minor and would primarily occur during construction. Other projects in the cumulative scenario, such as large-scale developments, would have permanent effects on wildlife movement through the Valley by creating physical barriers, and by introducing sources of noise, light, and human activity that may discourage wildlife from moving through areas. However, the proposed Project would not contribute to those types of impacts once construction is complete. Therefore, the Project's contribution to cumulative impacts on wildlife movement in the region would not be considerable.

Approved Conservation Plans

The Project is within the plan area for the CVMSHCP. The Project is covered under the CVMSHCP on private lands and CVWD would have "take" authorization for covered species' habitat within the Plan Area, subject to conditions of applicable state and federal authorizations. CVWD would apply for State and

federal take permits to public lands. Proposed Project components that are within CVMSHCP conservation areas are subject to the Joint Project Review process with the Coachella Valley Conservation Commission (CVCC), to allow the CVCC to facilitate and monitor implementation of the CVMSHCP. If the Project is not covered under the CVMSHCP, then no take would be authorized under the CVMSHCP, and separate ESA and CESA authorizations would be required. Nonetheless, the Project is consistent with the CVMSHCP and would not conflict with its provisions. No contribution to cumulative impacts associated with habitat conservation plan conflicts would occur.

CEQA Significance Conclusion

The proposed Project and alternatives would include the implementation of ECs and Mitigation Measures BIO-1 through BIO-19, reducing impacts during Project construction and operation to a less-than-significant level. The Project's impacts would combine with other projects in the region, but mitigation including land acquisition would minimize the Project's incremental contribution and would not be cumulatively considerable (Class II).

5.4.6 Cultural and Traditional Cultural Properties

5.4.6.1 Spatial and Temporal Boundaries

The geographic scope for the analysis of cumulative impacts on cultural and tribal cultural resources includes all the projects listed in Table 5-1 and shown on Figure 5-1. This is a relatively wide geographic scope because most impacts to cultural and tribal cultural resources occur on the site of the resource itself through physical disturbance or encroachment. The proximity of resources to the Project would be of interest only to the extent that proximity would considerably affect the context or integrity of the resource. Within the cumulative study area of the Project, there are currently at least 67 past, present, and future projects, which could disturb more than 2,000 acres. Table 5-1 provides a list of specific projects that are considered in the cultural cumulative scenario by jurisdiction and their location to the Project, as well as a description of each project.

5.4.6.2 Cumulative Effects of the Proposed Project and Alternatives

Impacts to tribal and cultural properties tend to be site specific and are assessed on a site-by-site basis. The Proposed Project would require implementation of The Project would not impact significant known cultural or tribal cultural resources; however, there is a potential for unanticipated and previously unidentified resources to be present within the Project area. This potential is considered to be low and the Project would implement EC, C-1, C-2, and C-3, thus reducing the Project's contribution to cumulative impacts. The cumulative projects identified in Table 5-1 would also be expected to have mitigation measures that would reduce potential impacts on resources, but impacts could remain even after mitigation. Federally licensed projects, such as the Mission Hills Pressure Zone Infrastructure Improvement Project, would require, or have required, compliance with Section 106 of the National Historic Preservation Act to consider and resolve adverse effects to significant cultural resources. Likewise, compliance with CEQA and AB 52 for projects such as the Chromium-6 Water Treatment Facilities Project, would be expected to reduce impacts on resources, but impacts could remain adverse. Given the lack of identified resources in the Project APE, as discussed in Sections 3.7 and 4.7, the Project's contribution to this cumulative impact would not be cumulative considerable.

With regard to disturbance of human remains, the Project could contribute an incremental effect to cumulative impacts within the region. While no human remains have been identified within the Project area, there is a potential for their discovery during Project construction, and this would hold true for other

cumulative projects. In the unlikely event of an accidental discovery of human remains during Project construction, EC's C-1, C-2, C-3, would reduce adverse effects, such that the Project's contribution would not be cumulative considerable.

CEQA Significance Conclusion

The proposed Project and alternatives would include the implementation of ECs and Mitigation Measure CUL-1 (Tribal Cultural Resources Monitoring) reducing impacts during Project construction activities to a less-than-significant level. The Project's impacts are unlikely to combine with other projects in the region and would not be cumulatively considerable (Class III).

5.4.7 Land Use and Recreation

5.4.7.1 Spatial and Temporal Boundaries

The geographical area for a cumulative analysis of recreation and land use impacts is defined by the land uses that are located within 0.5 mile of the Project footprint, truck routes, and sediment disposal sites, as well as recreational resources within 5 miles of the Project area. Project impacts to existing land uses would be localized, and are associated with the adverse effects of noise, emissions, and traffic from numerous truck trips and construction equipment concentrated along the proposed routes and staging areas. Public closure of recreational resources within 5 miles of the Project could contribute to adverse cumulative effects on recreation.

5.4.7.2 Cumulative Effects of the Proposed Project and Alternatives

As discussed in Section 4.8, construction of the proposed Project or its alternatives would create a physical barrier within the community of Thousand Palms, which would have a cumulatively considerable adverse effect on established communities that could combine with other projects in the region that could create physical structures in the community.

Construction of the proposed Project would be designed to comply with federal, state, and local regulations, and consistent with applicable land use plans well as the goals of the Coachella Valley Multiple Species Habitat Conservation Plan/Natural Community Conservation Plan. Other projects in the region, including those listed in Table 5-1, would be required to comply with similar regulations or implement measures similar to those for the proposed Project.

None of the projects listed in Table 5-1 are anticipated to preclude an existing recreational resource, although development in the Thousand Palms area would put addition burden on existing recreational resources that could result in a cumulatively significant impact. The proposed Project and alternatives would permanently displace recreational land uses; however, and therefore would result in a cumulatively impact to recreational resources.

CEQA Significance Conclusion

Construction of the proposed Project, or its alternatives, would result in a significant land use impact through the introduction of barriers between residences in the Community of Thousand Palms, which could combine with other development projects in the region to create a significant cumulative impact (Class I). Additionally, the Project would result in the permanent displacement of recreational land uses, which when combined with additional stresses to recreational resources from other development projects, would result in a significant cumulative impact (Class I). The Project, as well as other projects in the region, would adhere to all applicable land use plans, policies, or regulations, or would be required to

implement project-specific mitigation measures, such that cumulative impacts related to conflicts with applicable land use policies would not occur.

5.4.8 Noise

5.4.8.1 Spatial and Temporal Boundaries

The geographic area of analysis for cumulative impacts to noise is generally limited to areas within approximately 0.5 mile of a work site, including the haul truck routes. This area is defined as the geographic extent of the cumulative noise analysis because temporary construction and haul truck noise impacts would be localized. At distances greater than 0.5 mile, impulse noise may be briefly audible and steady construction noise would attenuate such that the level of noise would blend in with background noise levels.

Ground vibrations dissipate more rapidly than noise, limiting the geographic extent of ground vibration to the immediate vicinity of the vibration source. As noted in Section 4.9 (Noise), the geographic extent of potentially significant ground vibrations seldom extends more than 500 feet from the source of the vibrations.

Based on the geographic extent defined above, the following cumulative projects were identified as being located within 0.5 miles of the Project and thus are applicable to the noise analysis:

- Map ID #1: Specific Plan 338 (Mirasera)
- Map ID #2: Specific Plan 360 (Valanté)
- Map ID #3: Ivey Palms Specific Plan 392
- Map ID #5: Specific Plan 343 (Northstar Palm Desert Specific Plan)
- Map ID #11: Coachella Valley Arena
- Map ID #12: Sam Jones Mine
- Map ID #14: Varner Road Resurfacing
- Map ID #67: Whitewater River Groundwater Replenishment Project.

5.4.8.2 Cumulative Effects of the Proposed Project and Alternatives

Noise in the area of the Project has likely been steady over time, with the main noise source resulting from increasing development in the region. Along the haul routes and near the Project site, continued residential development and traffic growth is slowly changing the quiet desert area such that ambient noise levels existing today are higher than would have occurred prior to such development, especially during daytime hours when traffic and human activity are greatest. Noise and vibration impacts are dependent on distance and timing, such that proximity to the Project and the potential for coinciding construction times would have the greatest potential for contributing to cumulative impacts.

It is unknown exactly which of the projects listed above in Section 5.4.8.1 would overlap with the construction phases of the Project's various components. As discussed in Project Description Table 2-2, the proposed Project would be constructed in phases, with the Reach 4 construction activities, including the Washington Street Crossing, taking the longest amount of time, and thus the greatest potential for overlap with other projects in the region.

Sensitive noise receptors along Reaches 1 through 4 include single-family residences, as well as recreation and school use. These receptors vary from being located within 50 feet for work at the Sun City Collection Basin, to 275 feet from homes in Reach 1, to up to 330 feet from homes along Reach 3. Construction of the proposed Project, as well as its alternatives, would occur in relatively close proximity to these sensitive

receptors, including residences of the Del Webb/Sun City development, the Xavier Preparatory College High School, as well as residences along Reaches 1-4. As such, the community would experience substantial temporary increases in ambient noise levels during construction, even with implementation of ECs and mitigation measures, which could be cumulatively considerable if additional projects in the region are being constructed at the same time.

As discussed in Section 4.12 (Socioeconomics and Environmental Justice), it is anticipated that several of the large residential projects, which would receive flood protection from the proposed Project, or its alternatives, would be constructed after the proposed Project were installed, and would not overlap in the construction timelines. Such projects potentially include Map IDs #1, 2, 3, 5, 10, 11, 14, and 61. If these projects or other projects in the region were to be constructed at the same time as the Project, the resulting cumulative increase in ambient noise levels could be considerable.

O&M activities for the proposed Project, as discussed in Section 2.2.3, would primarily include periodic sand removal and redistribution within the Coachella Valley Preserve. These periodic activities could combine with projects in the region, only if activities overlap. However, the Project's contribution would not be cumulatively considerable as O&M activities would occur intermittently and would be dispersed.

Under the No Action Alternative, any noise generating activities which may otherwise result from the Project would not occur. However, cleanup activities in the event of catastrophic flooding would impact the ambient noise levels of the area and could potentially result in cumulative impacts.

CEQA Significance Conclusion

During construction of the proposed Project or alternatives the Thousand Palms community would experience substantial temporary increases in ambient noise levels, even with implementation of ECs and mitigation measures, which could be cumulatively considerable if additional projects in the region are being constructed at the same time (Class I). While periodic O&M activities could combine with identified cumulative projects (only if activities overlap), any increase in ambient daytime noise levels are considered negligible and would not be cumulatively considerable.

5.4.9 Paleontology

5.4.9.1 Spatial and Temporal Boundaries

The geographic extent of cumulative analysis for paleontology is limited to the area immediately underlying and adjacent to the Project footprint. This area is considered sufficient to capture potential cumulative effects to paleontology because the primary impacts to paleontological resources result from excavation or grading if previously buried paleontological resources are unearthed.

5.4.9.2 Cumulative Effects of the Proposed Project and Alternatives

As discussed in Section 4.10 (Paleontological Resources), the Project area is underlain with geologic deposits which have a low paleontological sensitivity, due to their young age. The proposed Project, and its alternatives, would implement MM PR-1 (Paleontological Training) and MM PR-2 (Unanticipated Discovery of Paleontological Resources), which would allow for workers to identify fossil resources, ensure that a qualified paleontologist is on staff, and establish procedures to protect, recover, and curate any resources discovered. As such, the Projects impacts would not be cumulatively considerable. Furthermore, it is unlikely for the Project to have a cumulative effect because paleontological impacts are typically project-specific, and with implementation of similar mitigation measures for other projects, the potential for cumulative impacts would be minimized.

CEQA Significance Conclusion

The proposed Project, and its alternatives, are located in an area of low paleontological sensitivity, such that the likelihood of impacting scientifically significant vertebrate fossils as a result of construction is low, unless excavations disturb older underlying sensitive units. With implementation of recommended mitigation measures, and the low likelihood of fossil occurrence within the Project footprint, impacts on paleontological resources from the Project would not be cumulatively considerable.

5.4.10 Public Safety

5.4.10.1 Spatial and Temporal Boundaries

The area of potential cumulative effects is defined as a 0.5-mile buffer around the Project footprint and the haul route between Reaches 1-4. Because the Project would not transport substantial quantities of hazardous materials, this cumulative analysis area defines the spatial extent of potential cumulative effects with respect to risk of upset. Cumulative impacts for public safety are assessed based on consideration of past, current, and future development in the Project area, and are not limited to the projects listed in Table 5-1.

5.4.10.2 Cumulative Effects of the Proposed Project and Alternatives

As discussed in Section 4.11 (Public Safety), the proposed Project, or its alternatives, would not increase the need for new government facilities to maintain response times. While in combination with other projects in the region, such as those listed above in Table 5-1, demand may ultimately result in the need for new facilities to maintain response times, the proposed Project would not result in a cumulatively considerable effect. The Project footprint is located more than two miles from the nearest airport and would not contribute to any effects on public safety through the introduction of construction equipment into airspace. The proposed Project would implement MM PS-1 (Standard Measures to Reduce Fire Risk) to reduce the potential hazard for wildland fires. As such, the Project's contribution would not be cumulatively considerable. It is anticipated that similar projects in the region would be required to implement similar measures to reduce their project-specific wildfire risk.

Although other projects in the area of potential cumulative effects could result in accidental spills of hazardous waste that could contaminate water resources or expose the public to hazardous materials, the Project would result in negligible impacts with respect to releases of hazardous waste with implementation of MMs PS-2, PS-3, and PS-4. Similarly, the Project impacts related to risk to public health (such as hazardous emissions or unknown environmental contamination) are negligible. The Project would be constructed using standard construction equipment and using standard materials, neither of which would produce hazardous emissions or release acutely hazardous materials. Due to the evolving nature of dumped materials throughout the Project area, implementation of MMs PS-5 and PS-6 would identify any contamination within the Project footprint and establish response procedures. It is anticipated that other projects in the region would implement similar measures, and the Project's contribution to public health risk would not be cumulatively considerable.

CEQA Significance Conclusion

The Project would result in negligible impacts with respect to releases of hazardous waste and other risks to public health after implementation of recommended mitigation measures. The incremental effect of the Project's contribution to cumulative impacts would not be cumulatively considerable (Class III).

5.4.11 Socioeconomics and Environmental Justice

5.4.11.1 Spatial and Temporal Boundaries

The study area for cumulative analysis for socioeconomics and environmental justice is the community of Thousand Palms. This study area was selected to accurately capture potential effects and because the purpose of the Project is to protect the community of Thousand Palms from flooding hazards.

5.4.11.2 Cumulative Effects of the Proposed Project and Alternatives

A cumulative effect on socioeconomics or environmental justice could result if the proposed Project, or one of its alternatives, in combination with the projects listed in Table 5-1 would displace substantial numbers of people or housing, increase demand for permanent housing, induce substantial population growth, result in disproportionately high and adverse impacts on minorities, or result in adverse impacts on the local economy.

As discussed in Section 4.12 (Socioeconomics and Environmental Justice), the CVWD is responding to the need for flood protection in the areas of existing housing within the district through the Project. Ongoing development in the region is currently allowed with implementation of Riverside County flood control mitigation measures and compliance with various building codes designed to mitigate flood hazards on a project-by-project basis. Implementation of the Project would remove the need for flood control mitigation for projects, which would otherwise be in the flood zone, and could indirectly induce development in the region. Although this development has been and will continue to occur with or without this Project subject to County of Riverside zoning, building codes, growth projections, and land use planning. As such, the proposed Project or its alternative would not have a cumulatively considerable effect on population growth.

Neither the proposed Project, nor any of its alternatives would displace substantial numbers of people or housing which could necessitate the construction of replacement housing elsewhere. As discussed in Section 4.12 under Impact S-1, a total of 126 parcels would need to be acquired for the proposed Project, including 7 residential properties. This would constitute a 0.2 percent reduction in the housing supply. Several other projects located within the Thousand Palms area would result in the installation of additional housing, which would improve housing availability, such that no negative cumulative impact on housing supply would occur.

The Project does not involve the construction of new homes or businesses which could result in the demand for new housing. There is ample existing housing supply in the Thousand Palms area, and it is expected that the new housing developments listed in Table 5-1 would gradually be constructed in response to projected and future demand for housing within the Thousand Palms area.

CEQA Significance Conclusion

Environmental Justice and economic impact analysis are not required under CEQA. Therefore, no CEQA significance conclusion for those topics is presented. The proposed Project and its alternatives would only slightly reduce the available housing supply, which would not be cumulatively considerable, while future projects would increase the available housing supply. While the proposed Project would remove obstacles for development by removing areas from FEMA Flood Hazard Areas, development within these areas is currently not prohibited, and has continued to proceed without the Project based on local demand. The proposed Project or its alternatives would not combine with other projects in the region to increase the local population or associated demand for local housing. As such, the proposed Project or its alternative would result in less than significant cumulative socioeconomic impacts (Class III).

