

**Orange County Water District  
Santiago Basin Saddle Repair Project**

**Draft Initial Study/Mitigated Negative Declaration**

**Prepared by:  
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- Appendix B – *Santiago Basins Saddle Improvement Project Air Quality and Greenhouse Gas Emissions Technical Memorandum*, Vista Environmental, December 2018
- Appendix C – *Santiago Basins Saddle Repair Project Description and Biological Assessment*, Orange County Water District, November 2018
- Appendix D – *Phase I Cultural Resources Report*, BonTerra Psomas, April 2016
- Appendix E – *AB52 Tribal Consultation*, Sagecrest Planning+Environmental, February 2019
- Appendix F – *Santiago Basins Saddle Improvement Project Noise and Vibration Technical Memorandum*, Vista Environmental, December 2018



## Santiago Basin Saddle Repair Project Initial Study/Mitigated Negative Declaration

### SECTION 1.0 INTRODUCTION

#### 1.1 Purpose of Environmental Review

The California Environmental Quality Act (CEQA) requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. This Initial Study has been prepared to disclose and evaluate short-term construction related impacts and long-term operational impacts associated with the implementation of the Orange County Water District (OCWD) Santiago Basin Saddle Repair Project (Proposed Project).

Pursuant to Section 15367 of the State CEQA guidelines, OCWD is the Lead Agency and has the principal responsibility of approving and implementing the Proposed Project. As the Lead Agency, OCWD is required to ensure that the Proposed Project complies with CEQA and that the appropriate level of CEQA documentation is prepared. Through preparation of an Initial Study as the Lead Agency, OCWD would determine whether to prepare an Environmental Impact Report (EIR), Negative Declaration or Mitigated Negative Declaration (MND). If the Lead Agency finds that there is no evidence that a project activity either as proposed or as modified to include the mitigation measures identified in the Initial Study prior to its public circulation, would not cause a significant effect on the environment, the Lead Agency may prepare a Negative Declaration or Mitigated Negative Declaration. Based on the conclusions of this Initial Study, OCWD has recommended that the appropriate level of environmental documentation for the Proposed Project is a Mitigated Negative Declaration.

#### 1.2 Statutory Authority and Requirements

This Initial Study/Mitigated Negative Declaration has been prepared in accordance with the CEQA, Public Resources Code Section 21000 et seq. State CEQA Guidelines and OCWD CEQA Environmental Procedures.

#### 1.3 Technical Information and Studies

The following technical studies and information have been incorporated in the environmental impact evaluation prepared for the Santiago Basin Saddle Repair Project.

- Appendix A – *Streambed Alteration Agreement Notification No. 1600-2012-0013-R5*, California Department of Fish and Wildlife, February 2013
- Appendix B – *Santiago Basins Saddle Improvement Project Air Quality and Greenhouse Gas Emissions Technical Memorandum*, Vista Environmental, December 2018
- Appendix C – *Santiago Basins Saddle Repair Project Description and Biological Assessment*, Orange County Water District, November 2018
- Appendix D – *Phase I Cultural Resources Report*, BonTerra Psomas, April 2016
- Appendix E – *AB52 Tribal Consultation*, Sagecrest Planning+Environmental, February 2019
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## Santiago Basin Saddle Repair Project Initial Study/Mitigated Negative Declaration

### SECTION 2.0 PROJECT DESCRIPTION

#### 2.1 Background

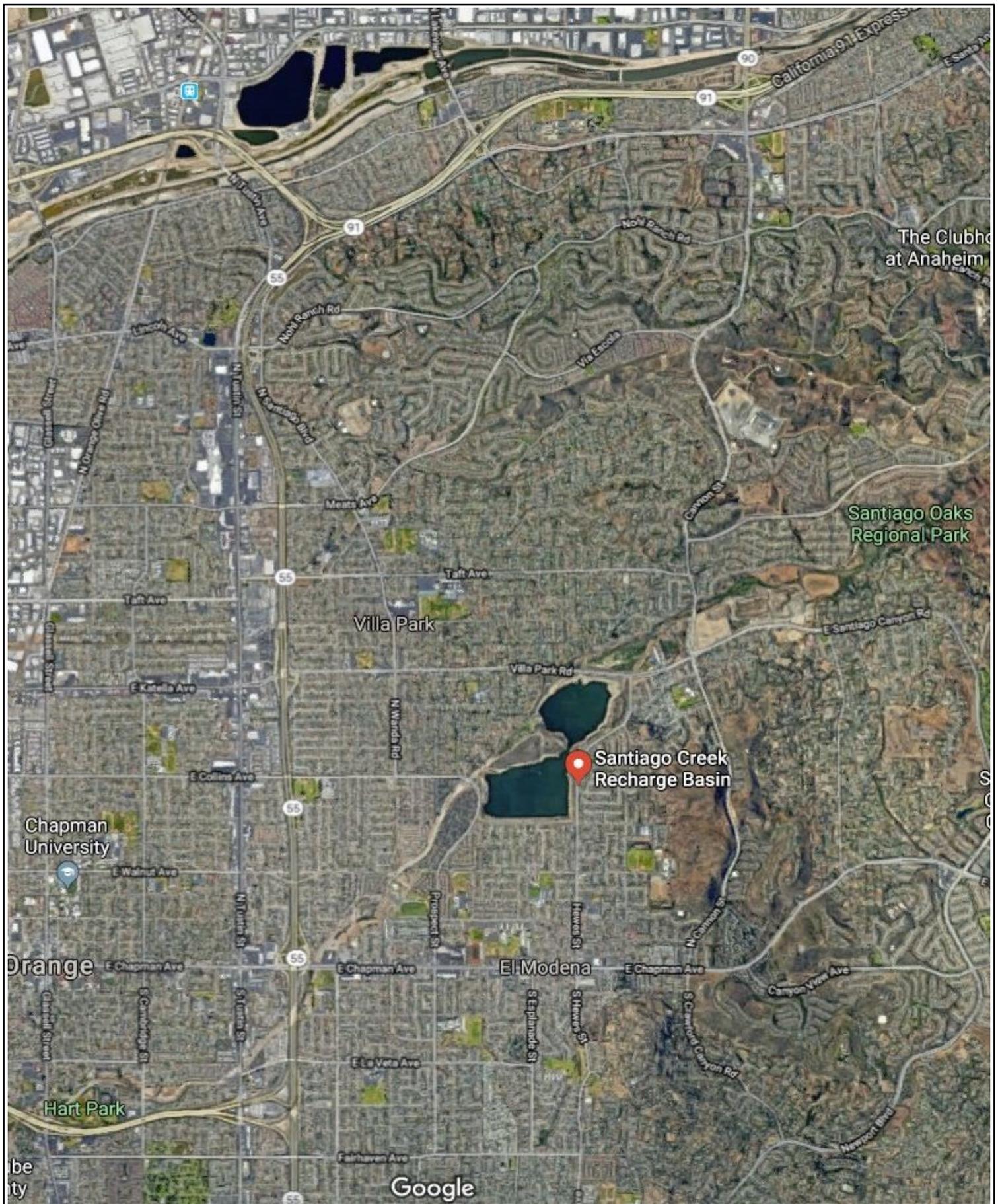
The Santiago Recharge Basins (Santiago Basins) are comprised of two basins: Bond Basin and Blue Diamond Basin. From the early 1950's to 1990, the basins were used as an aggregate quarry operation. In the 1970's, a sizable rock apron was placed along the saddle area between the two larger basins of Bond Basin and Blue Diamond Basin to minimize erosion. In 1990, OCWD purchased the basins for ground water management operations and installed a pipeline along the saddle to transfer water between the basins. During the 2010 storm season, multiple landslides occurred on both sides of the saddle and damaged the rock apron and existing pipeline, resulting in restricted flows between the basins. Subsequent storm events in December 2014 and 2016 caused additional landslides along the slopes. Without remediation, the slopes around the basin would continue to fail, potentially posing safety risks when maintenance activities in the basin are occurring and risking slope failure, which would harm or destroy riparian vegetation and environmental resources.

#### 2.2 Project Site Location

The proposed saddle repair activities would occur in the area between Blue Diamond Basin and Bond Basin at the Santiago Recharge Basins, in the City of Orange in Orange County. As shown in Figure 1 - *Regional Vicinity Map* and Figure 2 – *Project Area*, the Santiago Basins are bounded by Prospect Avenue to the west, Hewes Avenue to the east, Bond Avenue to the south and Villa Park Road to the north. The Project Site can be regionally accessed by State Route 55 via the Chapman Avenue exit. The Santiago Basins are located downstream of Villa Park Dam and Santiago Reservoir and receive incoming flows from Santiago Creek, which drains into and out of the basins. The Project Site is located at Township T4 South, Range R9 West on U.S.G.S. Quad Map for Orange.

The Santiago Basins and the adjacent Smith Basin were previously aggregate mines (for sand and gravel aggregate) prior to their purchase by OCWD in 1990. The Santiago Basins are up to 150 feet deep and the majority of the construction work for the Proposed Project would be at least 40 feet below the surrounding ground surface adjacent to the Santiago Basins.