5.4.12 Transportation

5.4.12.1 Spatial and Temporal Boundaries

For the purposes of the cumulative analysis of transportation impacts, only other projects that make a contribution to traffic along the same roadways utilized by the Project are considered (refer to Section 4.13, Transportation). During all phases of the Project, roadway segments where Project trips occur could combine with cumulative projects resulting in an appreciable increase in traffic. A wide variety of activities and development contribute to the cumulative traffic conditions including residential, commercial, and industrial development in the local area. Therefore, all projects identified in Table 5-1 have been considered with respect to this cumulative traffic analysis.

5.4.12.2 Cumulative Effects of the Proposed Project and Alternatives

During construction of the proposed Project and alternatives multiple truck trips per day would be generated for delivery of materials, equipment, and personnel to the construction sites. Construction and operation of other projects utilizing the same roadways in the Project area during this same construction period would result in an adverse cumulative impact on local streets and roads. Project-related transportation effects would not result in long-term impacts to traffic and circulation in the area. Once construction of the Project is complete, minimal traffic for maintenance purposes would be generated and would not be cumulatively considerable.

CEQA Significance Conclusion

Periodic O&M activities would not generate a sizeable amount of traffic which could combine with traffic from other projects, such that Project O&M impacts would not be cumulatively considerable. However, during construction Project-related traffic would be significant and when combined with other projects utilizing the same roadways, cumulative impacts would be significant (Class I).

5.4.13 Water Resources

5.4.13.1 Spatial and Temporal Boundaries

The area of potential cumulative effects for water resources is defined as the drainage area bordered by the south flanks of the Little San Bernardino Mountains on the north and east, the Morongo Wash/Mission Creek drainage divide on the west, and Interstate 10 (I-10) on the south. In particular, the following projects could have the greatest potential to combine with the Project's effects on water resources.

- Map ID #1: Specific Plan 338 (Mirasera),
- Map ID #2: Specific Plan 360 (Valanté),
- Map ID #3: Ivey Palms Specific Plan 392,
- Map ID #5: Specific Plan 343 (Northstar Palm Desert Specific Plan),
- Map ID #6: Surface Mine,
- Map ID #7: Simon Mine,
- Map ID #9: Edom Hill Landfill Final/Post Closure Plan,
- Map ID #10: Coachella Valley Plan General Plan Amendment,
- Map ID #11: Coachella Valley Arena,
- Map ID #12: Sam Jones Mine,
- Map ID #14: Varner Road Resurfacing,
- Map ID #18: Thousand Palms Canyon Road Widening and Resurfacing Project,

- Map ID #52: Virada,
- Map ID #53: I-10 New and Used Car Annex,
- Map ID #61: Non-Potable Water Connections Project,
- Map ID #63: East Side Dike Improvement Project, and
- Map ID #67: Whitewater River Groundwater Replenishment Project

Cumulative impacts for water quality and resources are assessed based on consideration of past, current, and future development, and are not limited to the projects listed in Table 5-1.

5.4.13.2 Cumulative Effects of the Proposed Project and Alternatives

Construction of the proposed Project, or its alternatives, would result in ground disturbing activities which could loosen and destabilize soils. These loose and destabilized soils could be mobilized during a subsequent storm event and could result in increased turbidity and sediment deposition in nearby drainages. The Project would be required to obtain a Stormwater Pollution Prevention Plan (SWPPP) and maintain compliance with applicable permits, through the implementation of various Best Management Practices (BMPs) to limit runoff. If other projects in the region were undergoing construction at the same time, this mobilization could combine with runoff from other projects in the region. However, other large construction projects would also be required to obtain a project-specific SWPPP and implement BMPs. With implementation of project-specific BMPs, offsite soil mobilization is unlikely to combine with other projects in the region and cause a cumulatively adverse effect, due to the temporal nature of construction overlap, and arid climate in the region.

Construction of the proposed Project, and its alternatives, would require the use of water for dust suppression, soil conditioning, and the mixing of soil cement. It is anticipated that this water would be obtained from public hydrants supplied by the CVWD. As discussed on Section 4.12 (Water Resources), construction water use for the Project would be temporary and would represent a small percentage of the total available water supply from the CVWD. It is anticipated that other projects in the region which would require industrial quantities of water would coordinate with CVWD or other water agencies on a project-specific basis for water supply. Such coordination would ensure that water usage in the region does not exceed the available water supply in the region and cause a cumulative adverse effect.

Construction of the Project would add roughly six miles of levees/channels to protect residents of Thousand Palms from seasonal and periodic flooding. The Project would purposefully redirect flood flows away from inhabited areas, removing people and structures from risk of damage due to flooding. The Project would not involve the construction or installation of holding ponds, dams, or any other water storage structures which could potentially rupture and cause flooding. While other projects in the region, such as Map ID #64 (Eastern Coachella Valley Stormwater Master Plan) would install and/or improve such structures, those effects would be project-specific and would not combine with the proposed Project or its alternatives.

Construction and operation of the Project would substantially alter the natural drainage patterns in the immediate Project area. Floodwaters with a predominantly southerly flow would be intercepted and directed generally towards the east-southeast. These intercepted flows would be concentrated from sheet flows to more channel-like flows along the toes of the levees and within the channelized reaches. This concentrated stormwater flow could lead to localized increases in erosion and sedimentation. However, the Project includes the installation of a sediment basin at the downstream end of Reach 1, which would reduce storm flow velocity and avoid adverse effects associated with erosion or channel migration. Additionally, the Reach 3 and Reach 4 channels would divert stormwater flows from the southeast end of the Classic Club Golf Course to Washington Street, at which point flows would be guided

under Washington Street and into an existing conveyance system with the capacity to transmit proposed Project-related flows. These flows would discharge into an existing detention basin that would be deepened as part of the Project, such that the current infiltration capacity of the Project area is maintained. Therefore, off-site flooding would not increase from baseline conditions due to construction or operation of the Project.

CEQA Significance Conclusion

While the Project might combine with other projects in the region, offsite soil mobilization which could lead to violations of water quality standards, waste discharge requirements, or contaminate groundwater, is unlikely to combine with other projects in the region with implementation of the SWPPP, project-specific BMPs, and in consideration of the temporal nature of construction overlap, and the arid climate in the region. Impacts would not be cumulatively considerable. The Project's construction water use would be temporary and represent a small percentage of the total available water supply from the CVWD, such that water supply impacts would not be cumulatively considerable. The Project has been designed to tie into existing facilities with capacity to accept the flood flows and would purposefully redirect storm water flows within the region to remove people and structures from risk of damage due to flooding resulting in a beneficial impact (Class III).

5.4.14 Tribal Cultural Resources

5.4.14.1 Spatial and Temporal Boundaries

The geographic scope for the analysis of cumulative impacts on cultural and tribal cultural resources includes all the projects listed in Table 5-1 and shown on Figure 5-1. This is a relatively wide geographic scope because most impacts to cultural and tribal cultural resources occur on the site of the resource itself through physical disturbance or encroachment. The proximity of resources to the Project would be of interest only to the extent that proximity would considerably affect the context or integrity of the resource. Within the cumulative study area of the Project, there are currently at least 67 past, present, and future projects, which could disturb more than 2,000 acres. Table 5-1 provides a list of specific projects that are considered in the cultural cumulative scenario by jurisdiction and their location to the Project, as well as a description of each project.

5.4.14.2 Cumulative Effects of the Proposed Project and Alternatives

Impacts to tribal cultural resources tend to be site specific and are assessed on a site-by-site basis. The Project would not impact known tribal cultural resources; however, there is a potential for unanticipated and previously unidentified resources to be present within the Project area. This potential is considered to be low and the Project would implement EC C-1, and MM TCR-1, thus reducing the Project's contribution to cumulative impacts. The cumulative projects identified in Table 5-1 would also be expected to have mitigation measures that would reduce potential impacts on resources, but impacts could remain even after mitigation. Compliance with CEQA and AB 52 for projects such as the Chromium-6 Water Treatment Facilities Project, would be expected to reduce impacts on resources, but impacts could remain adverse. Given the lack of identified resources in the Project APE, as discussed in Sections 3.15 and 4.15, the Project's contribution to this cumulative impact would not be cumulative considerable.

CEQA Significance Conclusion

The proposed Project and alternatives would include the implementation of ECs and Mitigation Measure CUL-1 (Tribal Cultural Resources Monitoring) reducing impacts during Project construction activities to a

less-than-significant level. The Project's impacts are unlikely to combine with other projects in the region and would not be cumulatively considerable (Class III).

5.4.15 Energy Resources

5.4.15.1 Spatial and Temporal Boundaries

The geographic scope for the analysis of cumulative impacts on energy resources includes all the projects listed in Table 5-1 and shown on Figure 5-1.

5.4.15.2 Cumulative Effects of the Proposed Project and Alternatives

Construction of the proposed Project, or its alternatives, would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources (Impact E-1) and would not conflict with any plans for renewable energy or energy efficiency (Impact E-2).

The range of cumulative projects identified in Section 3.3.2, Relevant Cumulative Projects, includes transportation, commercial, and residential developments, and other infrastructure projects. Although development activities associated with cumulative projects would require the use of fossil fuels, similar to fossil fuel demands of the Proposed Project, each project could be expected to initiate feasible energy-saving efficiencies and to comply with applicable building standards, energy policies and regulations as part of project approval to reduce wasteful, inefficient, or unnecessary use of energy resources.

In addition, the project is designed to make maximum reuse of project site materials, which will minimize the import of raw materials and the export of wastes during project construction. Additionally, the project's on-site concrete batch plant will minimize the transportation distance for the large quantity of soil cement used for project construction. Eroded materials removed during project O&M activities in the downwind/downstream project areas will be recycled to upwind/upstream project areas, rather than being sent to off-site disposal sites. These construction and O&M project features will increase project efficiency substantially.

The proposed Project would also reduce the energy consumption required for repair and storm waste removal construction activities after severe storm events. However, the frequency and activity required by such storm events is unknown.

CEQA Significance Conclusion

While the Project might combine with other projects in the region, construction of the proposed project would result in net reductions of energy overtime by reducing post storm debris and cleanup activities from homes and infrastructure that could be damaged by storm flows and the incremental effect of the proposed Project would not be cumulatively considerable (Class III).

5.4.16 Wildfire Resources

5.4.16.1 Spatial and Temporal Boundaries

The area of potential cumulative effects for water resources is defined as the drainage area bordered by the south flanks of the Little San Bernardino Mountains on the north and east, the Morongo Wash/Mission Creek drainage divide on the west, and Interstate 10 (I-10) on the south. In particular, the following projects could have the greatest potential to combine with the Project's effects on wildfire resources.

Cumulative impacts for wildfire resources are assessed based on consideration of past, current, and future development, and are not limited to the projects listed in Table 5-1.

5.4.16.2 Cumulative Effects of the Proposed Project and Alternatives

Construction of the proposed Project, or its alternatives, would not increase or exacerbate the risk of wildfire in the region. As discussed under Impacts WF-2 and WF-3, the Project is not located in a moderate, high, or very high FHSZ and is not in an area prone to wildfires. The Project site is in a rural, largely undeveloped desert area approximately 1-2 miles from the nearest moderate FHSZ. Due to the presence of sparse vegetation, rural desert location of the Project, and ongoing vegetation maintenance occurring under O&M activities, the potential for the Project to exacerbate wildfire risks and expose nearby residents to the hazards of a wildfire is very low. In addition, environmental commitments PS-1, PS-2, PS-3, and PS-5 would implement best management practices and worker training during construction to reduce the potential for fire ignition and increased wildfire risk.

CEQA Significance Conclusion

While the Project might combine with other projects in the region, the risk of increasing wildfire risks or other risks associated with wildfires is unlikely to combine with other projects in the region with implementation of project-specific BMPs, and in consideration of the temporal nature of construction overlap impacts would not be cumulatively considerable (Class III).

6. Other Federal Requirements and CEQA Considerations

6.1 Short-term Uses and Long-term Productivity

The Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR Part 1500 et seq.) require that an EIS discuss issues related to environmental sustainability. In general, this EIS discussion is not included as environmental effects for which either significance is defined, or mitigation is recommended. However, the discussion, as it relates to environmental consequences, must be included in the EIS, including consideration of "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity" (42 USC Section 4332[C] [iv]).

In this section, the short-term effects and uses of various components of the environment in the vicinity of the Project are related to long-term effects and the maintenance and enhancement of long-term productivity. "Short term" refers to the total duration of the Project, whereas "long term" refers to an indefinite period beyond the construction and maintenance of the Project. The specific impacts of the Project vary in kind, intensity, and duration according to the activities occurring at any given time. The Project involves tradeoffs between long-term productivity and short-term uses of the environment.

Construction activities would result in a number of temporary (short-term) impacts that would cease upon completion of the construction phase. Such impacts include temporary impacts to scenic visits due to large construction equipment, short-term alteration of site topography due to spoils piles, impacts associated with temporary disturbance areas, and temporary increases in noise and traffic. Each of these impacts is described in detail in Section 4, including mitigation measures that have been proposed to minimize impacts to the extent feasible. During the operations and maintenance (O&M) period, aeolian transport within the Coachella Valley Preserve would be facilitated by periodically removing built-up sand along the proposed levee and placing it within the Preserve for redistribution.

As described in Section 1.3.2 (Purpose and Need), the underlying purpose for the Project is to provide flood hazard protection to areas of Thousand Palms located within the FEMA-designated Flood Hazard Area (see Figure 1-3, FEMA Flood Hazard Areas), which would otherwise be inundated by storm water flows associated with the 100-year storm event, or the magnitude storm with a one percent chance of occurring during any given year. As such, the Project has been designed to create a long-term benefit to the community of Thousand Palms, while avoiding adverse effects to wildlife and habitats within the Coachella Valley Preserve and Wildlife Refuge (respectively).

6.2 Irreversible and Irretrievable Commitment to Resources

Pursuant to Section 15126.2(c) of CEQA Guidelines, an EIR must address significant irreversible and irretrievable environmental changes that would be caused by a proposed project. NEPA Section 1502.16 also requires an EIS to include a discussion of "any irreversible and irretrievable commitments of resources which would be involved in the proposed action/project (Project) should it be implemented." These changes include uses of nonrenewable resources during construction and operation, long-term or permanent access to previously inaccessible areas, and irreversible damages that may result from project-related accidents.

Implementation of the Project would result in the consumption of energy as it relates to the fuel needed for construction-related activities. As provided in Appendix B (Air Quality Calculations), total fossil fuels used by construction vehicles and equipment associated with the Project would include approximately 58,049 gallons of gasoline and 463,107 gallons of diesel fuel. In addition, after construction is complete, the annual O&M activities are estimated to consume as much as 707 and 11,972 gallons of gasoline and

diesel respectively. The anticipated equipment, vehicles, and materials required for construction and maintenance activities are detailed in Chapter 2 (Proposed Project and Alternatives).

As described in Section 2.2.1, excavated sediment would be reused as much as possible (e.g., distributed along the floodway for natural distribution onto the preserve or placed in the proposed USFWS disposal area). CVWD has also incorporated EC GHG-1 (Recycle Construction Wastes) into the Project, which requires recycling of construction waste and removed sediment to the extent feasible.

6.3 Unavoidable Adverse Effects

As required by the CEQ NEPA Regulations (40 C.F.R. § 1502.16) and Section 15126.2(b) of the CEQA Guidelines, this EIS/EIR describes the adverse or significant environmental effects that cannot be avoided through implementation of the Project or alternatives. In Section 4 of this document, the direct, indirect, and cumulative environmental effects of the Project are discussed in detail. Impacts that are significant and cannot be avoided or reduced to less-than-significant levels through the application of feasible mitigation measures have been characterized as Class I impacts. All significant and unavoidable Class I impacts resulting from the Project and alternatives are summarized below. Refer to Sections 4.1 through 4.14 for a complete description of these impacts.

- **Impact AS-1:** The Project could cause an adverse effect to a scenic vista.
- **Impact AS-2:** The Project could degrade the existing visual character or quality of the site and its surroundings.
- **Impact AQ-2:** Project construction emissions could exceed South Coast Air Quality Management District (SCAQMD) local significance thresholds.
- **Impact AQ 4:** Project construction emissions could exceed SCAQMD Localized Significance Thresholds.
- **Impact AQ-6:** Project toxic air contaminant emissions could cause SCAQMD health risk thresholds to be exceeded.
- **Impact L-3:** Construction of the Project could permanently disrupt or displace existing residential, business, educational, and recreational land uses.

6.4 Growth Inducement

Section 15126.2(d) of the CEQA Guidelines requires that an EIR discuss the ways in which a proposed project may foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The CEQ NEPA Regulations also provide for discussing the growth-inducing impacts of a project. As stated in 40 C.F.R. § 1508.8(b) of the Guidelines, "Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." The discussion must additionally address how a proposed project may remove obstacles to growth or encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Significant growth impacts could also occur if a project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

As discussed in Section 4.12 (Socioeconomics and Environmental Justice) under Impact S-3, the Project would not construct housing or permanently relocate people to the Project area and would therefore not directly induce growth. However, flood improvements that would occur under the Project would remove existing flood hazards in the Thousand Palms area and may therefore indirectly accommodate development south of the Project. While development in the Project area has expanded aggressively over the past decade and is expected to continue regardless of the Project, several approved projects (Mirasera and Valenté) are dependent upon the Project in so far as they will not be constructed until a drainage facility (such as the proposed Project) is constructed. Alternatively, the Project would introduce a floodway area (550 acres) between Reach 1 and Reach 3 where development would be prohibited to protect the wind corridor and limit disruptions to sand migration. Therefore, although the Project may indirectly facilitate development south (downstream) of the Project features, it would also inhibit development north (upstream) of the Project features. Any growth in the Project area would be required to be consistent with the Riverside County General Plan, which designates the area for future residential, commercial, and industrial development.

6.5 Compliance with Applicable Federal Regulations and Policies

Section 6.5 discusses applicable federal environmental regulations and describes how the Project has been developed in accordance with the requirements of these environmental statutes and regulations.

6.5.1 Clean Water Act

The Federal Water Pollution Control Act was passed in 1972 and was amended in 1977 as the Clean Water Act (CWA, 33 USC 1251, 1376). The CWA was reauthorized in 1981, 1987, and 2000, and establishes the basic structure for regulating discharges of pollutants into federally jurisdictional waters, or waters of the U.S. The U.S. Environmental Protection Agency (USEPA) has the authority to implement pollution control programs under the CWA, which requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface waters. Many pollutants are regulated under the CWA, including various toxic pollutants, total suspended solids, biological oxygen demand and pH (acidity/alkalinity measure scale). Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process. Specific sections of the CWA are summarized below, with respect to the Project.

The Project would affect federally jurisdictional waters and would disturb more than one acre in total; therefore, the Project would be required to obtain a Clean Water Act Section 402 National Pollutant Discharge Elimination System (NPDES) Construction General Permit from the Colorado River Basin Regional Water Quality Control Board (RWQCB). This General Permit would require preparation of a Stormwater Pollution Prevention Plan (SWPPP).

The Project would affect jurisdictional waters of the State or waters of the U.S. During construction and O&M, these impacts would include placing fill material into jurisdictional waters to construct levees; constructing channels or other flood control structures across jurisdictional drainages; redirecting runoff into the floodway; and by other construction or O&M activities that eliminate or redirect natural runoff. As such, a Section 404 permit would be required for the Project. In addition, a Water Quality Certification pursuant to Section 401 of the CWA is required for Section 404 permit actions.

6.5.2 Clean Air Act

The 1990 amendments to the federal Clean Air Act (CAA) Section 176 require the United States Environmental Protection Agency (USEPA) to promulgate rules to ensure that federal actions conform to the appropriate State Implementation Plan (SIP). These rules, known together as the General Conformity

Rule (40 CFR Sections 51.850-51.860; 40 CFR Sections 93.150-93.160), require any federal agency responsible for an action in a nonattainment or attainment/maintenance area to determine that the action conforms to the applicable SIP or that the action is exempt from the General Conformity Rule requirements. This means that federally supported or funded activities will not (1) cause or contribute to any new federal air quality standard violation, (2) increase the frequency or severity of any existing federal standard violation, or (3) delay the timely attainment of any federal standard, interim emission reduction, or other milestone. Actions can be exempt from a conformity determination if an applicability analysis shows that the total direct and indirect emissions from project construction and operation activities would be less than specified emission rate thresholds, known as *de minimis* limits, and that the emissions would be less than 10 percent of the area emission budget.

6.5.2.1 CAA Conformity

As discussed above, Section 176(c) of the CAA states that a federal agency cannot issue a permit for, or support an activity within, a nonattainment or maintenance area unless the agency determines it will conform to the most recent USEPA-approved SIP. This means that projects using federal funds or requiring federal approval must not: (1) cause or contribute to any new violation of a national ambient air quality standard (NAAQS); (2) increase the frequency or severity of any existing violation; or (3) delay the timely attainment of any standard, interim emission reduction, or other milestone. The General Conformity Rule was updated in March 2010. The revisions to the General Conformity Rule no longer require a regional significance determination to demonstrate that emissions do not exceed 10 percent of the regional emissions inventory.

Based on the present attainment status of the Salton Sea Air Basin, a federal action would conform to the SIP if its annual emissions remain below 70 tons of PM10 or 25 tons of NOx or VOC. These *de minimis* levels apply to both construction and O&M activities. SCAQMD Rule 1901 adopts the guidelines of the General Conformity Rule.

For the proposed Project, federal approval is required. Therefore, the Project's construction and O&M emissions are evaluated for compliance with this regulation (see Section 4.3, Air Quality).

6.5.3 Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides the USEPA with the authority to identify and clean up contaminated hazardous waste sites. CERCLA also contains enforcement provisions for the identification of liable or responsible parties. It details the legal claims that arise under the statute and provides guidance on settlements with the USEPA. Section 120 of CERCLA addresses hazardous waste cleanups at Federal facilities and requires the creation of a Federal Agency Hazardous Waste Compliance Docket, which lists facilities that have the potential for hazardous waste problems.

As discussed in Section 3.11.1.1, a Limited Phase 1 Environmental Site Assessment (ESA) was conducted for the Project area in July 1997. The ESA included a review of historic aerial photographs of the Project area, a search of databases listing known or suspected sites of contamination, and field reconnaissance of the area. A revised Phase I ESA was not repeated in 2016 because conditions relevant to environmental contamination are considered comparable. Furthermore, a search of the USEPA website confirmed there are no hazardous waste cleanup locations or grant areas within 15 miles of Thousand Palms, California. As discussed, the likelihood of encountering previously unknown contamination is extremely low. During implementation (construction and operation/maintenance) of the proposed Project, conformance with CERCLA would only be engaged if unforeseen waste is found or abandoned on-site in the future. Please

see Section 3.11 (Public Safety) for a detailed discussion of potential environmental contamination and hazards.

6.5.4 Endangered Species Act

The Endangered Species Act (ESA), which is administered by the U.S. Fish and Wildlife Service (USFWS), establishes legal requirements for conservation of endangered and threatened species and the ecosystems upon which they depend. Section 7 of the ESA requires federal agencies to consult with the USFWS to ensure that their actions are not likely to jeopardize listed threatened or endangered species, or cause destruction or adverse modification of critical habitat. Section 10 of the ESA requires similar consultation for non-federal applicants.

As described in Section 3.6 (Biological Resources), the Project site includes USFWS-designated critical habitat for Coachella Valley fringe-toed lizard (*Uma inornata*) and Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) (see Figure 3.6-2, Critical Habitat, and discussions of both species in Sections 3.6.1.4 and 3.6.1.6). Critical habitat is defined as the specific areas within the geographical range occupied by the species that possess the physical or biological features essential for the conservation of the species and that may require special management protection. The Coachella Valley fringe-toed lizard requires aeolian sand habitat and the Coachella Valley milk-vetch requires fluvial or aeolian sand habitat. Therefore, the boundary of the designated critical habitat for each species extends beyond the limits of the species' distribution to include the upwind and upstream sand source, which is essential in maintaining fluvial and aeolian sand habitat (USFWS, 1985; USFWS, 2013).

The Project site is within the area covered by the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). The CVMSHCP is intended to conserve sensitive species and their habitats and satisfy the legal requirements for the issuance of permits that will allow the take of species covered by the CVMSHCP in the course of otherwise lawful activities (~~CVAG,~~ CVCC, 2007). The Coachella Valley Water District (CVWD) is a CVMSHCP permittee. As a permittee, CVWD has 'take'[1] authorization for covered species or loss of their habitat on private lands, so long as compliance with the requirements of the CVMSHCP is achieved (see Section 4.6, Biological Resources).

A Biological Assessment (BA) has been prepared for the Project (see Appendix C.3) to address impacts to the federally listed Coachella milk-vetch and the Coachella fringe-toed lizard and their critical habitats where located on federal land. Formal consultation with the USFWS was initiated to determine whether the Project is likely to jeopardize the continued existence of any species or adversely modify its critical habitat. The USFWS issued a Biological Opinion for the proposed Project on September 27, 2022 (see Appendix C.6). A primary objective of this Project is to enhance the sand transport system in the area and to avoid or minimize adverse effects to wildlife and habitat as a result of the proposed Project.

6.5.5 Executive Order 13690

On January 30, 2015, President Obama issued Executive Order 13690, which revises Executive Order 11988 (see Section 6.5.6) and proposes a new Federal Flood Risk Management Standard (FFRMS). The executive order and new standard apply to federal actions such as federal grants used for repair and redevelopment after a natural disaster. The FFRMS gives agencies flexibility to select one of three

[1] Under the Federal Endangered Species Act, 'take' is defined as, "…to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (USFWS, 2011b). Under Section 86 of the California Fish and Game Code, 'take' is defined as "…hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (CDFW, 2015d).

approaches for establishing the flood elevation and hazards of the area they use in siting, design, and construction. They can:

- Use data and methods informed by best-available, actionable climate science;
- Build two feet above the 100-year (1%-annual-chance) flood elevation for standard projects, and three feet above for critical buildings like hospitals and evacuation centers; or
- Build to the 500-year (0.2%-annual-chance) flood elevation.

Other elements of the executive order include a directive for agencies to use, where possible, natural systems, ecosystem processes, and nature-based approaches.

The CVWD has designed the Project base on best-available precipitation data for the Project area, specifically the National Oceanic and Atmospheric Administration, National Weather Service's *Precipitation-Frequency Atlas of the United States, Volume 6 Version 2.0: California* (2011), commonly known as NOAA Atlas 14. Hydrologic and hydraulic modeling was performed using:

- Rainfall-Runoff Modeling – Hydrologic Engineering Center – Hydrologic Modeling System (HEC-HMS), Version 3.5, U.S. Army Corps of Engineers, August 2010
- Floodplain Modeling – MIKE 21 Flow Model, DHI Software, 2011
- Detailed Project Hydraulic Modeling – Hydrologic Engineering Center – River Analysis System (HEC-RAS), Version 4.1.0, U.S. Army Corps of Engineers, January 2010

All levee elements of the Project would be constructed such that the top of levee is at least three feet above the projected 100-year flood elevation. All channel elements of the Project would be below the projected 100-year flood elevation, as this is necessary for them to function as intended. The Project levees and channels have been oriented to facilitate natural aeolian wind transport of sand across the Preserve/Refuge. More detail regarding these Project characteristics can be found in Chapter 2, Proposed Project and Alternatives.

6.5.6 Executive Order 11988, Floodplain Management

Executive Order 11988 was signed into law on May 24, 1977, requiring that federal agencies provide leadership and take action to restore and preserve the natural and beneficial values served by floodplains. Before proposing, conducting, supporting, or allowing an action in the floodplain, each federal agency must determine if planned activities would affect the floodplain and evaluate the potential effects of the intended action on the floodplain's functions.

Guidelines for compliance with Executive Order 11988 identify an eight-step process for agencies to use in determining how projects would have potential impacts to or within the floodplain. As described in this guidance, if a proposed action is located within the base floodplain (Step 1), where the "base floodplain" is the area which has a one percent or greater chance of flooding in any given year (also referred to as the "100-year Flood Zone," "Flood Hazard Area," or "0.1 Exceedance Area"), agencies should conduct early public review (Step 2), identify and evaluate practicable alternatives to locating in the base floodplain (Step 3), identify impacts of the proposed action (Step 4), develop measures to minimize the impacts and restore and preserve the floodplain as appropriate (Step 5), reevaluate alternatives (Step 6), and present the findings and a public explanation (Step 7), with the final step being to implement the action (Step 8) (FEMA, 2016).

The proposed Project has been considered with respect to each of these steps, which are detailed below.

- **Step 1: Location within Floodplain.** The Thousand Palms Flood Control Project is located within the 0.1 exceedance area, or the area with a one percent chance of being inundated by stormwater flows during any given year. As a flood control project, it is essential that the Project be in this area.
- **Step 2: Public Review.** The CVWD held a public scoping meeting on December 6, 2016 to inform the public of the Project and to solicit public input regarding the issues to be considered in the EIR/EIS and potential alternatives.
- **Step 3: Alternatives Outside the Floodplain.** The proposed Project is designed specifically to accommodate the 0.1 exceedance level within the floodplain, thereby protecting existing developed areas and proposed development areas from flood-related hazards; there are no alternatives located outside of the floodplain that would accomplish the goals of the Project or fulfill the purpose and need for the Project.
- **Step 4: Impact Analysis.** Potential impacts of the proposed Project are identified and assessed in Section 4.0 of this EIR/EIS.
- **Step 5: Mitigation Measures.** Environmental commitments which are identified in Section 2.2.4 of this EIR/EIS have been incorporated as part of the design of the proposed ~~Project to~~ Project to avoid or minimize potential environmental impacts of the Project. Mitigation measures have been proposed to reduce the impacts of the Project to the extent feasible in Section 4.0 of this EIR/EIS.
- **Step 6: Alternatives Analysis.** Section 4.0 of this EIR/EIS includes analysis of alternatives, including the following: Alternative 1, Proposed Project; Alternative 2, Removal of Reach 2; Alternative 3, Modified Reach 3; and Alternative 4, No Action Alternative. A comparison of these alternatives is provided in Section 2.5 of this EIR/EIS.
- **Step 7: Presentation of Findings.** The findings of the environmental analysis for the Project are presented throughout the EIR/EIS (see Section 4.0).
- **Step 8: Implementation.** Implementation of the proposed Project or an alternative would occur only after the Corps' decision makers have used the Final EIR/EIS with other relevant materials in considering all environmental impacts and issue a Record of Decision (ROD).

Based on the above discussion, it has been determined that the proposed Project would comply with Executive Order 11988. The proposed Project is recommended as the most responsive option to planning objectives and requirements established by Executive Order 11988.

6.5.7 Executive Order 11990, Protection of Wetlands

Under Executive Order 11990, federal agencies shall take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agencies responsibilities. Each agency, to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that there is no practicable alternative to such construction, and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. In making this finding, the head of the agency may consider economic, environmental, and other pertinent factors. Each agency shall also provide opportunity for early public review of any plans or proposals for new construction in wetlands.

A planning-level preliminary wetlands/waters jurisdictional delineation was conducted in ~~November 2013~~ June 2020 (see Appendix D) and potential jurisdictional wetlands/waters were identified. The Project

would affect jurisdictional waters of the State or waters of the U.S. During construction and O&M, these impacts would include placing fill material into jurisdictional waters to construct levees, constructing channels or other flood control structures across jurisdictional drainages, redirecting runoff into the floodway, and by other construction or O&M activities that eliminate or redirects natural runoff. Potential impacts to jurisdictional drainages would be reduced through implementation of a SWPPP, including Best Management Practices (BMPs) in compliance with the conditions set forth in State and federal permits or authorizations (California Fish & Game Code Sections 1600-1616 and CWA Sections 401 and 404). Additionally, Mitigation Measure BIO-6 (Compensate for Permanent Habitat Loss) requires off-site compensation for loss of native habitat, including habitat in downwind and downstream areas and the floodway. This would offset the loss or degradation of habitat from alteration of hydrology on the Project site and on the downstream and downwind areas and the floodway by requiring off-site habitat compensation. Mitigation Measure BIO-19 (Minimize and Mitigate Impacts to Jurisdictional Waters) requires minimization of impacts and no net loss of jurisdictional waters and wetlands. This measure also requires off-site compensation for permanent impacts to jurisdictional waters and wetlands and associated habitat. Implementation of these measures would compensate for the impacts to jurisdictional waters and the effects of hydrology alteration to biological resources on the Project site, downstream, downwind, and on the floodway. As such, the proposed Project would comply with Executive Order 11990.