The Orange County Water District has entered into a Streambed Alteration Agreement with the California Department of Fish and Wildlife. The agreement outlines the Regional Maintenance Plan for Groundwater Recharge Facilities, which includes the existing water conveyance structures including the transfer pipeline between the basins and the existing box culvert, access roads and ramps and disturbance of sediment on the Project Site. (Appendix A – *Streambed Alteration Agreement Notification No. 1600-2012-0013-R5, Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities*, California Department of Fish and Wildlife, February 2013).



**Santiago Basins  
Saddle Repair Project  
Regional Vicinity Map**

Figure 1



Path: I:\SS\Bott\Santiago\F1\_SaddleImprovementR1.mxd



0 300 600 Feet

**Santiago Basins  
Saddle Repair Project  
Project Area**

Figure 2



### 2.3 Proposed Project

The purpose of the Proposed Project is to (1) reconstruct the flow equalization box culvert for protection of the saddle apron and (2) reconstruct failure slopes to (a) alleviate safety concerns when maintenance activities are occurring and (b) reduce risk of future slope failure that would harm or destroy riparian vegetation and environmental resources.

The Proposed Project activities include the dewatering of the basin, stabilization of the saddle side slopes, reconstruction of the saddle apron, reconstruction of an equalization box culvert for the protection of the saddle apron, and restoration of any vegetation removed for the Proposed Project.

#### ***Dewatering of Santiago Basin***

All work to be performed in Santiago Basin would be at least 200-feet above mean sea level (msl). Excavation and fill for the slope repairs and saddle apron would be within the 200 – 285-foot above msl range. To complete repairs to the Santiago Saddle, the water surface elevation in Santiago Basin would be below the 200-foot elevation during the construction period. The water elevations in Santiago Basin are typically lower than this during summer and fall months. Santiago Basin will be allowed to percolate naturally to drop the water elevation. If high water elevations persist longer than necessary to complete the work within the scheduled time, water will be pumped via the Santiago Floating Pump Station to Santiago Creek for percolation, and/or it will be pumped to Burris Basin via the Santiago Pipeline for percolation in Burris Basin. Pumping would start during spring months.

The bottom elevation of Bond Basin is 148 feet msl, and the bottom elevation of Blue Diamond Basin is 168 feet msl. The bottoms of both basins are generally flat with sloping sidewalls, and the average water depths during construction would be maintained at a range from 30 - 50 feet. This depth of water is within the typical operating parameters for summer and fall months in Santiago Basin. Based upon previous observations, these depths would be enough to support aquatic species during construction.

#### ***Saddle Side Slope Repairs***

To improve stability, the slopes of the saddle would be cut back to a maximum steepness of 1.8 :1. The proposed grading activity would remove debris related to the slope failures and in areas prone to failing, as shown in Figure 3 – *Limits of Grading*.

#### ***Saddle Apron Improvements***

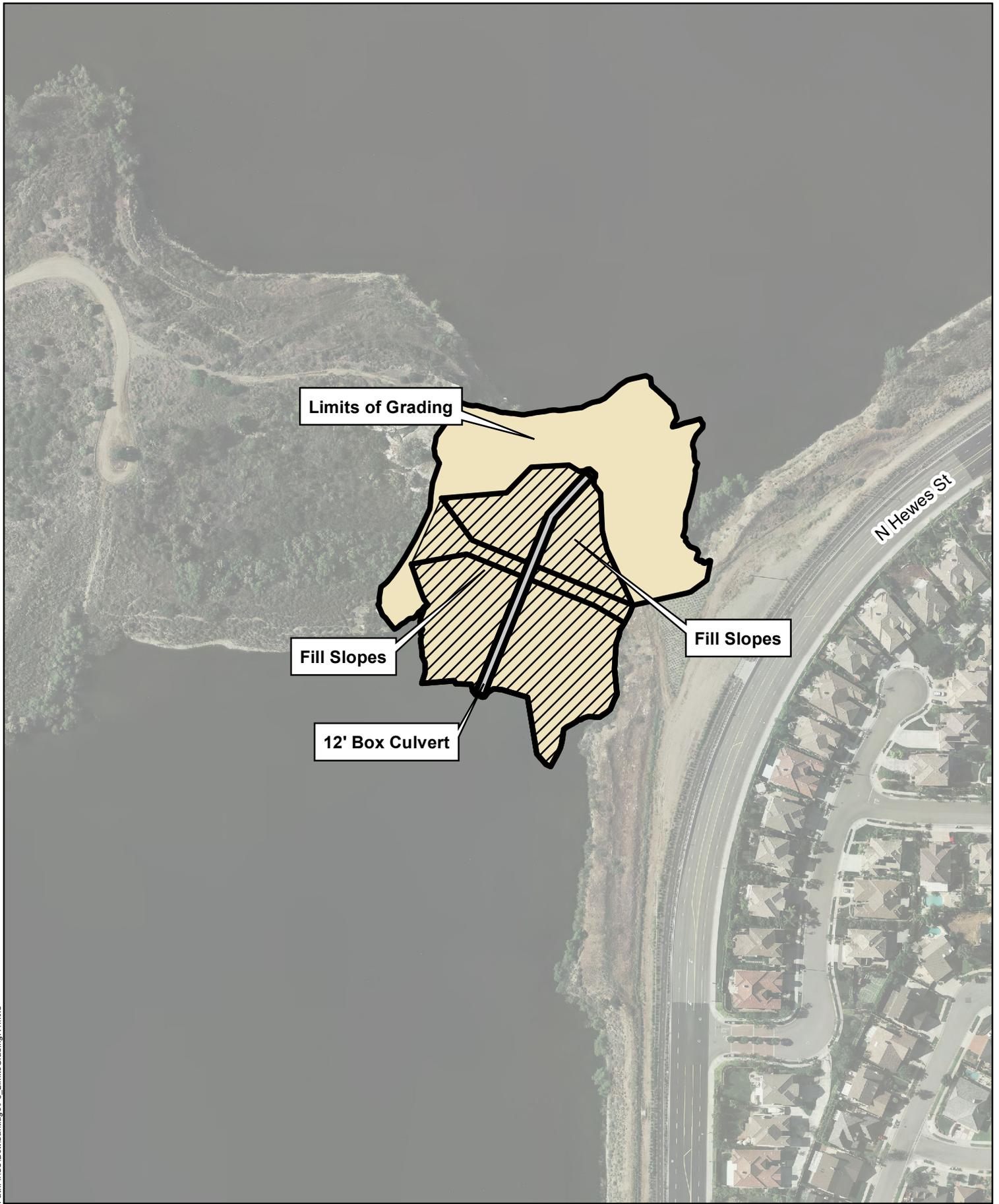
In conjunction with the slope grading, the saddle would be widened by approximately 60 feet and the existing grade would be lowered by approximately 30 feet, as shown in Figure 4 – *Grading Plan*. A 12-foot square by 400-foot long concrete box culvert would be excavated and installed between the basins in the saddle area. The underground pipeline would convey flows between Blue Diamond Basin and Bond Basin, allowing the basin levels to equalize without overtopping and destroying the apron. After the culvert is constructed, the trench would be backfilled with native material, and the saddle would be reconstructed with soil removed from the slopes during grading and soil that has eroded from the bottom of the existing saddle but is