6.5.8 Executive Order 12898 on Environmental Justice

On February 11, 1994, President Clinton issued an "Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (Executive Order 12898), which was designed to focus federal attention on environmental and human health conditions in minority communities and low-income communities. The Order also intended to promote non-discrimination in Federal Programs substantially affecting human health and the environment. As described in Section 4.12 (Socioeconomics and Environmental Justice), no disproportionate impacts to low-income population would occur, and because the objective of the Project is to protect the Thousand Palms area from flooding hazards, residential or business relocations are not considered to disproportionately impact minority populations. Furthermore, the alignment of the proposed flood control facility has been selected to minimize impacts to existing properties while providing best engineering practices. As such, the proposed Project would occur in compliance with Executive Order 12898.

6.5.9 Executive Order 13045, Protection of Children

Executive Order 13045 requires protection of Children from Environmental Health Risks and Safety Risks. With a reduction of flood hazards, including protection for the Xavier College Preparatory High School, the proposed Project is in compliance with Executive Order 13045.

6.5.10 Executive Order 13112, Invasive Species

Under Executive Order 13112, signed into law on February 3, 1999, federal agencies are to expand and coordinate efforts to prevent the introduction and spread of invasive species and to minimize the economic, ecological, and human health impacts that invasive species may cause.

Under the proposed Project, it is possible that the colonization of non-native, invasive plant species could occur due to increased human presence on foot or equipment. However, the mitigation measures detailed in Section 4.6 (Biological Resources, Impact BIO-17) would be implemented to minimize or avoid potential impacts to biological resources, including as related to invasive species. The proposed Project would meet the intent of Executive Order 13112 and would occur in compliance with all associated requirements.

6.5.11 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the taking or harming of any migratory bird, its eggs, nests, or young without an appropriate Federal permit. Almost all native birds are covered by this Act and any bird listed in wildlife treaties between the United States and several countries, including Great Britain, Mexican States, Japan, and countries once part of the former Soviet Socialist Republics. A "migratory bird" includes the living bird, any parts of the bird, or its nests or eggs. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requires harvesting to be limited to levels that prevent over-utilization. Section 704 of the MBTA states that the Secretary of the Interior is authorized and directed to determine if, and by what means, the take of migratory birds should be allowed and to adopt suitable regulations permitting and governing take. Disturbance of the nest of a migratory bird requires a permit issued by the USFWS pursuant to Title 50 of the CFR.

Under the proposed Project, and with implementation of the environmental commitments, and mitigation measures detailed in Section 4.6 (Biological Resources), there would be no significant adverse impacts to migratory bird breeding or nesting activity.

6.5.12 National Environmental Policy Act (NEPA) Compliance

The NEPA is the nation's primary charter for protection of the environment. It establishes national environmental policy which provides a framework for Federal agencies to minimize environmental damage and requires Federal agencies to evaluate the potential environmental impacts of their proposed actions. In accordance with the provisions of NEPA, reasonable alternatives to the proposed Project have been considered during the planning process and potential environmental effects have been assessed.

This EIR/EIS has been prepared to comply with the requirements of NEPA of 1969 (42 USC 43221, as amended) and the CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508), dated 1 July 1988.

6.5.13 National Historic Preservation Act

The National Historic Preservation Act (NHPA) (Public Law [PL] 89-665; 16 U.S.C. 470-1) establishes preservation as a national policy and directs the federal government to provide leadership in preserving, restoring, and maintaining the nation's cultural and historic environment. Prior to commencement of an undertaking, a federal agency is required to comply with Section 106 of the Act. Guidelines for implementing Section 106 are provided in 36 CFR 800.

The Project would not have any direct, indirect, or cumulative effects on the cultural resources (CA-RIV-11851, NRHP-ineligible) located within the Area of Potential Effects (APE) because it has been determined ineligible for inclusion in the National Register of Historic Places (NRHP). However, if presently unidentified buried cultural resources are discovered during construction, they would be evaluated for their eligibility for inclusion in the NRHP according to the Secretary of Interior's Standards and Guidelines for Evaluation (48 FR 44729-44738; 36 CFR Part 63), and mitigation measures developed for those resources pursuant to 36 CFR 800.13(b-c). ECs C-1 (Unanticipated Discovery), C-2 (Cultural Resources Monitoring), and C-3 (Cultural Resources Worker Environmental Awareness Program) would be implemented to reduce potential adverse impacts to any cultural resources to a less-than-significant level.

Tribal consultation was also completed per Assembly Bill 52. Please see Section 3.7 (Cultural and Tribal Cultural Resources) for additional information.

6.5.14 Noise Control Act of 1972, as amended (42 USC 4901 et seq.)

Noise generated by any activity, which may affect human health or welfare on federal, State, county, local, or private lands must comply with noise limits specified in the Noise Control Act of 1972. Major sources of noise include transportation vehicles and equipment, machinery, appliances, and other products in commerce. The Noise Control Act of 1972 establishes a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. Primary responsibility for control of noise rests with state and local governments, although the USEPA is directed by Congress to coordinate the programs of all Federal agencies relating to noise research and noise control.

The proposed Project would result in temporary construction-related noise emissions; however, CVWD would be required to reduce noise impacts through implementation of environmental commitments and mitigation measures as discussed in Section 4.9 (Noise).

6.5.15 US Fish and Wildlife Coordination Act (16 USC 661)

This Act requires federal agencies to coordinate with the USFWS and local and State agencies when any stream or body of water is proposed to be modified. The intent of this act is to give fish and wildlife conservation equal consideration with other purposes of water resources development projects.

The proposed Project would not involve modification of a body of water therefore, formal coordination and preparation of a Coordination Act Report is not required.

6.6 Effects Not Found to be Significant

CEQA requires that an EIR briefly explain the reasons why certain effects associated with a proposed Project have been determined not to be significant, and thus not discussed in detail in the EIR (CEQA Section 21100[c]). Appendix G of the State CEQA Guidelines (the Initial Study Checklist) contains a list of environmental resources and issues to be evaluated when a Lead Agency conducts preliminary environmental review of a project. In conducting the preliminary review of the proposed Project, the CVWD determined that the proposed Project would have no impacts to the following resources and issues:

- Agriculture and Forestry Resources, and
- Utilities and Service Systems.

Summary descriptions of these resources and issues listed above, and the reasons why the proposed Project would not have significant impacts related to these resources or issues, are provided in the sections below.

6.6.1 Agriculture and Forestry Resources

CEQA Checklist Topics

The proposed Project would not result in potentially significant effects to agriculture and forestry resources. Neither the proposed Project's construction nor operation would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.

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

Explanation

The proposed Project is not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Important, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Department of Conservation (CDOC, 2018). The proposed Project is not located on forest lands, as mapped by the California Department of Forestry and Fire Protection (CAL FIRE, 2017). There are no agricultural uses or farmland within the Project footprint. Therefore, the proposed Project would result in no effects to agriculture and forestry resources.

6.6.2 Utilities and Service Systems

CEQA Checklist Topics

The proposed Project would not result in potentially significant effects to Utilities and Service Systems. Neither the proposed Project's construction nor operation would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board
- 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.
- 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.
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments.
- Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs.
- Comply with federal, State, and local statues and regulations related to solid waste.

Explanation

The proposed Project is a flood control structure designed to remove residential areas from the FEMA Flood Hazard Area. Construction and O&M of the proposed Project would be conducted in compliance with the wastewater treatment requirements of the Colorado River RWQCB (Region 7). The proposed Project would not discharge any wastewater which would require treatment, neither requiring the construction of new water or wastewater treatment facilities nor the expansion of existing facilities.

The proposed Project is a storm water drainage facility and would not require or result in the construction of additional storm water drainage facilities. All potential significant effects associated with the construction of the proposed Project are described in detail in Section 4.0. As discussed in detail in Sections 3.14

and 4.14 (Water Resources), the proposed Project would require approximately 647 acre-feet of water which would be provided by the CVWD via existing entitlements and resources.

All disposal resulting from the proposed Project would be serviced by a local landfill with sufficient capacity to accommodate the solid waste disposal needs, and all applicable federal, State, and local statues and regulations would be complied with.

The proposed Project would require work within the Southern California Edison (SCE) transmission line corridor, and construction of the proposed Project would provide additional flood protection to the SCE substation located south of Reach 2. All work within the transmission line corridor would be coordinated with SCE. Existing SCE processes for working within transmission right-of-ways would be followed to ensure no potential issues related to the existing utility infrastructure would occur.

6.7 Energy Conservation

In 1975, Assembly Bill 1575 was adopted by the State Legislature, creating the California Energy Commission (CEC) and amending Public Resources Code Section 21100(b)(3) to require EIRs to examine the wasteful, inefficient, and unnecessary consumption of energy caused by a project. In response, the State Resources Agency created Appendix F of the State CEQA Guidelines to provide guidance on completing this determination. This section includes a discussion of energy conservation to meet the requirements of State CEQA Guidelines, Appendix F.

The purpose of the proposed Project is to provide flood protection to properties in Thousand Palms that would otherwise require flood insurance under the National Flood Insurance Program. The proposed Project would also achieve compliance with FEMA levee certification requirements for a system to withstand a one percent annual chance flood event. Flood protection projects typically do not involve the use of fossil fuels, such as natural gas, for generation of electricity. The flood control provided by the Project would safeguard the affected homes and provide additional opportunities for reducing energy costs associated with flood-related repair activities.

Implementation of the proposed Project would result in the consumption of energy through fuel needed for construction activities. Fuel would be needed for construction vehicles and equipment. Additionally, construction would require the manufacture of new materials, some of which would not be recyclable at the end of the Project's lifetime, and the energy required for the production of these materials would also result in an irretrievable commitment of natural resources. The anticipated equipment, vehicles, and materials required for construction of the proposed Project are detailed in Chapter 2 (Project Description).

Several local policies exist that require energy efficiency measures be employed for projects within each plan's jurisdiction. These are described within the Riverside County General Plan. The CVWD would improve energy efficiency by complying with these policies. Furthermore, to meet air quality requirements and save fuel for economic gain, it is to the advantage of CVWD to implement energy efficiency and fuel-use reduction measures for all on-site equipment.

Growth in the general Project area is expected to occur with or without implementation of the proposed Project, although the Project would also facilitate this growth to an extent (at least in the immediate area of Reach 4). As such, the proposed Project would not increase energy consumption above what population growth itself would do.

In summary, no increases in inefficiencies or unnecessary energy consumption are expected to occur as a direct or indirect consequence of the proposed Project. Therefore, no mitigation measures are proposed beyond the applicable regulations and requirements that already exist.

7. Response to Comments on the Draft EIR/EIS

The Coachella Valley Water District (CVWD) and the United States Army Corps of Engineers (Corps) regulatory division have prepared this joint Environmental Impact Report (EIR) and Environmental Impact Statement (EIS) (collectively referred to as the "EIR/EIS") to identify and evaluate the potential environmental impacts associated with implementation of the proposed Thousand Palms Flood Control Project ("Project" or "Proposed Action").

In accordance with California Environmental Quality Act (CEQA) (PRC Sections 21000-21178; Title 14 CCR, Section 753, and Chapter 3, Sections 15000-15387) and the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508) the CVWD and the Corps, as the lead agencies, has reviewed all the comments received on the Draft EIR/EIS for the proposed Project during the 45-day public comment period. The comments on the Draft EIR/EIS include issues raised by the public that warrant clarification or correction of certain statements in the Draft EIR/EIS. However, none of the corrections or additions to the Draft EIR/EIS constitute significant new information or substantial changes to the proposed Project as defined by CEQA Guidelines Section 15088.5.

7.1 Introduction

The Draft EIR/EIS was made available for a 45-day review period between April 1, 2022 and May 16, 2022. During this period, five written comment letters were received (see Table 7-1). Comment letters were received from the U.S. Environmental Protection Agency (EPA), the California Department of Fish and Wildlife (CDFW), Imperial Irrigation District (IID), The Coachella Valley Association of Governments (CVAG), the Berger Foundation (Berger), and the Xavier College Preparatory High School (Xavier).

Each of the comment letters have been separated into individual numbered comments. This results in a numbering system whereby the first comment in the letter is depicted as EPA-1, and so on. The complete copy of the comment letters is included in Appendix H of this Final EIR/EIS. During the public scoping period for the EIR/EIS individual comments were identified in each section and addressed in their respective sections (see Appendix A, Public Scoping).

Table 7-1. Summary of Comment Letters

Comment ID	Name of Commenter	Date Received	Number of Comments Per Letter
Federal Agencies			
EPA	Jean Prijatel, Manager, Environmental Review Branch, Environmental Protection Agency	May 12, 2022	EPA-1 through EPA-7
State and Local Agencies			
CVCC	Peter Satin, Regional Planner, Coachella Valley Association of Governments and Coachella Valley Conservation Commission	May 4, 2022	CVCC-1 through CVCC-5
CDFW	Scott Wilson, Environmental Program Manager, California Department of Fish and Wildlife	May 16, 2022	CDFW-1 through CDFW-4
IID	Donald Vargas, Compliance Administrator II, Imperial Irrigation District	May 16, 2022	IID-1 through IID-8
Private Groups			
XCPHS	Chris Alling, Present/Principal, Xavier College Preparatory High School	May 10, 2022	XCPHS-1 and XCPHS-2
BF	Tony Locacciato, AICP, Meridian Consultants on behalf of the Berger Foundation	May 16, 2022	BF-1 through BF-12

Environmental Protection Agency

EPA-1: This comment acknowledges the proposed mitigation strategy as described in the Draft EIR/EIS and supports the targeted enhancement activities for the floodway. The EPA requests "the opportunity to review the draft mitigation plan prior to the publication of the Final EIS".

Response to Comment. The Conceptual Compensatory Mitigation Plan (Plan) is included as an attachment to the 404b1 analysis (see Appendix C.4 of the Draft EIR/EIS) and will be included in the Final EIR/EIS. The mitigation plan, which will be based on the conceptual plan provided in the EIR/EIS, will not be available for transmittal to EPA prior to issuance of the Final EIR/EIS. Because the mitigation plan will be used as the basis for a special condition to the 404 permit, the plan is finalized after publication of the Final EIR/EIS and before preparation of the Record of Decision.

EPA-2: This comment addresses the Noise Impact Assessment (Section 4.9) and the Noise Calculations from Appendix F. It identifies that the Noise Impact Assessment does not describe the calculations for decibel levels experienced by local residents and does not summarize the calculations made in Appendix F. In addition, Section 4.9 concludes that the community would experience temporary increases in noise whereas Appendix F concludes that the Project would be exempt from any construction or operational noise performance standards established by the County General Plan because CVWD is a government agency conducting work on public property. Finally, this comment recommends the following: 1) analyzing and summarizing the data calculated from Appendix F in the DEIR/DEIS, 2) identify how long community members will be exposed to increased noise levels, and 3) to consider additional noise mitigation measures such as providing information to impacted residents to protect their hearing, promptly responding to noise complaints, monitoring noise and construction activity to determine the source of any work that results in noise complaints, and allowing the contractor authority to adjust the noise-generating activity if needed.

Response to Comment. The Draft EIR/EIS has been revised to include the following language analyzing and disclosing noise impacts to the public.

On-Site Construction Noise Sources. Equipment used during construction of the proposed Project would generate temporary noise. Table 4.9-1 presents typical noise levels generated by a variety of equipment types likely utilized during Project construction. These maximum construction-related noise levels would attenuate at an average rate of 6 dBA every doubling of distance (for point sources) depending on adjacent surfaces and noise spreading (FTA, 2006).

Table 4.9-1. Noise Levels from Construction Equipment, Actual Measured

Construction Equipment	Noise Level (Lmax dBA at 50 feet)
Backhoe	78
Compacter (ground)	83
Concrete Batch Plant	83
Concrete Mixer Truck	79
Concrete Pump Truck	81
Dozer	82
Dump Truck	76
Excavator	81
Flatbed Truck	84
Front End Loader	79
Grader	85
Paver	77

Table 4.9-1. Noise Levels from Construction Equipment, Actual Measured	
Construction Equipment	**Noise Level (Lmax dBA at 50 feet)**
Pickup Truck	75
Scraper	84
Vacuum Street Sweeper	82

Source: FHWA, 2006

These maximum noise levels would not be continuous throughout the entire workday, but instead periodic and short-term. Furthermore, construction noise would move as activities progress along Reaches 1 through 4 over a two-year period and would be spread out across the alignment for each of the various tasks denoted in Table 2-2 (Proposed Project Construction Schedule) Section 2.2.2 (Construction). This table provides an overview of the expected timeframes for various construction activities in each Reach. Review of the expected construction equipment noise levels presented in Table 4.9-1 indicates that the loudest expected equipment generally emits Lmax noise up to 85 dBA at 50 feet (grader). Noise calculations were performed based on the noisiest activities within each task identified in Table 2-3, as shown in Table 4.9-2 (see Appendix F).