## **Santiago Basin Saddle Repair Project Initial Study/Mitigated Negative Declaration**

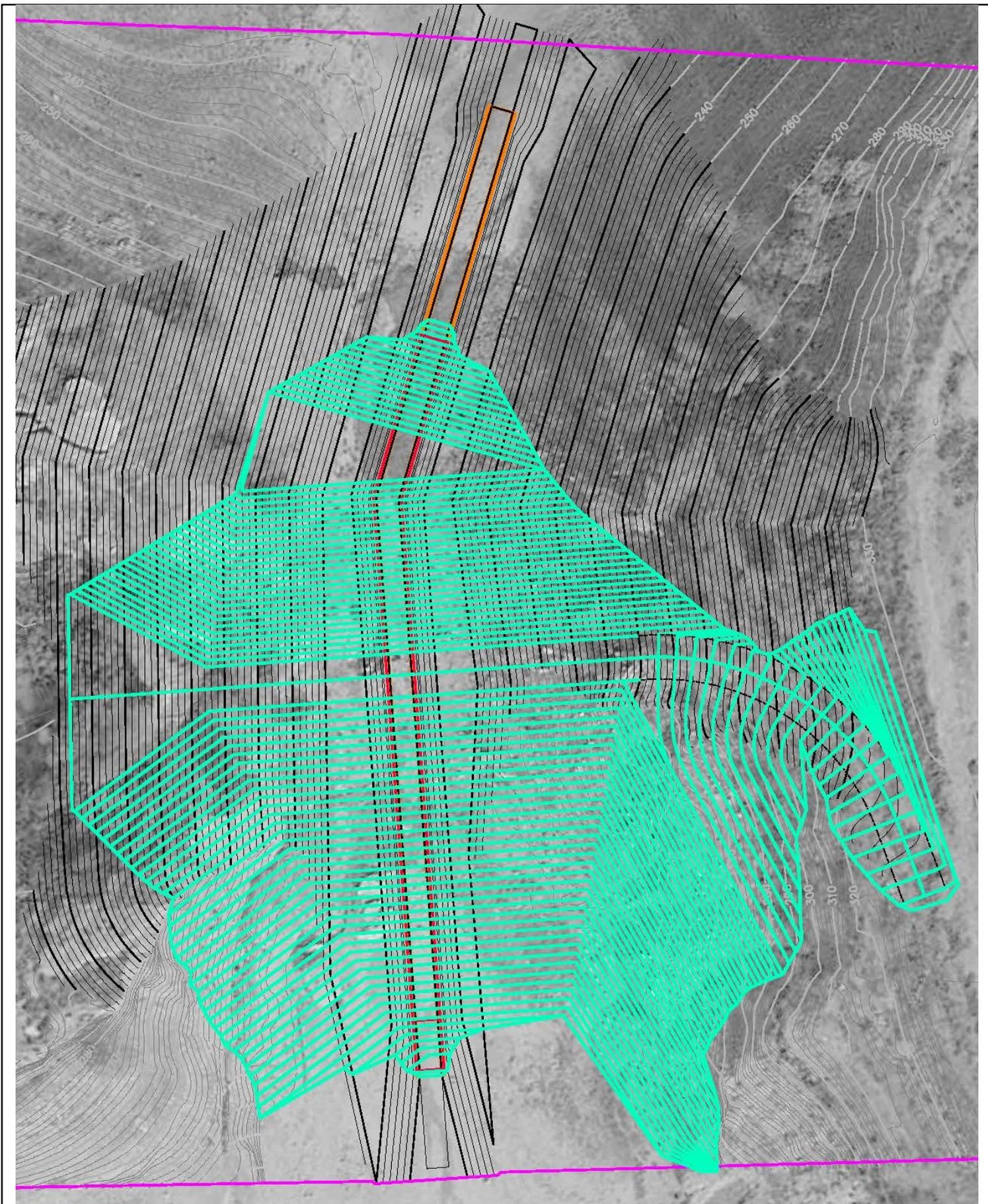
still located within the gradual slope from the saddle to the bottom of Bond and Blue Diamond Basins. The saddle would also function as an apron allowing water within Blue Diamond Basin to spill over into Bond Basin if the basins cannot equalize due to high basin inflows.

Path: I:\SS\Bott\Santiago\F5\_LimitsGradingR1.mxd



**Santiago Basins  
Saddle Repair Project  
Limits of Grading**

Figure 3



**Santiago Basins  
Saddle Repair Project  
Grading Plan**

Figure 4



## Santiago Basin Saddle Repair Project Initial Study/Mitigated Negative Declaration

### **Maintenance Activities**

OCWD would dewater the basin to inspect the condition of the saddle and to remove any debris or trash that might accumulate along the saddle apron every year. All maintenance activities would be conducted in accordance with United States Army Corps of Engineers (USACE) Regional General Permit 90 SPL-2012-00066.

### **Construction Phasing Plan**

As shown in Figure 2 – *Project Area*, construction crews would access the work site from existing roads that are currently used during maintenance activities. All construction equipment would be staged in an upland location above the wetted area. The Proposed Project would be constructed in four phases:

- Phase 1 – Clearing and Remedial Excavation
- Phase 2 – Culvert Installation and Backfill
- Phase 3 – Saddle Apron Embankment and Finish Grading
- Phase 4 – Vegetation Restoration



**Santiago Basin Saddle Repair Project  
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**Phase 1 – Clearing and Remedial Excavation**

Phase 1 would involve clearing the work area of existing vegetation, excavation to create a 1.8:1 slope on either side of the saddle and remedial rough grading to remove loose soil deposits. The loose soil deposits on the existing slopes on the east and west side of the saddle that were left by the erosion damage during storm events would be excavated during the first phase to enhance the safety of excavation activities during Phase 2. Equipment used to complete the clearing and excavation during Phase 1 would include an excavator, scrapers, a bulldozer, on-road and off-road dump trucks, a compactor, water truck, and crew truck. These activities are expected to start in late August to September 2019 and would occur over a three-week period. Field activities and approximate equipment usage for this phase are shown in Table 1 – *Phase 1 - Clearing and Remedial Excavation*.

**Table 1: Phase 1 - Clearing and Remedial Excavation**

<b>Activity</b>	<b>Equipment Description</b>	<b>Equipment Quantity</b>	<b>Hours/Day</b>	<b>Total Days</b>	<b>Hours (Total)</b>	<b>HP Rating</b>
Clearing/Grubbing	Bulldozer	1	8	5	40	250
Clearing/Grubbing	Tracked Excavator	1	8	5	40	200
Clearing/Grubbing	Off-Road Haul Truck	1	8	5	40	350
Clearing/Grubbing	Dump Truck	5	8	1	40	350
Clearing/Grubbing	Water Truck	1	8	5	40	350
Clearing/Grubbing	Work Truck	1	8	5	40	300
Grading	Scraper	2	8	10	160	490
Grading	Bulldozer	1	8	10	80	250
Grading	Compactor	1	8	10	80	200
Grading	Water Truck	1	8	10	80	350
Grading	Work Truck	1	8	10	80	300



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**Phase 2 – Culvert Installation and Backfill**

Phase 2 would involve excavation, placement, and backfill of the concrete box culvert. This culvert would allow the basin elevations to rise and fall together and prevent an elevation differential that leads to damaging erosion over the saddle apron. Equipment for the Phase 2 activities would include; a crane, excavators, wheel loader, compactor, water truck, and crew truck to excavate, place and backfill the culvert. These activities are expected to start late September of 2019 and would occur over a 1-month period. Field activities and approximate equipment usage for this phase are shown in Table 2 – *Phase 2 – Culvert Installation and Backfill*.

**Table 2: Phase 2 – Culvert Installation and Backfill**

<b>Activity</b>	<b>Equipment Description</b>	<b>Equipment Quantity</b>	<b>Hours/Day</b>	<b>Total Days</b>	<b>Hours (Total)</b>	<b>HP Rating</b>
Pipelines	Crane	1	8	10	80	300
Pipelines	Tracked Excavator	2	8	20	320	200
Pipelines	Wheel Loader	1	8	20	160	250
Pipelines	Compactor	1	8	20	160	200
Pipelines	Water Truck	1	8	20	160	350
Pipelines	Work Truck	1	8	20	160	300



**Santiago Basin Saddle Repair Project  
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**Phase 3 – Saddle Apron Embankment and Finish Grading**

Phase 3 would involve placing fill for the saddle apron and finish grading all surfaces within the work area. The saddle apron would create a divider that would prevent erosive water flows between the two basins and create a buttress that would stabilize the slopes on the east and west sides of the saddle. Equipment for Phase 3 would include; scrapers, a bulldozer, compactor, water truck, and crew truck to place and finish the apron. These activities are expected to start in October of 2019 and would occur over a 1-month period. Field activities and approximate equipment usage for this phase are shown in Table 3 – *Phase 3 – Saddle Apron Embankment and Finish Grading*.

**Table 3: Phase 3 – Saddle Apron Embankment and Finish Grading**

Activity	Equipment Description	Equipment Quantity	Hours/Day	Total Days	Hours (Total)	HP Rating
Grading	Scraper	4	8	15	480	490
Grading	Bulldozer	1	8	15	120	250
Grading	Compactor	1	8	15	120	200
Grading	Water Truck	1	8	15	120	350
Grading	Work Truck	1	8	15	120	300

**Phase 4 – Vegetation Restoration**

Phase 4 activities include those required to restore the vegetation removed by construction activities. This work would be completed mostly by hand, and the only equipment anticipated for the work consists of support for the planting crew. These activities are expected to start in November of 2019 and would occur over a 1-month period. Field activities and approximate equipment usage for this phase are shown in Table 4 – *Phase 4 – Vegetation Restoration*.

**Table 4: Phase 4 – Vegetation Restoration**

Activity	Equipment Description	Equipment Quantity	Hours/Day	Total Days	Hours (Total)	HP Rating
Veg Restoration	Water Truck	1	4	10	40	350



## Santiago Basin Saddle Repair Project Initial Study/Mitigated Negative Declaration

### 2.4 Permits and Approvals

The Initial Study/Mitigated Negative Declaration prepared for the Santiago Basin Saddle Repair Project would be used as the supporting CEQA environmental documentation for the following approvals and permits.