Table 4.9-2. Expected Maximum Construction Equipment Noise Levels, Hourly Leq		
Task	**Noise Level @ 50 feet**	**Noise Level @ Sensitive Receptors**
Reach 1 Levee – Excavate Soil Cement Trench	88.4 dBA	73.6 dBA @ 275 feet
Reach 2 Levee – Excavate Soil Cement Trench	88.7 dBA	68.7 dBA @ 500 feet
Reach 3 – Excavate Channel	92.1 dBA	75.8 dBA @ 330 feet
Reach 4 – Excavate Channel	92.4 dBA	76.8 dBA @300 feet
Reaches 2, 3, 4 – Soil Cement Lining	93.4 dBA	77.8 dBA @ 300 feet
Avenue 38 - Paving	87.1 dBA	71.6 dBA @ 300 feet
Sun City Collection Basin Excavation	86.8 dBA	86.8 dBA @ 50 feet

Source: Appendix F. Assumes activities are in a discrete area (i.e., not mobile noise sources).

As discussed in Section 3.9.2, the County's General Plan contains policies to ensure construction noise is controlled and minimized, to the extent feasible. Construction would have to occur in relatively close proximity to sensitive receptors, including residences of the Del Webb/Sun City development, the Xavier Preparatory College High School, as well as residences along Reaches 1-4. As such, the community would experience temporary increases in noise from construction. Mitigation Measure N-1 is proposed to establish a process to receive, assess, and address public nuisance complaints regarding construction noise and ensure ambient noise levels are reduced to the extent feasible. Mitigation Measure N-2 would reduce impacts to Xavier College Preparatory High School by scheduling construction activities along Reach 3 in coordination with the school, such as during the summer if possible, when classroom educational activities are at a minimum. With the implementation of these mitigation measures and environmental commitments to reduce and control temporary construction noise, construction of the Project is considered consistent with the General Plan.

This information provides additional data on the type and duration of noise that would occur during the construction of the project. Information has also been provided clarifying that noise levels would occur at different locations and time along the four reaches during the expected two-year construction period.

The EPA also requested that additional noise mitigation be proposed that would identify a noise disturbance coordinator, provide information to impacted residents on efforts they can take to protect their hearing during construction, and promptly responding to any noise complaint calls and monitoring noise and construction activity. The CVWD and USACE consider Mitigation Measure N-1 and N-2 of the Draft

EIR/EIS to fully meet the expectations of the EPA. Mitigation Measure N-1 includes informing property owners of impending construction and provides a contact number for noise complaints. In addition, all complaints must be returned within 24 hours and the measure requires that remedial actions be taken to minimize construction noise to the extent practicable. Mitigation Measure N-2 currently requires the CVWD and USACE to coordinate directly with the Xavier High School in order to minimize disturbance to classroom activities.

EPA-3: This comment requests that all mitigation measures for tribal impacts discussed in the DEIR/DEIS to be committed to and to include any other tribal mitigation opportunities developed during Section 106 consultations. For the Programmatic Agreement between the State Historic Preservation Officer and the Corps, all entities with jurisdiction, authority, or responsibility to implement these measures should be identified.

Response to Comment. The Mitigation Measures identified in the Draft EIR/EIS and Final EIR/EIS will be implemented as part of the Mitigation Monitoring and Reporting Program. The measures will be enforced as required by CEQA and will be identified in the Record of Decision. The CVWD and the USACE will implement all Cultural and Tribal mitigation requirements. Specifically, Mitigation Measure Cult-1 (Tribal Cultural Resource Monitoring) requires one or more authorized Tribal monitors be present during construction. USACE has made an effect determination of "no effect to historic properties", thus a programmatic agreement or memorandum of agreement is not needed.

EPA-4: This comment identifies that the proposed Project is portrayed within the DEIR/EIS as rendering flood insurance unnecessary (pages 1-12 and 1-13). The EPA recommends for the Project proponents to recommend to occupants in structures behind the levee to still obtain flood insurance, consistent with FEMA and Corps guidance.

Response to Comment. The Draft EIR/EIS does not suggest that flood insurance is not required once the levee has been constructed. Construction of the project is intended to reduce the risk of flooding from storm flows emanating from the mountains upstream of the community of Thousand Palms. As identified in the Draft EIR/EIS the construction of the project would reduce the amount of property located within the FEMA designated Flood Hazard Area.

In order to provide greater information regarding flood hazards Section 1.3.2 (NEPA Purpose and Need) of the Draft EIR/EIS has been revised to read "The community of Thousand Palms is without flood protection and is therefore subject to flooding associated with storms of varying sizes. As recently as September 8, 2014, flash flooding associated with rainfall and runoff from Hurricane Norbert resulted in floodwaters as deep as five feet in some areas, including roadways in Thousand Palms (see Photo 1, above). Multiple emergency rescue incidents were required in response to the flooding. Total cost of the clean-up and repair effort has not been quantified, but is on the order of millions (CBS, 2014). The proposed Project is designed to <u>increase the flood protection for</u> ~~protect~~ this area from flooding hazards associated with large storm events such as the one that occurred in 2014. <u>Although the risk of flooding has been reduced, homeowners are recommended to maintain flood insurance if living in this area.</u>

<u>In addition, the language of Section 4.14 (Water Resources), Impact W 7: (Construction and operation of the Project would remove downstream areas from the FEMA flood hazard zone) has been clarified to read, "</u>Construction of the proposed Project would add roughly six miles of levees for the purpose of protecting residents of the Thousand Palms area from seasonal and periodic flooding. The proposed Project would purposefully redirect flood flows away from inhabited areas, ~~removing~~ <u>reducing</u> people and structures from risk of damage due to flooding. The proposed Project would not involve the construction or installation of holding ponds, dams, or any other water storage structures which could potentially rupture and cause flooding. The overall purpose for the proposed Project is to provide flood hazard protection to the areas which are currently located within the FEMA-designated flood hazard zone and floodplain, thus

~~removing~~ reducing the areas at risk from the flood hazard area. These areas are currently at risk of flooding due to the nature of the stormwater runoff from the nearby mountains and the coalescing alluvial fans."

EPA-5: This comment requests clarification within the DEIR/EIS with regards to how channeling flood flows to an area downstream of the refuge would impact or alter environmental processes within the adjacent wildlife refuge.

Response to Comment. The Draft EIR/EIS analyzes potential direct and indirect impacts from the implementation of the proposed project and alternatives to the Coachella National Wildlife Refuge (Refuge). Section 4.5 (Sand Migration) provides a thorough analysis of how the channelization of existing storm flows result in beneficial impacts to the Refuge by trapping fine grain sands along the face of the levees and allowing that material to be available for aeolian transport to the Refuge. Section 4.5.2 of the Draft EIR/EIS analyzes potential Project impacts to sand migration, including effects on sand source areas, fluvial transport, sand supply to the wind corridor, aeolian transport, sand sorting processes, sand deposition, and effects of sand stabilization. Section 3.5 (Sand Migration) of the Draft EIR/EIS describes sand transport systems in the Project area and summarizes the results of Project-specific sand studies, including the Lancaster (2015) report. Section 4.5.2 of the EIR/EIS analyzes potential Project impacts to sand migration and proposes mitigation to avoid, minimize, and compensate for impacts.

Potential impacts to the Refuge are further described in Section 4.5.2.1 (Direct and Indirect Effects Analysis) Criteria SM1 (Have a measurable effect on the quantity or quality of sand migration onto the Coachella Valley Preserve). The Draft EIR/EIS indicated "Analyzing the historic rate of sand dune reduction from aerial photographs (1939-1992), and assuming this rate were to continue, SLA (1997) estimated that the existing sand dunes would migrate out of the Preserve within 60 years, and the sandy plains on the alluvial fan would diminish within 130 years. This estimate was irrespective of future development. However, there is no direct evidence that this trend will necessarily continue. It is probable that if similar data were available over a longer time span, continuing cycles of dune depletion and expansion would be evident. Rare, extreme wind events (possibly combined with flood flows) may activate formation and migration of new dune systems (USACE, 2000). Borings taken on the wind corridor show deep deposits of blowsand-size sediment that could become available for transport to the Preserve if exposed by future flooding process such as channel cutting. Limiting factors include armoring from larger grained sediment and cobbles, barriers in the surrounding landscape, and stabilization of upwind sand source areas.

In addition, Lancaster (2015) found that the estimates of sediment transport were substantially less than previous studies (see Appendix C.1) but the aeolian sand transport system is currently in a state of sediment supply limitation. Therefore, any additional sand supply trapped by the levees will be transported downwind to the dunes. The sand captured by the levees and transported to downstream areas as a result of the proposed flood control structures would increase the availability of fine grain sands to the refuge and prevent that material from being washed into developed areas outside the wind corridor. "In addition…" Construction of Reach 1 would redirect water from CP 8 (Edom Hills), 9, 10, and 13 (Gravel Pit Wash) toward the southeast, diverting flow towards Ramon Road and the wind corridor. From there, the flow would be further diverted to the southeast by the Reach 2 and Reach 3 levees, with some localized ponding. As compared to current conditions, this diversion of flow and resulting fluvial transport has the potential to increase the supply of sand moving into the wind corridor (Lancaster, 2015). In summary, the analysis of alluvial and wind sediment transport data indicates that the proposed flood control structures will have a positive effect on sand supply to the dunes and sand sheets that occur in the Preserve Refuge. The Project will increase sand supply by 9 – 14 percent, mainly as a result of the diversion of water and sediment to the east and southeast to the primary sand deposition area by the levee and channel of Reach 1 (Lancaster, 2015)."

Additional information regarding potential impacts to sensitive habitats, dune communities, plants and wildlife, and wildlife movement are described in detail in Section 4.05 (Biological Resources).

EPA-6: This comment requests the Project proponents to seek, include, or consult with identified vulnerable communities (due to variable social, economic, historical, or political factors) on all emergency preparedness planning and emergency management, including: preparedness, response, recovery, and mitigation. In addition, the EPA requests the inclusion of additional resiliency measures, adaptive management proposals or mitigation that could result from a collaborative management forum.

Response to Comment. The proposed Project would construct levees and channels for the purposes of flood control, which would improve existing flooding conditions in the Thousand Palms area. The EPA request for additional outreach, response, preparedness, and other mitigation related to disaster preparedness is outside the purpose and need of this EIR/EIS. The CVWD has developed an Emergency Response Plan (ERP) that includes provisions for flood events (CVWD 2019). Because CVWD has flood control responsibilities, the plan includes several provisions related to coordination and outreach with Local Emergency Service agencies, incident command, Flood Alert Notifications involving a network of real time weather stations, and media flood advisory outreach statements. CVWD employs a full-time emergency response coordinator who manages and updates the ERP regularly. Adoptions of the CVWD ERP is done in a public setting, subject to public comment and review.

EPA-7: This comment acknowledges the planned removal of vegetation from the levees on page 4.6-79 and identifies that vegetation of levees can provide habitat for species in the area. The EPA requests that additional information regarding how vegetation removal activities would occur during the O&M phase including responsible parties and strategic areas where vegetation removal may be unnecessary.

Response to Comment. The current project identifies that the levees would be kept free from vegetation. As described in Section 2.2.1 (Project Elements) of the Draft EIR/EIS, the top, upstream/northern sides and the toe of the levees would be covered with soil cement, while the southern/downstream side would be comprised of earthen materials (soil). Soil cement is a compacted high-density mix of pulverized native rocks and soils bonded with cement and water that is highly resistant to erosion while maintaining an earthen color. The channels would also be fully lined with soil cement to protect the structures during large flow events.

The use of soil cement will prevent the recruitment of vegetation on the faces of levees and in the channels. CVWD proposes to maintain the back or downstream side of the levees vegetation free to ensure the integrity of the structure and to meet USACE Corp levee requirements. It is likely that vegetation would be periodically removed manually with weed whips or other handheld devices. While it is acknowledged that there are some beneficial effects from the presence of vegetation, the purpose of the project is to reduce flood risk to the community of Thousand Palms. Allowing large vegetation to occur on the downslope portions of the levee may pose a risk to the stability of the structure and would be inconsistent with existing standards required by the USACE.

Coachella Valley Conservation Commission

CVCC-1: This comment requests for clarifications within Mitigation Measure BIO-6: Compensation for Habitat Loss. It indicates the preference for CVCC to receive fee title directly from CVWD for any lands intended to fulfill the 550-acre conservation requirement. In addition, further clarification is requests as to whether the Compensation Land Criteria and Habitat Compensation Plan applies to the 550 acres required under the CVMSHCP.

Response to Comment. As required in the Draft EIR/EIS CVWD is committed to acquiring 550 acres of compensatory mitigation as described in the CVMSHCP. Mitigation Measure BIO-6 has been developed to provide flexibility into the methods implemented to acquire or purchase mitigation lands. CVWD has coordinated closely with the CVCC and fully intends to continue this dialogue to ensure the mitigation lands are acquired. In addition, to clarify that Mitigation Measure BIO-6 (Compensate for habitat Loss) the measure has been revised to clarify that implementation of this measure applies to private and federal lands. Changes to the Mitigation Measure BIO-6 are described below.

MM BIO-6 Compensate for Habitat Loss. The CVWD will acquire and protect approximately 550 acres of floodway lands as habitat for special-status plants and wildlife, located within the Thousand Palms Conservation Area. The floodway lands will be transferred to the CVCC for conservation and management under the CVMSHCP in support of the goals and objectives of the CVMSHCP. CVWD will ensure acquisition and protection of approximately 32 acres of aeolian sand habitat that contribute to the recovery of Coachella Valley fringe-toed lizard and suitable for other aeolian sand dependent species. Habitat compensation will be accomplished by acquisition of mitigation land or conservation easements or by providing funding for specific land acquisition, endowment, restoration, and management actions.

CVWD shall be responsible for the acquisition, initial protection and habitat improvement, of compensation lands. Alternatively, CVWD may provide funding to CVCC for the acquisition of mitigation lands. The compensation lands will be placed under conservation management to be funded through the terms described herein. The requirements of this mitigation measure shall be fully accomplished within five years from the completion of Project construction.

Compensation Land Selection Criteria. Criteria for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of compensation lands for impacts to biological resources shall include all of the following:

- Compensation lands shall provide habitat value that is equal to or better than the quality and function of the habitat impacted by the Project, taking into consideration soils, vegetation, topography, human-related disturbance, wildlife movement opportunity, proximity to other protected lands, management feasibility, sand source and sand transport, and other habitat values;
- To the extent that proposed compensation habitat may have been degraded by previous uses or activities, the site quality and nature of degradation must support the expectation that it will regenerate naturally when disturbances are removed;
- Be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
- Not have a history of intensive recreational use or other disturbance that might cause future erosion or other habitat damage, and make habitat recovery and restoration infeasible;
- Invasive species that might jeopardize habitat recovery and restoration, either on or immediately adjacent to the parcels under consideration, must not occur at higher density than found on the lands affected directly and indirectly by the proposed Project;
- Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat;

- Must provide wildlife movement value equal to that on the Project site, based on topography, presence and nature of movement barriers or crossing points, location in relationship to other habitat areas, management feasibility, and other habitat values;
- Have water and mineral rights included as part of the acquisition, unless CDFW and USFWS agree in writing to the acceptability of land without these rights.

Review and Approval of Compensation Lands Prior to Acquisition. Prior to the initiation of construction, CVWD will prepare and implement a Habitat Compensation Plan in coordination with USFWS and CDFW, identifying the proposed compensation lands and detailing all proposed improvement, management, protection activities. This Plan shall discuss the suitability of the proposed parcel(s) as compensation lands in relation to the selection criteria listed above.

CVMSCHP/NCCP: The Project is covered under the CVMSHCP/NCCP. This measure is ~~only~~ relevant to the portions of the project on private and federal lands.

CVCC-2: This comment identifies a reference error to the Consistency Analysis within Appendix C.5.

Response to Comment. Thank you for the comment. The Final EIR/EIS has been revised to reference the correct appendix. Changes to the Final EIR/EIS were made to Section 3.6.1.5 (General Wildlife).

"Wildlife surveys covered all proposed temporary and permanent disturbance areas within the Study Area. Surveys consisted of walking evenly spaced transects throughout all proposed impact areas with particular attention given to areas of suitable habitat for special-status animals (i.e., desert dunes and sandy washes). All wildlife species observed or detected during the surveys are listed in Appendix C.~~5~~ 2, Attachment C."

CVCC-3: This comment clarifies that the project is covered, *de facto*, by its inclusion in table 7-6, item (t), and as further supported by the Consistency Analysis (page 3.6-10). This is more accurate than the current statement that the Project is a Covered Activity by dint of development permitted or approved by Local Permittees.