- Orange County Water District project approval and related construction contracts and agreements.
- US Army Corps of Engineers Clean Water Act Section 404 Permit
- California Department Fish and Wildlife Section 1600 Stream Bed Alteration Agreement
- Regional Water Quality Control Board 401 Water Quality Certification



**Santiago Basin Saddle Repair Project  
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**SECTION 3.0 ENVIRONMENTAL CHECKLIST**

- I. **Project Title:** Santiago Basin Saddle Repair Project
- II. **Lead Agency Name and Address:** Orange County Water District  
18700 Ward Street  
Fountain Valley, CA 92708
- III. **Project Contact:** Shawn Nevill
- IV. **Location:** City of Orange
- V. **Environmental Determination: On the basis of this initial evaluation, I find that:**

a)	<input type="checkbox"/>	The Proposed Project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.
b)	<input checked="" type="checkbox"/>	<b>Although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.</b>
c)	<input type="checkbox"/>	The Proposed Project MAY have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT is required.
d)	<input type="checkbox"/>	Although the Proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR (EIR No. - ) pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the project, nothing further is required.
e)	<input type="checkbox"/>	Pursuant to Section 15164 of the CEQA Guidelines, an EIR (EIR No. - ) has been prepared earlier and only minor technical changes or additions are necessary to make the previous EIR adequate and these changes do not raise important new issues about the significant effects on the environment. An ADDENDUM to the EIR shall be prepared.
f)	<input type="checkbox"/>	Pursuant to Section 15162 of the CEQA Guidelines, an EIR (EIR No. - ) has been prepared earlier; however, subsequent proposed changes in the project and/or new information of substantial importance will cause one or more significant effects no previously discussed. A SUBSEQUENT EIR shall be prepared.

*Shawn Nevill*

*3-11-19*

**Signature**

**Date**



## Santiago Basin Saddle Repair Project Initial Study/Mitigated Negative Declaration

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I.</b>	<b>AESTHETICS – Would the project:</b>				
a)	Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>II.</b>	<b>AGRICULTURAL AND FOREST RESOURCES:</b> In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model prepared by the California Department of Conservation as an optional model to use in assessing impacts on agricultural farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



**Santiago Basin Saddle Repair Project  
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		<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>III.</b>	<b>AIR QUALITY –Would the project:</b>				
a)	Conflict with or obstruct implementation of the applicable air quality plan or congestion management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d)	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e)	Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>IV.</b>	<b>BIOLOGICAL RESOURCES – Would the project:</b>				
a)	Have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies or regulations or by the California Department of Fish and Game or U.S. Fish and wildlife Services?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local regional plans, policies and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Have a substantially adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



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		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>V.</b>	<b>CULTURAL RESOURCES – Would the project:</b>				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d)	Directly or indirectly disturb or destroy a unique paleontological resource or site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>VI.</b>	<b>GEOLOGY AND SOILS – Would the project:</b>				
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i. Rupture of an unknown earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



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d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>VII.</b>	<b>GREENHOUSE GAS EMISSIONS</b> – Would the project:				
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>VIII.</b>	<b>HAZARDOUS AND HAZARDOUS MATERIALS</b> – Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project the result in a safety hazard for people residing or working within the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>VIX.</b>	<b>HYDROLOGY AND WATER QUALITY – Would the project:</b>				
a)	Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f)	Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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		<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(j)	Expose people or structures to a significant risk of loss, injury or death due to inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>X.</b>	<b>LAND USE AND PLANNING – Would the project:</b>				
a)	Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XI.</b>	<b>MINERAL RESOURCES – Would the project:</b>				
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XII.</b>	<b>NOISE – Would the project result in:</b>				
a)	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



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		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b)	Would the project result in a permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	A substantial temporarily or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d)	For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>XIII.</b>	<b>POPULATION AND HOUSING – Would the project:</b>				
a)	Induce substantial population growth in an area, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XIV.</b>	<b>PUBLIC SERVICES</b>				
a)	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	i. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	ii. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	iii. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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	iv. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	v. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XV.</b>	<b>RECREATION</b>				
a)	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XVI.</b>	<b>TRANSPORTATION/TRAFFIC - Would the project:</b>				
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrians and bicycle paths?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards and travel demand measures, or other standards established by County congestion management agency for designated roads and highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f)	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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	safety of such facilities?				
<b>XVII.</b>	<b>TRIBAL CULTURAL RESOURCES – Would the project:</b>				
	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:				
a)	Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>XVIII.</b>	<b>UTILITIES AND SERVICE SYSTEMS – Would the project:</b>				
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources or new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	Result in the determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the providers existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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f)	Be served by a landfill with sufficient permitted capacity to accommodate the project solid waste disposal need	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g)	Comply with federal, state and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XIX.</b>	<b>MANDATORY FINDINGS OF SIGNIFICANCE – Does the project:</b>				
a)	Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



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**SECTION 4.0 ENVIRONMENTAL ANALYSIS**

The following environmental analysis responds to the environmental issues listed on the OCWD CEQA Checklist Form. The analysis identifies the level of anticipated impact that would occur at the Project Site and incorporates mitigation measures to reduce potentially significant impacts to the environment to a less than significant level.

**4.1 Aesthetics**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**4.1.1 Environmental Analysis**

a) *Would the project have a substantial adverse effect on a scenic vista?*

**No Impact:** Santiago Basin is groundwater basin that has the appearance of a large lake. The Santiago Bike Trail extends along the perimeter of Santiago Basin and provides public views of the basin. Additionally, residential uses within the vicinity of the basin have private views of the Project Site. The City of Orange General Plan Natural Resources Element<sup>1</sup> identifies the nearest viewscape corridor on Jamboree Road and Chapman Avenue, approximately 2.7 miles to the southeast of the Project Site. Due to intervening topography and development, the Project Site is not visible from this viewscape corridor. The Proposed Project does not involve the construction of any structures that would modify existing views of the basin. Implementation of the Proposed Project would require the operation of heavy construction equipment within the basin for the duration of the repair project. The construction activity would occur at the bottom of the basin, between approximately 45 feet and 110 feet below the grade of the surrounding streets and residential uses. It would be unlikely that the construction would be within the viewshed of any public views because the construction activities would primarily

<sup>1</sup>Page NR-37 Figure NR-4: Viewscape Corridors  
<https://www.cityoforange.org/DocumentCenter/View/571/General-Plan---Natural-Resources-Element-PDF>



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occur below the grade of most prominent public viewing locations. The basin typically operates at a low water level during the summer months; dewatering of the basin to low water level during construction of the Proposed Project would have the same visual effect as the normal seasonal operating conditions of the basin. Therefore, there would be no impacts associated with a scenic vista and no mitigation would be required.

*b) Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

**No Impact:** According to the California Department of Transportation Scenic Highways Program<sup>2</sup>, State Route 91 is the closest designated and/or eligible State Scenic Highway to the Project Site. This segment of State Route 91 is a little over 2.5 miles to the Project Site. The distance and intervening topography and structures between State Route 91 and the Project Site would be outside the view shed of a motorist on State Route 91. The Project Site does not contain any scenic resources, rock outcroppings, or historic buildings. Therefore, there would be no impacts associated with scenic resources within a state scenic highway and no mitigation would be required.

*c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?*

**Less than Significant Impact:** The Santiago Basin is an active groundwater recharge facility and has a natural open space visual character. The Proposed Project involves the repair and restoration of the existing saddle between the Blue Diamond Basin and Bond Basin. Upon completion, the proposed box culvert would be underground and the saddle slopes would be restored to their previous condition before they were damaged by storms. Additionally, vegetation within the disturbed area would be restored. During construction, heavy equipment would be operating within the basin, which would be like typical routine maintenance activities that occurs within the basin. The construction activity would occur at the bottom of the basin, between approximately 45 feet and 110 feet below the grade of the surrounding streets and residential uses. It would be unlikely that the construction would be within the viewshed of any public views because the construction activities would primarily occur below the grade of most prominent public viewing locations. The basin typically operates at a low water level during the summer months; dewatering of the basin to low water level during construction of the Proposed Project would have the same visual effect as the normal seasonal operating conditions of the basin. Once construction is complete, the Project Site would be visually similar to its pre-project but with a wider saddle, repaired slopes, and restoration of 0.43 acres of native coastal sage scrub habitat and 0.48 acre of mixed riparian vegetation. Therefore, potential impacts associated with the visual character or quality of the site and its surroundings would be less than significant and no mitigation would be required.

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<sup>2</sup> <http://www.dot.ca.gov/design/lap/livability/scenic-highways/index.html>



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d) *Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

**No Impact:** Implementation of the Proposed Project would not introduce any permanent or temporarily new sources of light into the project area. Therefore, no impacts associated with light and glare would occur and no mitigation would be required.

### **4.1.2 Mitigation Measures**

No mitigation measures associated with impacts to Aesthetics apply to the Proposed Project.

### **4.1.3 Conclusion**

Potential impacts of the Proposed Project associated with Aesthetics would be less than significant and no mitigation would be required.



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**4.2 Agricultural Resources/Forest Resources**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**4.2.1 Environmental Analysis**

a) *Would the project convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agriculture uses?*

**No Impact:** The State of California Farmland Mapping and Monitoring Program<sup>3</sup>, indicates that there is no Prime Farmland, Unique Farmland or Farmland of Statewide Importance on the Project Site. Therefore, no impacts associated with farmland would occur and no mitigation would be required.

b) *Would the project conflict with existing zoning for agriculture use, or a Williamson Contract?*

**No Impact:** The City of Orange Zoning Map<sup>4</sup> shows that the Project Site is zoned for Sand and Gravel land uses. The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline. The Project

<sup>3</sup> <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/ora14.pdf>

<sup>4</sup> <https://www.cityoforange.org/DocumentCenter/View/626/Citywide-Zoning-Map-PDF?bidId=>



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Site is not zoned for agricultural uses, nor is it subject to a Williamson Contract<sup>5</sup>. Therefore, no impacts associated with a conflict with existing zoning for agricultural use, or a Williamson Contract would occur and no mitigation would be required.

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

**No Impact:** The City of Orange Zoning Map shows that the Project Site is zoned for Sand and Gravel uses, and not for forest land, timberland, or timberland zoned Timberland Production. Therefore, no impacts associated with conflict with zoning for timberland uses would occur and no mitigation would be required.

d) *Would the project result in the loss of forest land or conversion of forest land to non-forest use?*

**No Impact:** The City of Orange Zoning Map shows that the Project Site is zoned for Sand and Gravel uses and is currently used as a groundwater recharge basin. The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline. Therefore, no impacts associated with the conversion of the Project Site from existing forest land to non-forest land would occur and no mitigation would be required.

e) *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agriculture use or conversion of forest land to non-forest use?*

**No Impact:** Currently, there is no existing farmland on the Project Site. Therefore, no impacts associated with the loss of any forest land or result in the conversion forest lands to non-forest lands would occur and no mitigation would be required.

### **4.2.2 Mitigation Measures**

No mitigation measures associated with impacts to Agriculture and Forestry Services apply to the Proposed Project.

### **4.2.3 Conclusion**

There would be no impacts of the Proposed Project associated with Agriculture and Forestry Services and no mitigation would be required.

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<sup>5</sup> <https://www.conservation.ca.gov/dlrp/wa>



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**4.3 Air Quality**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan or congestion management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

An Air Quality and Greenhouse Gas Emissions Technical Memorandum was completed to determine potential impacts to air quality associated with the development of the Proposed Project (Appendix B - *Air Quality and Greenhouse Gas Emissions Technical Memorandum, Santiago Basins Saddle Improvement Project*, Vista Environmental, December 2018). The results of the analysis are based on CalEEMod version 2016.3.2.

**4.3.1 Environmental Analysis**

a) *Would the project conflict with or obstruct implementation of the applicable air quality plan or congestion management plan?*

**Less Than Significant Impact:** The SCAQMD 2016 Air Quality Management Plan (AQMP)<sup>6</sup> is the applicable air quality plan for the Proposed Project. The Proposed Project would be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

1. Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

<sup>6</sup><https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>



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2. Whether the project will exceed the assumptions in the AQMP or increments based on the year of project build out and phase.

### Criterion 1 - Increase in the Frequency or Severity of Violations?

Short-term construction air emissions would not result in significant impacts based on SCAQMD regional thresholds of significance or local thresholds of significance. The ongoing operation of the Proposed Project would generate air pollutant emissions that are inconsequential on a regional basis and would not result in significant impacts based on SCAQMD thresholds of significance. The analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the air quality standards. Therefore, potential impacts associated with the frequency or severity of violations would be less than significant and no mitigation would be required. The Proposed Project would be consistent with the first criterion.

### Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the Proposed Project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the Proposed Project are based on the same forecasts as the AQMP. Regional population, housing, and employment projections developed by SCAG, are based in part on the City's General Plan land use designations. These projections form the foundation for the emissions inventory of the AQMP. These demographic trends are incorporated into the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy prepared by SCAG, to determine priority transportation projects and determine vehicle miles traveled within the SCAG region. The Proposed Project does not include the construction of any habitable structures, therefore changes in the population, housing, or employment growth projections due to the Proposed Project do not have the potential to substantially affect SCAG's demographic projections and the assumptions in SCAQMD's AQMP.

*b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

**Less Than Significant Impact:** The potential air emissions from construction and operations of the Proposed Project were analyzed for both regional and local air quality impacts, as well as potential toxic air impacts (Appendix B). The Proposed Project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. The following section calculates the potential air emissions associated with the construction and operations of the Proposed Project and compares the emissions to the SCAQMD standards.

#### *Construction Emissions*

The Proposed Project would require the use of multiple pieces of equipment over four phases of construction. The overall construction of the Proposed Project would take approximately four months. The construction equipment utilized during each phase of construction has been detailed in Section 2.3 – *Project Description*. In order to provide a more precise analysis, *Phase 1: Clearing and Remedial Excavation* was run in the CalEEMod model as two different phases.



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*Construction-Related Regional Impacts*

Construction-related regional emissions from the Proposed Project were calculated using the CalEEMod model. Table 5 - *Construction-Related Regional Criteria Pollutant Emissions*, shows that the worst-case summer or winter daily construction-related criteria pollutant emissions would not exceed the regional emissions thresholds during any of the construction phases for the Proposed Project. Therefore, potential impacts to regional air quality from construction would occur and no mitigation would be required.

**Table 5 - Construction-Related Regional Criteria Pollutant Emissions**

Activity	Pollutant Emissions (pounds/day) <sup>1</sup>					
	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM10	PM2.5
<b>Phase 1A – Clearing</b>						
Onsite	6.27	64.53	33.28	0.11	4.83	3.57
Offsite	0.12	0.07	0.89	0.00	0.28	0.08
<b>Total</b>	<b>6.39</b>	<b>64.60</b>	<b>34.17</b>	<b>0.11</b>	<b>5.11</b>	<b>3.65</b>
<b>Phase 1B – Excavation</b>						
Onsite	5.15	58.42	32.41	0.07	5.55	3.56
Offsite	0.07	0.04	0.54	0.00	0.17	0.05
<b>Total</b>	<b>5.22</b>	<b>58.46</b>	<b>32.95</b>	<b>0.07</b>	<b>5.72</b>	<b>3.61</b>
<b>Phase 2 – Culvert Installation and Backfill</b>						
Onsite	2.68	30.29	16.16	0.05	1.07	0.99
Offsite	0.06	0.48	0.44	0.00	0.13	0.04
<b>Total</b>	<b>2.74</b>	<b>30.77</b>	<b>16.60</b>	<b>0.05</b>	<b>1.20</b>	<b>1.03</b>
<b>Phase 3 – Saddle Apron Embankment and Finish Grading</b>						
Onsite	7.99	92.81	53.85	0.11	7.72	4.89
Offsite	0.09	0.06	0.71	0.00	0.23	0.06
<b>Total</b>	<b>8.08</b>	<b>92.87</b>	<b>54.56</b>	<b>0.11</b>	<b>7.95</b>	<b>4.95</b>



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Activity	Pollutant Emissions (pounds/day) <sup>1</sup>					
	VOC	NOx	CO	SO <sub>2</sub>	PM10	PM2.5
<b>Phase 4 – Vegetation Restoration</b>						
Onsite	0.31	3.13	1.74	0.01	0.11	0.10
Offsite	0.00	0.00	0.01	0.00	0.00	0.00
<b>Total</b>	<b>0.31</b>	<b>3.13</b>	<b>1.75</b>	<b>0.01</b>	<b>0.11</b>	<b>0.10</b>
<b>SCQAMD Thresholds</b>	<b>75</b>	<b>100</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>55</b>
Exceeds Threshold?	No	No	No	No	No	No

Notes:

<sup>1</sup> Based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.

<sup>2</sup> Onsite emissions from equipment not operated on public roads.

<sup>3</sup> Offsite emissions from vehicles operating on public roads.

Source: CalEEMod Version 2016.3.2.



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### *Construction-Related Local Impacts*

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the vicinity of the Project Site, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin.

The local air quality emissions from construction were analyzed through utilizing the methodology described in *Localized Significance Threshold Methodology* (LST Methodology), prepared by SCAQMD, revised October 2009. The LST Methodology found the primary criteria pollutant emissions of concern are NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>. In order to determine if any of these pollutants require a detailed analysis of the local air quality impacts, each phase of construction was screened using the SCAQMD's Mass Rate LST Look-up Tables. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily onsite emissions of CO, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> from the Proposed Project could result in a significant impact to the local air quality. Table 6 - *Construction-Related Local Criteria Pollutant Emissions* shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds during the construction phases of the Proposed Project. Therefore, potential impacts associated with local air quality during construction would be less than significant and no mitigation would be required.

**Table 6 - Construction-Related Local Criteria Pollutant Emissions**

Construction Phase	Pollutant Emissions (pounds/day) <sup>1</sup>			
	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
Phase 1A – Clearing	64.53	33.28	4.83	3.57
Phase 1B – Remedial Excavation	58.42	32.41	5.55	3.56
Phase 2 – Culvert Installation and Backfill	30.29	16.16	1.07	0.99
Phase 3 – Saddle Apron Embankment and Finish Grading	92.81	53.85	7.72	4.89
Phase 4 – Vegetation Restoration	3.13	1.74	0.11	0.11
SCAQMD Thresholds <sup>2</sup>	<b>167</b>	<b>1,734</b>	<b>39</b>	<b>9</b>
Exceeds Threshold?	No	No	No	No

Notes:

<sup>1</sup> Based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.