Response to Comment. Thank you for the clarification describing the Project as a Covered Activity under the CVMSHCP. Section 3.6.1 (Environmental Baseline) has been changed to clarify this point. The textual change includes, "The CVMSHCP/NCCP identifies twenty-one distinct conservation areas in the Coachella Valley also referred to as reserve management units (RMU): The Project site is partially within the Thousand Palms Conservation Area. According to the CVMSHCP/NCCP, the Project is identified as a Covered Activity as they were planned in the 2000 EIS/EIR, would define the southern edge of this Conservation Area."

CVCC-4: This comment identifies an incorrect date of issue for the Consistency analysis on page 1-12 of the DEIR/EIS, and requests changing the date from July 2021 to August 2021.

Response to Comment. The Draft EIR/EIS has been revised to reflect the date change from July to August 2021 in Section 1.3.1 CEQA Project Objectives, point number 3 to read,

" 3. CVMSHCP Boundary Modification. Reaches1, 2, and 3 of the proposed Project will define a portion of the western boundary of the Thousand Palms Conservation Area (including the Coachella Valley Preserve). Reach 4 will follow the current southern boundary of the Preserve/Conservation Area. The 2008 BO issued by the USFWS for the CVMSHCP describes that the Preserve boundary may be defined by the Project alignment, which represents a "minor" adjustment from the Conservation Area boundary under consideration at the time of issuance of the 2008 BO. In ~~July~~ August 2021, the Coachella Valley Conservation Commission determined that the final alignment of the proposed Project is consistent with the CVMSHCP Conservation Objectives for the Thousand Palms Conservation Area, and it constitutes a Covered Project

under Section 7.3.1. The final alignment of the proposed Project will result in only a minor adjustment of the existing Conservation Area boundary (approximately a 1.16 percent difference), and the Project will define the new western boundary of the Conservation Area (Appendix C.5)."

CVCC-5: This comment requests changing several statements about collaboration with CVAG to CVCC within the DEIR/EIS, notably on pages 2-2, 2-51, 3.5-5, 3.6-40, 3.6-52, 4.6-2, and elsewhere.

Response to Comment. The Draft EIR/EIS has been revised to reflect the requested change from CVAG to CVCC throughout the Draft EIR/EIS. References to CVAG were changed in the following sections. Sections 1 (Introduction), Section 2 (Purpose and Need), Section 3.5 (Sand Migration), Section 3.6 (Biological Resources), Section 3. 8 (Land Use and Recreation), Section 4. 6 (Biological Resources), Section 6 (Other Federal Requirements and CEQA Considerations), and Section 8 (References).

California Department of Fish and Wildlife

CDFW-1: This comment notes that Table 3.6-1 in the DEIR/EIS does not include analysis of proposed impacts or a discussion of compensatory mitigation to lands owned and/or managed by CDFW, Bureau of Land Management, Center for Natural Lands Management, or Coachella Mountains Conservancy. In addition, CDFW requests that MM BIO-6 be revised to indicate that the Habitat Compensation Plan, to be submitted for USFWS and CDFW review, will include proposed compensatory mitigation for impacts to lands owned and/or managed by CDFW. The revisions requested for MM BIO-6 are below (requested additions are in **bold** and removals are ~~strikethrough~~):

"MM BIO-6 Compensate for Habitat Loss

> The CVWD will acquire and protect approximately 550 acres of floodway lands as habitat for special-status plants and wildlife, located with the Thousand Palms Conservation Area. The floodway lands will be transferred to the CVCC for conservation and management under the CVMSHCP in support of the goals and objectives of the CVMSHCP. CVWD will ensure acquisition and protection of approximately 32 acres of aeolian sand habitat that contribute to the recovery of Coachella Valley fringe-toed lizard and suitable for other aeolian sand dependent species. **Additionally, CVWD will ensure any impacts to CDFW-owned or -managed lands will be mitigated through the acquisition and protection of additional lands in coordination with CDFW and following the Compensation Land Selection Criteria outlined below.** Habitat compensation will be accomplished by acquisition of mitigation land or conservation easements or by providing funding for specific land acquisition, endowment, restoration, and management actions.
>
> […]
>
> CVMSHCP/NCCP: The Project is a **C**~~c~~overed **A**~~a~~ctivity under the CVMSHCP/NCCP. ~~This measure is only relevant to the portion of the project on federal lands.~~ "

Response to Comment. Section 3.6.1 (Environmental Baseline) of the Draft EIR/EIS discloses impacts to lands owned and managed by the entities described in the comment. Page 3.6-1 of this section discloses "There are several designated conservation lands in the Project vicinity (see Figure 3.6-1, Land Ownership Proposed Project Alignment): the state-owned Coachella Valley Ecological Reserve; the US Fish and Wildlife Service (USFWS) owned Coachella Valley National Wildlife Refuge (CVNWR); and the Coachella Valley Preserve which encompasses Bureau of Land Management (BLM) Area of Critical Environmental Concern (ACEC) land as well as privately owned conservation lands. The CVMSHCP defines Private Conservation Land as "Land owned by a non-governmental entity committed to Conservation in perpetuity through deed restriction, conservation easement, or other binding agreement satisfactory to CDFG [CDFW] and USFWS" (page xxxvi; CVCC, 2007). To clarify this language in the Final EIR/EIS, the text of Section 4.6.2.1 (Proposed Project (Alternative 1)) page 4.6-10 has been revised as follows.

CVMSHCP Consistency

On private lands the Coachella Valley milk-vetch is a covered species under the CVMSHCP. The CVMSHCP defines Private Conservation Land as "Land owned by a non-governmental entity committed to Conservation in perpetuity through deed restriction, conservation easement, or other binding agreement satisfactory to CDFG [CDFW] and USFWS" (page xxxvi; CVCC, 2007).

Together these conservation lands help to protect a large dune system and its biological resources. In addition to these designated conservation lands, Figure 3.6-1 also depicts the 550-acre floodway mitigation lands and the parcels that would be acquired and deeded to USFWS to offset a portion of the impacts to the CVNWR (see Section 4.6, Biological Resources, and Appendix C.3, Biological Assessment, for further discussion on acquisition lands)." In addition, Table 3.6 1 (Proposed Project Disturbance to Designated Preserve Lands, Conservation Area, and Critical Habitat) discloses the temporary and permanent impacts that would occur to each entity.

As described in the Draft EIR/EIS, the CVWD is committed to the acquisition and preservation of the 550-acre floodway. CVWD defines private lands consistent with the CVMSHCP and would mitigate impacts to lands that meet this definition including lands owned or managed by the CDFW. This language has also been included in the CVWD Mitigation Monitoring and Reporting Program which will be adopted as part of the proposed Project. Impacts to parcels that have been acquired during the CEQA/NEPA process will be off-set by the CVWD. CVWD recognizes that some parcel conservation has taken place since the execution of the CVMSHCP and CVWD will ensure a compensatory acquisition process occurs so that CVWD funds a total of 550 acres of conservation. Throughout the multi-year CEQA/NEPA process CVCC staff has been regularly consulted on the matter and discussed the option of CVWD providing funding to compensate the CVCC for future acquisition in the conservation area, if lands in the 550-acre floodway are already conserved. The 550-acre floodway parcel ownership will be re-assessed as the Project approaches implementation and lands will be acquired at an equal proportion to off-set impacts to acquired parcels.

CDFW-2: This comment identifies that BIO-19, referring to the Lake and Streambed Alteration Program process, states that this measure is required to minimize and mitigate impacts to jurisdictional waters only on private and federal lands. CDFW clarifies that fish and wildlife resources subject to Fish and Game Code section 1600 et seq., include the bed, channel, and bank of any river, stream, or lake. CDFW requires a revision to BIO-19 that indicates the Project will submit a notification of streambed alteration regarding impacts to fish and wildlife resources subject to Fish and Game Code section 1600 et seq., as shown below (requested additions are in **bold** and removals are ~~strikethrough~~):

"MM BIO-19 Minimize and Mitigate Impacts to Jurisdictional Water

> […]
>
> **The Project will submit a notification to streambed alteration regarding impacts to fish and wildlife resources subject to Fish and Game Code section 1600 et seq.** ~~CVMSHCP/NCCP: This measure is required on private and federal lands~~."

Response to Comment. Mitigation Measure BIO-19 describes compensatory mitigation requirements consistent with CEQA. As a matter of law, CVWD will obtain all necessary permits from the CDFW, USACE, and the Regional Water Quality Control Board. The reference to private and federal lands refers to areas covered under the CVMSHCP, for consistency across mitigation measures. For the purposes of this EIR/EIS private lands refer to all areas of the project that do not occur on federal lands. Private lands would include lands owned by the State. CVWD recognizes the CDFW 1600 jurisdiction may take place on both private and federal lands. Based on this information the text of the mitigation measures has not been revised.

CDFW-3: This comment requests adding additional language to MM BIO-17 and MM BIO-15 (referring to nesting bird protections) that support Fish and Game Code sections 3503 and 3503.5. CDFW requests the following changes to MM BIO-14 and MM BIO-15 (requested additions are in **bold** and removals are ~~strikethrough~~):

"MM BIO-14 Conduct Pre-Construction Surveys and Monitoring for Breeding Birds

[…]

CVMSHCP/NCCP: The Project is a **C**~~c~~overed **A**~~a~~ctivity under the CVMSHCP/NCCP. ~~However,~~ ~~t~~**T**o ensure the protection of **nests or eggs**~~ing birds~~, this measure is required ~~for private and federal lands~~ **over the entire Project area.**

MM BIO-15 Conduct Surveys and Avoidance for Burrowing Owl

[…]

CVMSHCP/NCCP: Burrowing owl is considered a ~~c~~**C**overed ~~s~~**S**pecies under the CVMSHCP/NCCP. ~~However,~~ ~~t~~**T**o ensure the protection of **nests or eggs**~~ing birds~~, this measure is required ~~for private and federal lands~~ **over the entire Project area.**"

Response to Comment. Mitigation Measure BIO-14 and BIO-15 includes specific language regarding the protection of nesting birds, their nests, and eggs. As required in BIO-14 (Conduct Pre-construction Surveys and Monitoring for Breeding Birds) CVWD shall conduct pre-construction surveys for breeding birds in all areas subject to project disturbance. If detected, nest sites would be avoided and protected non-disturbance buffers would be implemented. Monitoring would also be conducted to ensure the protection of nesting birds consistent with Fish and Game Code sections 3503 and 3503.5. For the purposes of this EIR/EIS private lands refer to all areas of the project that do not occur on federal lands. Private lands would include lands owned by the State. Based on this information the text of the mitigation measures has not been revised.

CDFW-4: This comment recommends the following revisions all mitigation measures (MM BIO-1 to 5, MM BIO-7, MM BIO-8, MM BIO-11, MM BIO-13, MM BIO-17) regarding avoiding and minimizing impacts to CVMSHCP Covered Species to clarify that they apply to all Project areas (requested additions are in **bold** and removals are ~~strikethrough~~):

"MM BIO-1 Conduct Pre-Construction Biological Resource Surveys

This mitigation measure shall apply to the pre-construction and construction phases of the Project ~~on private and federal lands~~ **over the entire Project area.**

[…]

CVMSHCP/NCCP: This measure is required for **all lands within or adjacent to the** ~~private and federal lands~~ Project area.

MM BIO-2 Conduct Biological Monitoring and Reporting

This measure supersedes EC B-2 (Biological Monitoring and Relocation of Sensitive Species) as described in the EIR/EIS for the proposed Project. This measure applies to the construction phase of the Project ~~on private and federal lands~~ **on all lands within or adjacent to the Project area.**

[…]

CVMSHCP/NCCP: The Project is a **C**~~c~~overed **A**~~a~~ctivity under the CVMSHCP/NCCP. ~~However,~~ ~~t~~**T**o ensure the protection of **Covered Species and** non-covered sensitive species, this measure is required ~~for private and federal lands~~ **on all lands within or adjacent to the Project area.**

MM BIO-3 Prepare and Implement a Worker Environmental Awareness Project

This mitigation measure shall apply to the construction and O&M phase of the Project ~~on private and federal lands~~ **over the entire Project area.**

[…]

CVMSHCP/NCCP: The Project is a **C**~~c~~overed **A**~~a~~ctivity under the CVMSHCP/NCCP. ~~However,~~ ~~t~~**T**o ensure the protection of **Covered Species and** non-covered sensitive species, this measure is required ~~for private and federal lands~~ **over the entire Project area.**

MM BIO-4 Minimize Native Vegetation and Habitat Loss

This mitigation measure shall apply to the construction phase of the Project ~~on private and federal lands~~ **over the entire Project area.**

[…]

CVMSHCP/NCCP: The Project is a **C**~~c~~overed **A**~~a~~ctivity under the CVMSHCP/NCCP. ~~However,~~ ~~t~~**T**o ensure the protection of **Covered Species and** non-covered sensitive species, this measure is required ~~for private and federal lands~~ **over the entire Project area.**

MM BIO-5 Utilize Native Species for Revegetation for Temporary Disturbance Areas

This mitigation measure shall apply to the construction and O&M phases of the Project ~~on private and federal lands~~ **over the entire Project area.**

[…]

CVMSHCP/NCCP: The Project is a **C**~~c~~overed **A**~~a~~ctivity under the CVMSHCP/NCCP. ~~However,~~ ~~t~~**T**o ensure the protection of **Covered Species and** non-covered sensitive species, this measure is required ~~for private and federal lands~~ **over the entire Project area.**

MM BIO-7 Prepare and Implement an Operations and Maintenance Plan

This mitigation measure shall apply to the construction and O&M phase of the Project ~~on private and federal lands~~ **over the entire Project area.**

[…]

CVMSHCP/NCCP: The Project is a **C**~~c~~overed **A**~~a~~ctivity under the CVMSHCP/NCCP. ~~However,~~ ~~t~~**T**o ensure the protection of **Covered Species and** non-covered sensitive species, this measure is required ~~for private and federal lands~~ **over the entire Project area.** ~~In addition, any O&M activities that occur within the indirect permanently impacted Coachella Valley Wildlife Refuge lands (see Sections 1 and 1.4) will be covered under the CVMSHCP/NCCP.~~

MM BIO-8 Prepare and Implement an Integrated Weed Management Plan

This mitigation measure shall apply to the construction and O&M phase of the Project ~~on private and federal lands~~ **over the entire Project area** and will augment EC B-1 (Weed Abatement Program).

[…]

CVMSHCP/NCCP: The Project is a **C**~~c~~overed **A**~~a~~ctivity under the CVMSHCP/NCCP. This measure is required ~~for private and federal lands~~ **over the entire Project area.**

MM BIO-10 Ensure Wildlife Impact Avoidance and Minimization and Prepare a Wildlife Protection and Relocation Plan

> CVWD shall undertake the following measures during the construction and O&M phases of the Project ~~on private and federal lands~~ **over the entire Project area** to avoid or minimize impacts to wildlife resources.
>
> […]
>
> CVMSHCP/NCCP: The Project is a **C**~~c~~overed **A**~~a~~ctivity under the CVMSHCP/NCCP. ~~However,~~ ~~t~~**T**o ensure the protection of **Covered Species and** non-covered sensitive species, this measure is required ~~for private and federal lands~~ **over the entire Project area.**

MM BIO-11 Conduct Coachella Valley Fringe-toed Lizard and Flat-tailed Horned Lizard Surveys, Monitoring, and Avoidance

> This mitigation measure enhances the surveying and monitoring requirements as described in MM BIO-2 and MM BIO-7, and will be applied to the pre-construction, construction, and O&M phases of the proposed Project as needed.
>
> Surveys for Coachella Valley fringe-toed lizard and flat-tailed horned lizard shall be conducted during the appropriate seasons (May 1 through the end of summer) and conditions for species identification ~~on federal lands~~ **over the entire Project area**. The duration of the surveys shall coincide with the duration of construction activities in potential habitat for these species during the summer season. Surveys shall be conducted in appropriate habitat in all Project disturbance areas and withing 500 feet of these area on federal lands, and as required by Mitigation Measure BIO-1. Results of the surveys shall be submitted to USFWS **and CDFW** within 30 days of completion.
>
> […]
>
> CVMSHCP/NCCP: The Project is a **C**~~c~~overed **A**~~a~~ctivity under the CVMSHCP/NCCP. This measure is required ~~for private and federal lands~~ **over the entire Project area.**

MM BIO-13 Prepare and Implement Raven Monitoring, Management and Reporting Plan

> […]
>
> CVMSHCP/NCCP: The Project is a **C**~~c~~overed **A**~~a~~ctivity under the CVMSHCP/NCCP. This measure is required ~~for private and federal lands~~ **over the entire Project area.**

MM BIO-17 Conduct Surveys and Avoidance for Special-status Small Mammals

> […]
>
> CVMSHCP/NCCP: ~~Only the~~ Palm Springs pocket mouse and Palm Springs (Coachella Valley) round-tailed ground squirrel are **C**~~c~~overed **Species** under the CVMSHCP/NCCP. ~~However, o~~**O**ther small mammals from the region are not covered. To ensure the protection of small mammals, this measure is required ~~for private and federal lands~~ **over the entire Project area.**"

Response to Comment. As described under each individual impact (see Section 4.06) the Draft EIR/EIS discloses the Project's potential impacts to each species covered under the CVMSHCP and mitigation measures are identified to minimize these impacts. The proposed Project, with implementation of the identified mitigation measures, would be consistent with the CVMSHCP. In addition, the CVMSHCP identifies specific avoidance and minimization requirements for certain species in particular conservation areas. The species with avoidance and minimization requirements applicable to the Project are burrowing owl, crissal thrasher, and Le Conte's thrasher. Species covered by the CVMSHCP do not require additional

protections unless specific under the Plan as described above. In addition, Section 6.10 page 6-48 of the CVMSHCP indicates that "Pursuant to Section 15.7 of the Implementation Agreement (IA), except as otherwise required by law, CDFG shall not recommend or otherwise seek to impose through consultation with other public agencies any mitigation, compensation or habitat enhancement requirements regarding impacts to Covered Species that exceed the requirements prescribed in and pursuant to the CVMSHCP and the IA, including, without limitation, in the form of comments offered by CDFG in the context of any CEQA process associated with approvals for Covered Activities, with regard to effects on Covered Species.