<sup>2</sup> The nearest sensitive receptors are residents at the single-family homes located as near as 210 feet (64 meters) southeast of the project site. In order to provide a conservative analysis, the 50 meter thresholds were utilized.

Source: Calculated from SCAQMD's Mass Rate Look-up Tables for five acres in Air Monitoring Area 17, Central Orange County.



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### *Operational Emissions*

The proposed saddle repair activities would consist of four phases of construction that would be completed over an approximately four-month period. Annually, OCWD would dewater the basin to inspect the condition of the saddle and to remove any debris or trash that might accumulate along the saddle apron. No changes are proposed to the annual maintenance activities that currently occur within the Santiago Basins and all maintenance activities would be conducted in accordance with Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities Streambed Alteration Agreement 1600-2012-0013-R5. In addition, maintenance activities would primarily be done by hand and would require only minimal use of off-road equipment. Therefore, no impacts associated with operational emissions would occur and no mitigation would be required.

c) *Would the project 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

**Less Than Significant Impact:** The Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Cumulative projects include proposed or approved local development as well as general ambient growth within the project area. The greatest source of emissions is from mobile sources, which travel throughout the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. Accordingly, the cumulative analysis for the Proposed Project's air quality must be generic by nature. The project area is out of attainment for ozone and PM10 and PM2.5 particulate matter. In accordance with CEQA Guidelines Section 15130(b), this analysis of cumulative impacts incorporates a three-tiered approach to assess cumulative air quality impacts.

- Consistency with the SCAQMD project specific thresholds for construction and operations;
- Project consistency with existing air quality plans; and
- Assessment of the cumulative health effects of the pollutants.

### ***Consistency with Project Specific Thresholds***

#### *Construction-Related Impacts*

The Project Site is in the South Coast Air Basin, which is currently designated by the EPA for federal standards as a non-attainment area for ozone and PM2.5 and by CARB for the state standards as a non-attainment area for ozone, PM10, and PM2.5. The regional ozone, PM10, and PM2.5 emissions associated with construction of the Proposed Project have been calculated in Section 4.3(b). The analysis found that development of the Proposed Project would result in less than significant regional emissions of VOC and NOx (ozone precursors),



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PM10, and PM2.5 during construction. Therefore, potential cumulative impacts associated with construction would be less than significant and no mitigation would be required.

### *Operational-Related Impacts*

The greatest cumulative operational impact on the air quality to the Air Basin would be the incremental addition of pollutants mainly from increased traffic from residential, commercial, and industrial development. In accordance with SCAQMD methodology, projects that do not exceed SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. Operational emissions for ozone, PM10, and PM2.5 emissions created from the on-going operations of the Proposed Project were not calculated, as maintenance activities would mostly be done by hand and involve minimal use of off-road equipment. Therefore, potential cumulative impacts associated with long-term emissions would be less than significant and no mitigation would be required.

### *Consistency with Air Quality Plans*

As discussed in Section 4.3(a), the Proposed Project does not include the construction of any habitable structures, therefore changes in the population, housing, or employment growth projections due to the Proposed Project do not have the potential to substantially affect SCAG's demographic projections and the assumptions in SCAQMD's AQMP. Therefore, no impact associated with an inconsistency with the current land use designations with respect to the regional forecasts utilized by the AQMPs would occur and no mitigation would be required.

### *Cumulative Health Impacts*

The Air Basin is designated as nonattainment for ozone, PM10, and PM2.5, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (elderly, children, and the sick). Therefore, when the concentrations of those pollutants exceed the standard, it is likely that some sensitive individuals in the population would experience health effects. The regional analysis detailed in Section 4.3(b) found that the Proposed Project would not exceed the SCAQMD regional significance thresholds for VOC and NO<sub>x</sub> (ozone precursors), PM10 and PM2.5. Therefore, potential cumulative health impacts would be less than significant and no mitigation would be required.

#### *d) Would the project expose sensitive receptors to substantial pollutant concentrations?*

**No Impact:** The Proposed Project would not expose sensitive receptors to substantial pollutant concentrations. The nearest sensitive receptors are residents at the single-family homes located as near as 210 feet southeast of the Project Site. The nearest school is Eldorado Emerson Private School, located approximately 0.6 miles south of the Project Site. The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the Project Site, which may expose sensitive receptors to substantial concentrations, have been calculated in Section 4.3(b) and would not exceed any air quality thresholds. Therefore, no impacts associated with exposure to sensitive receptors would occur and no mitigation would be required.



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e) *Would the project create objectionable odors affecting a substantial number of people?*

**No Impact:** The Proposed Project would not create objectionable odors affecting a substantial number of people. Potential odor impacts have been analyzed separately for construction and operations.

### ***Construction-Related Odor Impacts***

Potential sources that may emit odors during construction activities include the operation of construction equipment outlined in Section 2.3 – *Project Description*. The objectionable odors that may be produced during the construction process would be temporarily and would not likely be noticeable for extended periods of time beyond the Project Site's boundaries. Due to the transitory nature of construction odors, no impacts associated with odors would occur and no mitigation would be required.

### ***Operations-Related Odor Impacts***

Annually, OCWD would dewater the basin to inspect the condition of the saddle and to remove any debris or trash that might accumulate along the saddle apron. No changes are proposed to the annual maintenance activities that currently occur within the Santiago Basins and all maintenance activities would be conducted in accordance with Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities Streambed Alteration Agreement 1600-2012-0013-R5. Maintenance activities would mostly be done by hand and involve minimal use of off-road equipment. Therefore, no impacts associated with the objectionable odors due to operation of the Proposed Project would occur and no mitigation would be required.

### ***4.3.2 Mitigation Measures***

No mitigation measures associated with impacts to Air Quality apply to the Proposed Project.

### ***4.3.3 Conclusion***

Potential impacts of the Proposed Project associated with Air Quality would be less than significant and no mitigation would be required.



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**4.4 Biological Resources**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies or regulations or by the California Department of Fish and Game or U.S. Fish and wildlife Services?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local regional plans, policies and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantially adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

A Biological Assessment was completed to determine potential impacts to biological resources associated with the development of the Proposed Project (Appendix C – *Project Description and Biological Assessment for Orange County Water District Santiago Basins Saddle Repair Project*, Orange County Water District, November 2018).



**4.4.1 Environmental Analysis**

**Existing Conditions**

***Sensitive Species***

The OCWD staff biologist conducted a database search of special status plant and wildlife species listed in the California Native Plant Society Online Survey of Rare Plants, U.S. Department of Interior Information Planning and Conservation System Database and the California Department of Fish and Game Natural Diversity Data Base for the Orange U.S.G.S. Quadrangle to determine the potential for special status plant and wildlife species to occur on the Project Site. Subsequent to the database search, the OCWD staff biologist conducted a field survey of the Project Site to determine the presence of any special status species or habitat within the study area. Based on the database search and Project Site survey, the potential for the species to occur on the Project Site was determined. A complete listing of special status plant and wildlife species with potential to occur within the study area is shown in Table 7 - *Sensitive Species List*. The determination regarding the potential occurrence of the species was based on the following criteria:

**Present:** The species is commonly observed or observed within the study area within the last year.

**High:** The study area supports suitable habitat and the species has been observed within last 2 years.

**Moderate:** The study area supports suitable habitat and the species has not been observed within last 2 years.

**Low:** The study area lacks suitable habitat for the species or species has not been observed for over 5 years.

**Table 7 - Sensitive Species List**

	USFWS	CDFG	CNPS	General Habitat	Project Site Potential Occurrence
<b>Plants</b>					
Chaparral sand verbena ( <i>Abronia villosa</i> var. <i>aurita</i> )	NL	NL	1B	Coastal Bluff Scrub & Chaparral	Low Site contains suitable habitat. Species not identified onsite. Last occurrence 1924 along Santa Ana River. Species believed to be extirpated in Orange County.
Plummers mariposa lilly ( <i>Calochortus plummerae</i> )	NL	NL	1B	Coastal Bluff Scrub & Chaparral	Low Site contains suitable habitat. Species not



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	USFWS	CDFG	CNPS	General Habitat	Project Site Potential Occurrence
					observed onsite. Species last occurrence 2008 Peters Canyon Regional Park, approximately 2.89 miles from site.
Southern tarplant ( <i>Centromadia parryi</i> <i>ssp. Australis</i> )	NL	NL	1B	Vernal pools, Foothill Grasslands	Low Site lacks suitable habitat.
Many-stemmed dudleya ( <i>Dudleya multicaulis</i> )	NL	NL	1B	Coastal Bluff Scrub	Low Site contains suitable habitat. Species not observed onsite. Species last occurrence 2008, 5.5 miles from site.
Santa Ana River woollystar ( <i>Eriastrum densifolium ssp. Sanctorum</i> )	E	E	1B	Sandy Soils on River Floodplain	Low Site lacks suitable habitat.
<b>Reptiles</b>					
Coast horned lizard ( <i>Phrynosoma coronatum</i> )	NL	SSC	NL	Low lands Along Sandy Washes	Low Site lacks suitable habitat.
Orange-throat whiptail ( <i>Aspidoscelis hyperythra</i> )	NL	SSC	NL	Coastal Scrub	Low Site contains suitable habitat. Species last occurrence 2000, approximately 2 miles from SR 91 at Imperial Highway.
<b>Birds</b>					
Coastal cactus wren ( <i>Campylorhynchus brunneicapillus sandiegensis</i> )	NL	SSC	NL	Coastal Sage Scrub. Requires tall opuntia cactus for nesting and roosting.	Low Site does not contain tall opuntia cactus and does not provide suitable habitat.
Least Bell's Vireo ( <i>Vireo bellii pusillus</i> )	E	E	NL	Riparian Vegetation Near Water or	Present Species reported within the last year.