The CDFW has requested changes to the mitigation measures to clarify the location that mitigation would be implemented. For the purposes of this EIR/EIS, private lands refer to all areas of the project that do not occur on federal lands. Private lands would include lands owned by the State.

In this Draft EIR/EIS surveys and mitigation would be carried out over the entire Project area if the measure states "This measure is required for private and federal lands".

Surveys or specific mitigation would not be conducted on areas of the project if the impact is fully mitigated through compliance and participation in the CVMSHCP. In these circumstances the mitigation measures include text that reads "The Project is covered under the CVMSHCP/NCCP." This measure is required for federal lands.

The Draft EIR/EIS includes adequate mitigation measures to reduce impacts to less than significant for species not covered through participation in the CVMSHCP. Based on this information the text of the mitigation measures has not been revised.

Imperial Irrigation District

IID-1: This comment identifies that mitigation may be required due to the potential impact that the Project could have on IID transmission and distribution powerlines and electric service to the area.

Response to Comment. As summarized in Appendix A.6 Scoping Comment Summary (2016), Figures 1-2 (Proposed Project Alignment) and 2-1 through 2-3 (Reach 1-4 Alignments) show that the proposed Project does not overlap or encroach on IID property. In addition, no potential significant impacts were identified in the document. The CVWD is committed to coordinating with the IID during the construction of the project in the future to ensure that any potential impacts to their existing and any newly constructed infrastructure are addressed.

IID-2: This comment provides contact information for the IID Energy – La Quinta Division Customer Operations, 81-600 Avenue 58 La Quinta, CA 92253, at (760) 398-5841. IID encourages discussion with the project development planner assigned to the Project area to give additional information on impacts to IID electrical infrastructure.

Response to Comment. The CVWD is committed to coordinating with the IID during the construction of the project.

IID-3: This comment requests that prior to raising any cranes, forklifts, or other aerial equipment, workers should check for overhead wires. In addition, workers operating boom type lifting or hoisting equipment need to keep to the specified safety clearance at all times, in accordance with California Title 8, Electrical Safety Orders (which gives the closest distance for non-qualified electrical workers to electrically energized conductors).

Response to Comment. The CVWD is committed to constructing the project in accordance with all safety procedures, such as those identified in California Title 8, Electrical Safety Orders.

IID-4: The comment requests that CVWD establish the location and depth of all existing power system facilities and foreign structures in the Project area. CVWD and/or its contractor should contact Underground Service Alert of Southern California (Dig Alert) at least (2) working days prior to the beginning of any digging or excavation work at https://newtinb.digalert.org/direct/.

Response to Comment. The CVWD is committed to constructing the project in accordance with all safety procedures. CVWD or their contractors will contact Underground Service Alert of Southern California (Dig Alert) and clearly mark al above and below ground utilities prior to excavation.

IID-5: This comment identifies that any construction or operation on IID property or within its existing right of way or easements will require an encroachment permit or encroachment agreement (depending on circumstances). The IID Real Estate Section should be contacted at (760) 339-9239 for information regarding encroachment permits or agreements, and the IID encroachment permit application can be found at https://www.iid.com/about-iid/department-directory/real-estate.

Response to Comment. The CVWD is committed to coordinating with the IID during the construction of the project and obtaining any needed encroachment permits.

IID-6: This comment states that the Project proponent will be responsible for the costs of all relocation of existing IID facilities to accommodate the Project, securing rights of way and easements for relocated facilities, or street widening improvements imposed by the City or the County.

Response to Comment. The CVWD is committed to coordinating with the IID during the construction of and understands the responsibilities associated with project implementation.

IID-7: This comment states that any new, relocated, modified, or reconstructed IID facilities as part of the Project need to be included as part of the land use permitting action's CEQA and/or NEPA documentation, environmental impact analysis and mitigation. Any mitigation necessary as a result of the construction, relocation, and/or upgrade of IID facilities is the responsibility of the applicant/developer.

Response to Comment. The CVWD is committed to coordinating with the IID during the construction of the project and will evaluate if any additional CEQA or NEPA actions are required.

IID-8: This comment informs CVWD that any activity or facility necessary for the operation of a project, or necessary to achieve the project objectives, or a reasonably foreseeable consequence of approving the project, then it should be considered an integral project component that should be analyzed within the environmental analysis. The project description should include all project components, including those that will have to be approve by responsible agencies. In addition, a project that requires construction of an offsite infrastructure, the offsite infrastructure must be included in the project description.

Response to Comment. The CVWD is committed to coordinating with the IID during the construction of the project and will evaluate if any additional CEQA or NEPA actions are required. The relocation of distribution lines or other facilities are considered minor components of the larger Project. For example, the relocation of the road at Avenue 38 may require the relocation of existing distribution lines. If these lines require relocation, they would occur within the existing disturbance footprint of the Project. All applicable mitigation measures would be implemented and this action would not result in new or unexpected impacts.

Xavier College Preparatory High School

XCPHS-1: This comment raises a concern that a portion of Reach 3 of the TPFCP appears to be proposed across a significant portion of Xavier's property which would directly interfere with Xavier's current and

future operations. They propose another location along their northern and eastern perimeters that does not extend into the adjacent preserve lands or other properties.

Response to Comment. The Figure 2.2 (Reach 3 Alignment) and Figure 3.6.1 (Land Ownership Proposed Project Alignment) in the Draft EIR/EIS display the alignment as it crosses the northeastern portion of the Xavier property. Based on a review of aerial maps and the GIS data for the project the proposed alignment of Reach 3 would not result in the loss of existing facilities such as the football stadium, visiting stands, tennis facilities, or the solar array. Placement of the channel may result in a disruption of the trail system. Placing Reach 3 further north or east would increase impacts to the Coachella National Wildlife Refuge.

Reach 3 was designed to protect developed areas below the channel and transport damaging storm flows safely out of the area. The concept for this project has been development for many years and public scoping has been conducted. Implementation of the project is expected to reduce risk to Xavier staff and students and is being constructed to minimize impacts to the school. CVWD acknowledges that construction of the project may limit development in the norther portions of the property.

XCPHS-2: This comment requests that the Project proponent works with Xavier to determine an alternative location within the Xavier property that reduces interference with their current and future operations. They propose another location along their northern and eastern perimeters that does not extend into the adjacent preserve lands or other properties.

Response to Comment. Please see Response to Comment XCPHS-1 above for a discussion of the project alignment. However, the CVWD is open to collaborating with landowners to balance flood protection versus impacts to private lands.

Berger Foundation

BF-1: In this comment, Berger identifies a series of Figures (1-2, 2-2, 2-3, 2-8, 2-9, 3.5-1, 3.6-1, 3.8-4) in the DEIR/EIS that show a potentially incorrect boundary for the Coachella Valley Preserve. Berger requests that the boundary be corrected to not overlap with Berger or Xavier property.

Response to Comment. The CVWD used available data from the Bureau of Land Management (BLM), who manages the Coachella Valley Preserve, to display the Preserve boundaries on Figure 3.6-1 (Land Ownership Proposed Project Alignment). This information was verified via an email on July 19, 2022 between William Patterson at CVWD to Audrey Sauvey, GIS Specialist at the BLM, California Desert District. This information was reviewed, and it matched other available data sources. The CVWD acknowledges that this data may not reflect the current boundary that has been adjusted to reflect recent land use changes including the development of the Classic Club Golf Course and the Xavier School, however investigating these changes are out of the scope of this document. Revising the boundaries to reflect a small area would not alter the analysis of the Draft EIR/EIS and no changes to the figures are proposed at this time.

BF-2: This comment requests CVWD to provide additional information on the flood easement agreement with the Classic Club Gold Course (described Table 4.14-1 of DEIR/EIS), such as a signed flood easement agreement.

Response to Comment. The text in Table 4-14-1 (Scoping Issues Relevant to Water Resources) of the Draft EIR/EIS incorrectly stated that the CVWD has a flood easement agreement with the Classic Club Golf Course. This text has been stricken from the Final EIR/EIS. The Draft EIR/EIS correctly states that the Classic Club Golf Course was designed to accommodate storm flows compatible with the proposed project.

BF-3: This comment identifies that the acquisition and protection of 32 acres of aeolian sand habitat, as described in MM BIO-6, includes 24.9 acres of acquired land (Figure 3.6-1). Berger requests to know where the remaining 7.1 acres of protected sand habitat are located.

Response to Comment. The Draft EIR/EIS requires the acquisition of 32 acres of aeolian sand habitat. This requirement was originally identified in the 2000 Biological Opinion and has been carried forward for the current project. As described in the Berger comment part of the acquisition and land swap with the Refuge will be used to meet this requirement. The remaining 7.1 acres has not been identified at this time nor is the location required for the purposes of CEQA. However, CVWD has reviewed Figure 4-16c (Thousand Palms Conservation Areas) which identify areas supporting active sand dunes and sand fields that could be acquired as part of the compensatory mitigation required for the proposed project. In addition, Mitigation Measure BIO-6 (Compensate for Habitat Loss) requires the CVWD to prepare a Habitat Compensation Plan in coordination with USFWS and CDFW, identifying the proposed compensation lands and detailing all proposed improvement, management, protection activities. Therefore, there is a reasonable certainty that project impacts would be mitigated as required by CEQA.

BF-4: This comment asks for additional clarification on the applicable mitigation standards for the Project's impacts on the Coachella Valley National Wildlife Refuge. The DEIR/EIS (page 4.6-10) states that acquired lands must "be of equal or greater acreage than those disturbed due to construction and be comprised of ecologically equivalent habitat to support sensitive species." Berger wants to know if this is the only applicable mitigation standard for the Project, or if there is a specific mitigation ratio applicable to the impacts of the Project.

Response to Comment. The parcels selected as part of the federal land swap were evaluated and deemed appropriate during coordination with the Refuge manager. A specific mitigation ratio was not proposed nor is required provided the lands are deemed suitable and of ecologically equivalent.

BF-5: This comment asks if the 24.9 acres of mitigation lands identified in Figure 3-6.1 in the DEIR/EIS is to compensate for additional impact mitigations of the TPFCP (24.9 acres is 16.09 acres higher than the 8.81 acres of land acquisition). Berger wants to clarify whether the additional acreages is to cover impacts from other portions of the Project or if the TPFCP is providing more mitigation land than required.

Response to Comment. The parcels selected as part of the federal land swap also meet the mitigation requirement for the preservation of 32 acres of aeolian sand habitat. Where feasible CVWD intends to nest mitigation.

BF-6: This comment asks if the 24.9 acres of CVNWR being conveyed to CVWD or is the "land swap" referring to the 8.81 acres of land acquisition (Figure 3.6-1).

Response to Comment. As described in the Draft EIR/EIS the 24.9 acres of private lands located near Reach 3 will be transferred to the USFWS as a land swap (see Figure 3.6-1, Land Ownership Proposed Project Alignment).

BF-7: This comment seeks clarification for the 550-acre floodway area as mitigation lands (page 1-12 and Figure 2-1 and 2-2). It asks 1) if the mitigation lands will become a floodway for FEMA mapping, and 2) if the additional lands need to be acquired to preserve the 550-acre floodway.

Response to Comment. As described in 2.2.1 (Project Elements) in the Draft EIR/EIS, the 550-acre floodway would be located along the levees and in the active wind corridor between Reach 1 and Reach 3 (see Figure 2-1), to comply with the requirements of the CVMSHCP. Development would be prohibited in this floodway to protect the wind corridor and limit disruptions to sand migration. As disclosed in Section 2.2.1 (Project Elements) the proposed alignment of Reach 1 would cross 37 non-residential

properties and 7 residential properties, as shown in Figure 2-6 (Affected Properties – Reach 1 Alignment). These properties would need to be obtained by the CVWD for this reach to be constructed.

BF-8: This comment identifies minor refinements to the Reach 3 alignment, called "Refined Alignment", to reduce impacts to the Coachella Valley Preserve, Xavier, Classic Club, and Berger property, and provide mitigation lands greater than the impact on the preserve. The "Refined Alignment" option reduces impacts to CVNWR land to 6.3 acres (as opposed to the 8.8 acres of impact due to the proposed Project). Berger can provide 12.5 acres of proposed mitigation lands to compensate for this loss (as opposed to the proposed Project's 24.9 acres of mitigation land). This "Refined Alignment" reduces impacts to the Preserve as well as allows continued development on Xavier, Classic Club, and Berger property. Berger requests that CVWD work with them on developing the "Refined Alignment" option prior to finalizing the design and construction plans for Reach 3.

Response to Comment. The Draft EIR/EIS considered a reasonable range of alternatives throughout the CEQA/NEPA process including the removal of Reach 2, modifications to the western portion of Reach 3 and the No Project Alternative. Prior to the publication of the Draft EIR/EIS, the CVWD and USACE Planning published a Final EIR/EIS in 2000 that included a different configuration of levees. As described in Section 2.4 (Alternatives Considered but Eliminated from Analysis), the 2000 document referred to Reach 3 as a "Wind Corridor Levee", would begin approximately 2,000 feet south of Levee 2 and runs along the south side of the wind corridor to the western and southwestern boundary of the Preserve. In comparison with Reach 3 of the proposed Project, this levee would continue through the Classic Club Golf Course. Levee 3 would also traverse a larger portion of Xavier High School than would Reach 3 of the proposed Project. When the 2000 Final EIS/EIR was prepared, neither the golf course nor the high school had been constructed.

Implementation of the current design was identified during the scoping process and has been designed to avoid as much of the Xavier High School as possible while ensuring the safe transport of flood waters.

BF-9: This comment identifies minor refinements to the Reach 4 alignment, called "Refined Alignment", to reduce impacts of this portion of the Project. Berger proposes the Refined Alignment to be located on the eastern side of Berger property. This will impact approximately 3.6 acres of CVNWR land, which Berger will provide 6.1 acres of land in exchange for the disturbance, resulting in a similar land swap with USFWS (page 4.6-10 of DEIR/EIS). Berger requests CVWD to work with them on developing the "Refined Alignment" option prior to finalizing the design and construction plans for Reach 4.

Response to Comment. The Draft EIR/EIS considered a reasonable range of alternatives throughout the CEQA/NEPA process, including additional alternative suggestions provided by Dan Villiness in the 2016 Scoping Comment Summary (Appendix A.6 and A.7). See Response to Comment BF-8 above. In addition, the Draft EIR/EIS addressed additional alternative suggestions provided by Dan Villiness in the 2016 Scoping Comment Summary (Appendix A.6 and A.7) in Sections 2.4 (Alternatives Considered by Eliminated) and 4.14 (Water Resources).

BF-10: This comment requests clarification of Reach 3 and Reach 4 design with regards to potential walls or levees along the southern banks of these channels. Berger identifies that the NHC 2016 MIKE model indicates that the water surface elevations within Reach 3 Channel are several feet higher than the natural ground elevation southwest of the wall, and that Reach 4 can contain inflows without a levee.

Response to Comment. The proposed project has been subject to design review by licensed engineers and was designed to safely collect and convey the design storm event. The project has not yet reached the 90 percent design phase and it is possible that minor modifications to the channels or levees may occur. These changes are not expected to result in new or increased impacts under CEQA.

BF-11: This comment refers to the placement of soil in the "temporary soil deposition area" south of Ave 38th (Figure 2-5 of DEIR/EIS). Berger requests clarification on whether the placement of soil at this location is temporary or permanent. If permanent, Berger will want to have an appropriate agreement regarding the details of soil export to this location.

Response to Comment. As described in Section 2.2.2 (Construction), material excavated from the Project footprint area that is not used for construction of the levees would be placed within two sand disposal areas (described in Figure 2-5). Suitable blowsand material (approximately 100,000 CY) would be salvaged and placed at a blowsand augmentation area on the Refuge constructed by the USFWS (described in Figure 2-5). Approximately 726,000 CY of material from the Reach 4 Channel construction would be placed south of Avenue 38 within the existing windrows (referred to as the soil disposal area – see Figures 1-2 and 2-3). This would result in an approximately 2-foot increase in the ground level across the approximately 250-acres site (permanent disturbance area). The Draft EIR/EIS discloses this as a permanent placement of sediment and CVWD will coordinate with the Berger Foundation regarding the disposition of this material. Figure 2-5 of the Draft EIR/EIS incorrectly labeled this area as a temporary impact and the Figure has been revised to clarify this point. The term temporary was used because the area would retain habitat function after the placement of the soil.

BF-12: This comment refers to the permanent fencing to prevent access to the sand dunes located south of Ave 38 as described on page 2-19 of the DEIR/EIS. Berger questions whether the location of the sand dunes is accurately described within this portion of the Berger property as the area has been approved for future development to Specific Plans previously approved by the County of Riverside (which did not identify any sand dunes that require protection or preservation). Berger requests further clarification on the location of the sand dunes, description of the basis for imposing any requirements for the preservation of land or installation of protective fencing on the properties south of the Reach 4 channel location.

Response to Comment. The dunes referred to on Section 2.2.2 (Construction), page 2-19 of the Draft EIR/EIS have formed over time along the windrows of vegetation that are present on the property (as described in Figure 2-5). Fine grain sands occur along these areas and sensitive plants and wildlife have some potential to occur in these areas. These features were documented during surveys of the project area. The intent of fencing these areas off was to reduce potential impacts to sensitive resources during the placement of sand when Reach 4 is constructed. CVWD and the USACE concur that these areas do not need to be fenced in perpetuity and the language has been removed from the Draft EIR/EIS. The text on page 2-19 has been modified to read, "Approximately 726,000 CY of material from the Reach 4 Channel construction would be placed south of Avenue 38 within the existing windrows (referred to as the soil disposal area – see Figures 1-2 and 2-3). This would result in an approximately 2-foot increase in the ground level across the approximately 250-acres site (permanent disturbance area). To reduce impacts to sensitive wildlife that may use this area after construction, the material would be sorted with the finest grain sands deposited as the top layer. ~~In addition, the existing dunes south of Avenue 38 would be permanently fenced to prevent access. "~~

8. Preparers of the Document

The tables that follow present the preparers and reviewers of the EIR/EIS, including the California Environmental Quality Act (CEQA) Lead Agency (Coachella Valley Water District), the National Environmental Protection Act (NEPA) Lead Agency (U.S. Army Corps of Engineers), and the consultant team.

Table 8-1. CEQA and NEPA Lead Agencies

Name	Role
Coachella Valley Water District	
David Wilson	Engineering Supervisor
William Patterson	Environmental Supervisor
Solan Watts	Associate Biologist
U.S. Army Corps of Engineers, Los Angeles District	
Sallie Diebolt	Chief, Arizona Branch, Regulatory Division
Michael W. Langley	Senior Regulatory Project Manager, Arizona Branch, Regulatory Division
United States Fish and Wildlife Service	
Jonathon Shore	Acting Project Leader, Sonny Bono Salton Sea National Wildlife Refuge Coachella Valley National Wildlife Refuge

Table 8-2. Consultant Team

Name	Project Role	Education/Certifications	Years of Experience
Aspen Environ5 Final EIR/EIS mental Group			
Chris Huntley	Project Manager, Biological Resources, Sand Migration	Graduate Studies, Biology BA, Biology	23
Lisa Blewitt	Deputy Project Manager, Aesthetics, Noise, Paleontological Resources, Public Safety, Noise	BS, Chemical Engineering	20
William Walters	Air Quality	BS, Chemical Engineering	25
Scott White	Biological Resources	MA, Biology BA, Biology	27
Carla Wakeman	Biological Resources, Sand Migration	MA, Biology BA, Biology	25
Jamie Miner	Biological Resources	BS, Biology	15
Jennifer Lancaster	Biological Resources	MS, Biology BS, Biology	8
Justin Wood	Biological Resources	MS, Biology BS, Biology	14
Margaret Schaap	Biological Resources, Sand Migration	BS, Biology	9
Brigit Harvey	Biological Resources	MS, Biology BS, Biology	2
Lauren DeOliveira	Cultural Resources	MS, Geographic Information Science BA, Liberal Studies, Emphasis on Archaeology Registered Professional Archaeologist (ID#17577)	11

Table 8-2. Consultant Team

Name	Project Role	Education/Certifications	Years of Experience
Beth Bagwell	Cultural Resources	PhD, Anthropology (Archaeology) MA, Anthropology (Archaeology) BA, Anthropology and Creative Writing Certificate in Archaeological Technology	27
Diana Dyste	Cultural Resources	MA, Archaeology BA, Anthropology	16
Tatiana Inouye	Land Use and Recreation	Master of Environmental Science and Management BS, Biology	12
Scott Debauche	Land Use and Recreation, Socioeconomics and Environmental Justice, Transportation	BS, Urban Planning and Design U.S Council of Engineering & Scientific Specialty Boards/ABCEP Board Certified Environmental Planner (CEP) #12040973	20
Patrick Meddaugh	Project Description, Topography, Geology and Soils, Socioeconomics and Environmental Justice, Water Resources, Other Federal Requirements and CEQA Considerations	BS, Environmental Science and Management	4
Phil Lowe	Water Resources	MA, Watershed Management BA, Watershed Management	35
Sandra Alarcon-Lopez	Public Involvement	MA, Architecture and Urban Planning BA, Speech and Hearing Sciences	30
Parsons Brinckerhoff			
Mark Salmon	Project Design	BS, Civil Engineering Professional Engineer	38
Desert Research Institute			
Dr. Nicholas (Nick) Lancaster	Sand Migration	PhD, Geography MA, Geography BA, Geography	47
Applied Earthworks			
Jessica DeBusk	Paleontological Resources Assessment	Master of Business Administration BS, Geology and Paleontology	13
Heather Clifford	Paleontological Resources Assessment	MS, Geology BA, Art	3

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10. Glossary and Acronyms

10.1 Glossary

— A —

aeolian. Relating to or arising from the action of the wind.

Adaptive Management Plan. A structured, iterative process of robust decision-making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring.

alignment. The horizontal and vertical ground plan of a roadway, railroad, transit route, or other facility as it would appear in plan and profile.

alluvial. Relating to or deposited by flowing water.

attainment area. An area considered to have air quality standards that are good or better than the National Ambient Air Quality standards as defined in the Clean Air Act.

A-weighted decibel (dBA). Unit for measuring sound in which the sensitivity of the human ear to certain frequencies is taken into account.

— B —

Best Management Practice (BMP). Techniques used in various industries to assure that projects, work, or processes meet regulatory or industry standards.

blowsand. Sand which has been blown by the wind. Typically, finer, lighter grains are deposited at tops of dunes; the larger, heavier grains collect at the bottom.

— C —

California Environmental Quality Act. A statue which requires State and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

colluvial. Loose, unconsolidated sediments that have been deposited at the base of hillslopes by either rainwash, sheetwash, slow continuous downslope creep, or a variable combination of these processes.

Community Noise Equivalent Level (CNEL). The average sound level over a 24-hour period, with a penalty of 5 dB added between 7 p.m. and 10 p.m. and a penalty of 10 dB added for the nighttime hours of 10 p.m. and 7 a.m.

cumulative impact. The effects of two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts.

— D —

decibel (dB). Unit for measuring sound, based on a logarithmic scale.

de minimis. Minimal importance.

— E —

ephemeral. When referring to a stream; a stream that flows only briefly during and following a period of rainfall in the immediate locality.

equivalent sound-level (Leq). The equivalent steady state sound level that in a stated period of time would contain the same acoustical energy.

erosion. The process by which the Earth's surface gets worn down due to natural processes such as water and wind flow.

expansive soils. Soils characterized by their ability to undergo significant volume change (shrink and swell) due to variation in soil moisture content. Expansive soils are typically very fine grained with a high to very high percentage of clay. The amount and type of clay minerals in the soil influence volume change.

— F —

fault. A fracture in the crust of the earth along which rocks on one side have moved relative to those on the other side.

fluvial. Of or found in a river.

frequency. A measure of how rapidly sound pressure fluctuates over one second, in units of hertz.

fugitive dust. Emissions of windblown dust from sources other than exhaust stacks (e.g., wheel dust from unpaved roads).

— H —

Holocene. An epoch of the Quaternary period spanning the time from the end of the Pleistocene (8,000 years ago) to the present

hydraulics. The study of the mechanical properties of liquids.

hydrology. The study of the occurrence, distribution, movement and properties of water on Earth.

— I —

impact. The effect of an action on the environment.

— L —

Leq. Equivalent sound pressure level-the steady sound level that, over a specified period of time, would produce the same energy equivalence as the fluctuating sound level actually occurring.

Lmax. The maximum noise level during a sound measurement period.

Lmin. The minimum noise level during a sound measurement period.

liquefaction. The phenomenon in which saturated granular sediments temporarily lose their shear strength during periods of earthquake-induced strong ground shaking. The susceptibility of a site to liquefaction is a function of the depth, density, and water content of the granular sediments and the magnitude and frequency of earthquakes in the surrounding region.

— M —

mesic. Of, pertaining to, or adapted to a habitat having a moderate supply of moisture.

mitigation (mitigation measure). Methods proposed to avoid, minimize, rectify, reduce, eliminate, or compensate for a significant impact.

— N —

noise. Unpleasant, unwanted, undesirable, or disturbingly loud sound that disrupts a person's quality of life by interfering with communication, sleep, and/or leisure.

nonattainment area. An area considered to have air quality standards that are worse than the National Ambient Air Quality standards as defined in the Clean Air Act.

— P —

peak ground acceleration. The measure of earthquake acceleration on the ground.

Pleistocene. The latest major geological epoch, colloquially known as the "Ice Age" due to the multiple expansion and retreat of glaciers.

— Q —

Quaternary. The most recent period in the Earth's history.

— S —

sedimentation. A process used to settle out suspended solids in water under the influence of gravity.

sensitive receptor. An individual who is more susceptible to the effects of air pollution than the general population. Sensitive receptors generally include children and elderly individuals.

subsidence. General term for the slow, long-term regional lowering of the ground surface with respect to sea level.

— T —

taxon, taxa. A taxonomic category or group, such as a phylum, order, family, genus, or species. Taxa is the plural of taxon.

tsunami. A series of waves generated by an undersea disturbance, such as an earthquake or landslide.

— V —

viewshed. The geographical area that is visible from a location. It includes all surrounding points that are in line-of-sight with that location and excludes points that are beyond the horizon or obstructed by terrain and other features (e.g., buildings, trees).

— W —

wetlands. Areas "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." (33 CFR 328.3, 40 CFR 230.3).

10.2 Acronyms

AADT	Annual Average Daily Traffic
AB	Assembly Bill
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ADT	Average daily traffic
AMSL	Above mean sea level
APE	Area of potential effect
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	Air Resource Board
BA	Biological Assessment
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practice
BMSL	Below mean sea level
BO	Biological Opinion
BP	Before present
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal-EPA	California Environmental Protection Agency
Cal-IPC	California Invasive Plant Council
CAR	Coordination Act Report
CARB	California Air Resources Board
CCAA	Clean Air Act of 1988
CCR	Code of California Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDP	Census Designated Place
CEC	California Energy Commission
CEP	Certified Environmental Planner
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act

CESMD	Center for Engineering Strong Motion Data
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CHWMP	County Hazardous Waste Management Plan
CI	Coccidioides immitis
CLOMR	Conditional Letter of Map Revision
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNRA	California Natural Resources Agency
CO	Carbon Monoxide
CR	Commercial Retail
CRPR	California Rare Plant Rank
CSLC	California State Lands Commission
CUPA	Certified Unified Program Agencies
CVAG	Coachella Valley Association of Governments
CVC	California Vehicle Code
CVCC	Coachella Valley Conservation Commission
CVFTL	Coachella Valley fringe-toed lizard
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
CVNWR	Coachella Valley National Wildlife Refuge
CVWD	Coachella Valley Water District
CWA	Clean Water Act
CY	Cubic yards
DCA	Desert Christian Academy
DOC	Department of Conservation
DPM	Diesel particulate matter
DPR	Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
EC	Environmental Commitment
EIC	Eastern Information Center
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAR	Floor area ratio
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FFRMS	Federal Flood Risk Management Standard
FHSZ	Fire Hazard Severity Zone
FIRM	Flood Insurance Rate Map
FLPMA	Federal Land Policy and Management Act of 1976
FMMP	Farmland Mapping and Monitoring Program
FTHL	Flat-tailed horned lizard
GCC	Global climate change
GHG	Greenhouse gas
GWP	Global warming potential
HAP	Hazardous air pollutant

HDR	High Density Residential
HEC-HMS	Hydrologic Engineering Center – Hydrologic Modeling System
HEC-RAS	Hydrologic Engineering Center – River Analysis System
HMMP	Habitat Mitigation and Monitoring Plan
HMTA	Hazardous Materials Transportation Act
HWCL	Hazardous Waste Control Law
IPCC	Intergovernmental Panel on Climate Change
ITP	Incidental Take Permit
IWMP	Integrated Weed Management Plan
LEDPA	Least Environmentally Damaging Practicable Alternative
LOS	Level of service
LSAA	Lake and Streambed Alteration Agreement
LST	Localized Threshold of significance
MBTA	Migratory Bird Treaty Act
MDAB	Mojave Desert Air Basin
MDR	Medium Density Residential
MLD	Most Likely Descendent
MMRP	Mitigation Monitoring and Reporting Program
MND	Mitigated Negative Declaration
MRDS	Mineral Resources Data System
MRZ	Mineral Resource Zones
MSHCP	Multiple Species Habitat Conservation Plan
MWD	Metropolitan Water District
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NBMP	Nesting Bird Management Plan
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHC	Northwest Hydraulic Consultants
NHPA	National Historic Preservation Act
NO2	Nitrogen dioxide
NOA	Notice of Availability
NOD	Notice of Determination
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPPA	Native Plant Protection Act
NRHP	National Register of Historic Places
O3	Ozone
OHV	Off-highway vehicle
OHW	Ordinary High Water
OPR	Office of Planning and Research
OS-CH	Open Space-Conservation Habitat
OSHA	Occupational Safety and Health Administration
PAR	Property Analysis Record
PDBD	Paleobiology Database
PERP	Portable Equipment Registration Program

PM	Particulate matter
PM10	Particulate matter (less than 10 microns in diameter)
PM2.5	Fine particulate matter (less than 2.5 microns in diameter)
PPV	Peak particle velocity
PRC	Public Resources Code
RCTC	Riverside County Transportation Commission
ROD	Record of Decision
ROW	Right-of-way
RR	Rural Residential
RWQCB	Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCH	State Clearinghouse
SCHWMA	Southern California Hazardous Waste Management Authority
SEA	Supplemental Environmental Assessment
SFHA	Special Flood Hazard Area
SHMA	Seismic Hazards Mapping Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SMARA	California Surface Mining and Reclamation Act
SMGB	State Mining and Geology Board
SMMP	Sand Migration Management Plan
SO2	Sulfur dioxide
SOC	Statement of Overriding Considerations
SPCC	Spill Prevention, Countermeasure, and Control
SRA	Source Receptor Area
SSAB	Salton Sea Air Basin
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminant
TCR	Tribal cultural resources
THPO	Tribal Historical Preservation Officer
TIS	Traffic Impact Studies
TMDL	Total Maximum Daily Load
TSD	Treatment, Storage, or Disposal
USACE	U.S. Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground storage tank
VHDR	Very High Density Residential
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	Vehicle miles travelled
WCVAP	Western Coachella Valley Area Plan
WEAP	Worker Environmental Awareness Program