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	USFWS	CDFG	CNPS	General Habitat	Project Site Potential Occurrence
				Along Dry River Bottoms	
Coastal California Gnatcatcher ( <i>Polioptila californica</i> )	E	E	NL	Coastal Sage Scrub	Present Species reported within last year.
Coopers Hawk ( <i>Accipiter cooperii</i> )	NL	WL	NL	Woodlands, Canyon Bottoms, River Floodplains	High Site contains suitable habitat. Species observed within last five years.
White-tailed kite ( <i>Elanus leucurus</i> )	NL	FP	NL	Rolling foothills, valley margins, river bottoms and marshes near woodlands	High Site contains suitable habitat. Species observed within last five years.
<b>Mammals</b>					
Mexican long-tongued bat ( <i>Choeronycteris Mexicana</i> )	NL	SSC	NL	Well Lighted Caves	Low Site lacks suitable habitat.
Western mastiff bat ( <i>Eumops perotis californicus</i> )	NL	SSC	NL	Cliff Faces	Low Site lacks suitable habitat.
<b>Aquatics</b>					
Santa Ana Sucker ( <i>Catostomus santaanae</i> )	T	SSC	NL	Cool, Clear Streams, Rivers, rocky Bottom	Low Site lacks suitable habitat.

Source: Table 6 – Sensitive Species List, Appendix C – Project Description and Biological Assessment for Orange County Water District Santiago Basins Saddle Repair Project, Orange County Water District, November 2018, Page 11

<p><b>Legend</b>          NL-Not Listed  <u><b>Federal Endangered Species Act</b></u>          E- Endangered          T-Threatened          SSC- Special Species of Concern          C-Candidate for Listing  <u><b>California Endangered Species Act/California Department Fish Game</b></u></p>	<p><u><b>California Endangered Species Act/California Department Fish Wildlife</b></u>          FP-Fully Protected          E-Endangered          T-Threatened          SSC-Special Species of Concern          WL-Watch List</p>	<p><u><b>California Native Plant Society CNPS</b></u>          1A-Plants presumed extinct in California          1B- Plants rare, threatened, or endangered in California and elsewhere          2-Plants rare, threatened, or endangered in California but more common elsewhere          3-Plants about which we need more review          4-Plants of limited distribution          Source: California Department Fish and Game Natural Diversity Database</p>
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***Critical Habitat***

The Project Site is not located on lands that are designated as Critical Habitat.

**Federal and State Jurisdictional Aquatic Resources**

**Waters of the United States**

A water body is considered Waters of the U.S. if it is: (1) traditional navigable water (TNW); (2) wetlands adjacent to a TNW; (3) non-navigable tributaries of TNW that have perennial or seasonal flow of water; and (4) wetlands that are adjacent to non-navigable tributaries of TNW that have perennial or seasonal flow of water.

Santiago Creek drains into Santiago Basin. Santiago Creek is a seasonal water body that drains into the Santa Ana River, which ultimately drains into the Pacific Ocean. The Pacific Ocean is navigable water and therefore the Santiago Creek is a tributary to navigable water and classified as Waters of the U.S. The Federal jurisdiction extends to the ordinary high-water mark and to adjacent wetland vegetation. Table 8 - *Existing Waters of U.S./State (Acres)* identifies the amount of Waters of the U.S. on the Project Site.

**Waters of the State**

According to the State Water Code, Waters of the State are defined as any surface water body, groundwater or wetlands within the boundary of the State. The State jurisdiction extends to the top of the slope of the water body and adjacent wetland vegetation. Table 8 identifies the amount of Waters of the State on the Project Site.

**Wetland Waters of the U.S./State**

Wetland Waters are a subset of jurisdictional Waters of the U.S. and the State. Generally, wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. Presently, there is no single definition of wetlands recognized by the state and the federal government. However, the state and federal definitions do share common terms and concepts. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically the land supports hydrophytes, (2) the substrate is predominantly undrained soil, and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year. Table 8 identifies the amount of wetlands Waters of the U.S./State on the Project Site.

**Table 8 - Existing Waters of U.S./State (Acres)**

Waters of the State	Wetland Waters of the State	Waters of US	Wetland Waters of US
3.44	0.48	3.44	0.48



### **Wildlife Movement Corridors**

Corridors and linkages facilitate regional wildlife movement and are generally centered near water ways, ridgelines, riparian corridors, flood control channels, contiguous habitat and upland habitat. Different types of wildlife movement corridors provide specific types of functions depending on the landscape of the area and habitat conditions. Santiago Creek provides wildlife movement from the Santa Ana Mountains to Santiago Basins. At Santiago Basins the Santiago Creek continues downstream to where it joins the Santa Ana River at the Riverview Golf Course. Between Santiago Basin and the Riverview Golf Course, Santiago Creek meanders through patches of open space that provides habitat for some wildlife. However, downstream of the golf course there are limited amounts of open space and Santa Ana River transitions into a lined flood control channel with limited habitat and access and its ability to function as wildlife corridor is severely diminished.

- a) *Would the project have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Services?*

### **Less Than Significant with Mitigation Incorporated:**

#### ***Sensitive Plant Species***

A search of CDFW California Natural Diversity Database and California Native Plant Society Database in conjunction with site reconnaissance of the project area has determined that there would be low potential for sensitive plant species to occur on the Project Site, as shown in Figure 5 – *Vegetation Communities*. Therefore, no impacts to sensitive plant species would occur.

#### ***Sensitive Wildlife Species***

As identified in Table 7 – *Sensitive Species List*, the Coast horned lizard, Orange-throat whiptail, Coastal cactus wren, Mexican long-tongued bat, Western mastiff bat, and Santa Ana Sucker have a low probability of occurring on the Project Site due to lack of suitable habitat. Therefore, potential impacts associated with these sensitive wildlife species would be less than significant and no mitigation would be required.

#### **Coastal California Gnatcatcher (Gnatcatcher)**

The upland areas in Santiago Basin contain pockets of coastal sage scrub. The Gnatcatcher both inhabits and nests in coastal sage scrub habitat. As shown in Figure 6 – *2017 Gnatcatcher and Vireo Territories*, there are no known Gnatcatcher territories on the Project Site. Therefore, no direct construction impacts would occur. However, there is potential for direct and indirect impacts to gnatcatchers that may nest on the Project Site due to construction noise. MM BIO-1 would avoid or reduce the potential for direct or indirect construction noise impacts by requiring that all vegetation removal and clearing activities and the operation of heavy equipment shall be conducted between September 16 and March 15, outside of the bird nesting season. Vegetation removal and operation of heavy equipment shall be permitted to



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begin in the month of August provided that a preconstruction survey is conducted within the area of disturbance by a qualified biologist prior to any vegetation or ground disturbance and the qualified biologist determines that no nesting birds are present within 500 feet of the activities. Therefore, potential direct and indirect construction-related impacts associated with the Gnatcatcher would be less than significant with implementation of MM BIO-1.

Implementation of the Proposed Project would remove 0.30 acre of coastal sage habitat that is suitable for the Coastal California Gnatcatcher. The amount of coastal sage scrub habitat that would be removed would be minimal compared to the overall amount of coastal sage habitat that is provided at Santiago Basin. In order to reduce the potential impacts of permanent removal of coastal sage scrub habitat, MM BIO-2 would require that following the completion of the saddle repair/restoration activities, OCWD shall plant and permanently maintain the restoration of 0.43 acres of native coastal sage scrub habitat within the portions of the Project Site disturbed by the Proposed Project. This would represent 0.13 acre increase of native upland habitat over the current condition. Therefore, potential impacts associated with permanent loss of coastal sage scrub habitat would be less than significant with implementation of MM BIO-2.

### **Least Bell's Vireo (Vireo)**

The Vireo occur in riparian habitats along watercourses that contain dense growth of willow trees, cottonwood trees, mulefat and other dense riparian vegetation. At Santiago Basin, the riparian habitat is fragmented and mixed with high amounts of non-native vegetation. Even though the quality of the habitat is marginal, Vireos could be present on the Project Site. As shown in Figure 6 – *2017 Gnatcatcher and Vireo Territories*, a single Vireo territory was identified within the Proposed Project limits of grading in 2017.

Construction activities for the Proposed Project would temporarily impact 0.48 acres of mixed riparian vegetation and temporarily displace the existing Vireo territory. Potential direct and indirect impacts to Vireos that may nest on the Project Site would occur due to habitat removal and construction noise. MM BIO-1 would avoid or reduce the potential for direct or indirect construction impacts by requiring that all vegetation removal and clearing activities and the operation of heavy equipment shall be conducted between September 16 and March 15, outside of the bird nesting season. Vegetation removal and operation of heavy equipment shall be permitted to begin in the month of August provided that a preconstruction survey is conducted within the area of disturbance by a qualified biologist prior to any vegetation or ground disturbance and the qualified biologist determines that no nesting birds are present within 500 feet of the activities. Therefore, potential direct and indirect construction-related impacts associated with the Vireo would be less than significant with implementation of MM BIO-1.

Implementation of the Proposed Project would remove 0.48 acre of mixed riparian habitat that is suitable for the Vireo, which would be minimal compared to the overall amount of riparian habitat in Santiago Basin. In order to reduce the potential impacts of permanent removal of riparian habitat, MM BIO-2 would require that following the completion of the saddle repair/restoration activities, OCWD shall plant and permanently maintain the restoration of



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0.48 acre of mixed riparian vegetation within the portions of the Project Site disturbed by the Proposed Project. Assuming, that approximately 50% of the existing mixed riparian habitat is non-native, the proposed restoration would represent 0.24 acre increase of native riparian habitat over the current condition. Therefore, potential impacts associated with permanent loss of riparian habitat would be less than significant with implementation of MM BIO-2.

### **Cooper Hawk, White-Tailed Kite**

The Cooper Hawk and the White-Tailed Kite have been observed flying above Santiago Basin. Both species are known to occupy and nest in trees. However, no nesting sites have been reported in Santiago Basin. The Proposed Project would remove a handful of specimen native trees from the Project Site. The number of removed trees would be relatively small compared to the overall number of trees that are present at Santiago Basin. MM BIO-1 would avoid or reduce the potential for direct or indirect construction noise impacts by requiring that all vegetation removal and clearing activities and the operation of heavy equipment shall be conducted between September 16 and March 15, outside of the bird nesting season. Vegetation removal and operation of heavy equipment shall be permitted to begin in the month of August provided that a preconstruction survey is conducted within the area of disturbance by a qualified biologist prior to any vegetation or ground disturbance and the qualified biologist determines that no nesting birds are present within 500 feet of the activities. Additionally, MM BIO-3 would require that prior to the removal of any tree from the Project Site, each tree would be inspected to confirm if unoccupied nests are present. If unoccupied nests are encountered, they would be relocated and if not feasible to be relocated, a substitute nest site would be created and located outside of the construction activity impact area. Therefore, potential impacts associated with the Cooper Hawk and the White-Tailed Kite would be less than significant with implementation of MM BIO-1 and BIO-3.

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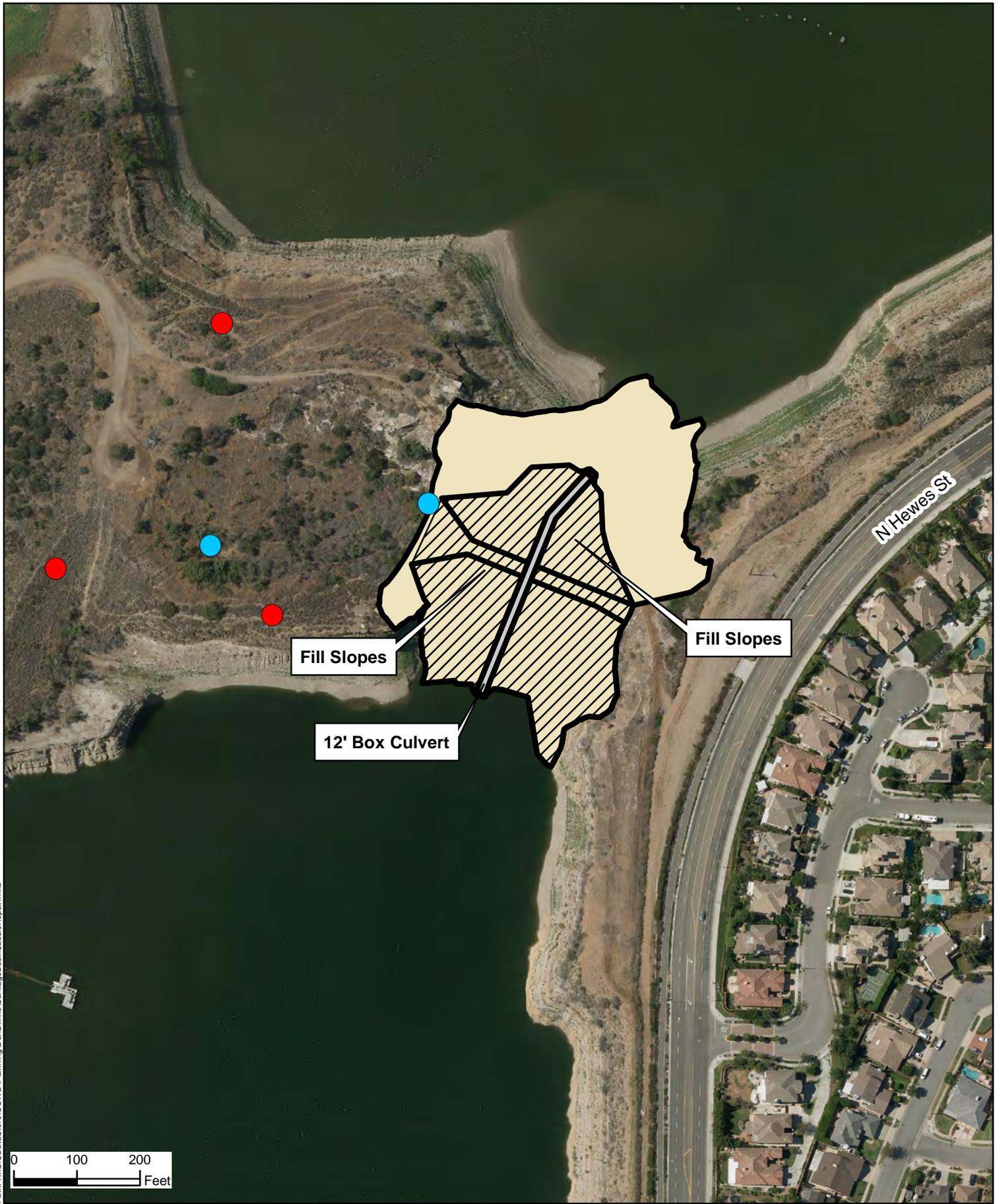
- |                          |                   |                   |                                  |
|--------------------------|-------------------|-------------------|----------------------------------|
| Limits of Grading        | <b>Vegetation</b> | Riparian Mix      | Specimen Tree Protected in Place |
| Ordinary High Water Mark | Bare              | Upland Native     | Specimen Tree Removed            |
| PA : Planning Area       | Open Water        | Upland Non-Native |                                  |



### Santiago Basins Saddle Repair Project Vegetation Communities

Figure 5

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-  Vireo territory 2017
-  Gnatcatcher territory
-  Limits of Grading

Santiago Basins Saddle Repair Project  
2017 Gnatcatcher & Vireo Territories

Figure 6



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

**Less Than Significant with Mitigation Incorporated:** As shown in Table 9 – *Project Impact Vegetation Communities (Acres)*, implementation of the Proposed Project would temporarily impact 0.30 acres of upland native vegetation, 0.13 acres of non-native upland vegetation, and 0.48 acres of mixed riparian vegetation. The native riparian and native upland vegetation at the Project Site would be considered a sensitive vegetation community and the permanent loss of it would be considered a significant impact.

With the implementation of MM BIO-2, following the completion of grading and slope repair/construction activities, the disturbed areas on the Project Site would be restored with native upland coastal sage scrub and native riparian vegetation. The Project Site would be managed by OCWD to prevent the re-establishment of non-native vegetation. Once the proposed restoration activities are implemented, there would be a net increase of 0.13 acres of native upland coastal sage scrub vegetation and 0.24 acres of native riparian vegetation. Therefore, potential impacts associated with sensitive vegetation communities would be less than significant with implementation of MM BIO-2.

Construction activities for the Proposed Project could also result in potentially significant indirect impacts to sensitive vegetation communities associated with anthropogenic disturbances, colonization of invasive weeds, disturbances and generation of fugitive dust from construction equipment. Implementation of MMs BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10 would require that the Construction Contractor and/or OCWD Project Manager take measures to properly manage the construction site to avoid potential impacts to sensitive vegetation communities. Therefore, potential impacts associated with adverse effects on sensitive vegetation communities would be less than significant with implementation of MMs BIO-4 through BIO-10.

**Table 9 - Project Impact Vegetation Communities (Acres)**

Upland Native	Upland Non-Native	Mix Riparian	Open Water
0.30	0.13	0.48	3.44

***Specimen Trees***

The west facing slope of the Project Site contains two specimen Black Willow trees. During grading activities, the trees would be avoided and left in place. However, trimming of a few branches would be required to allow for the access of heavy equipment, which would have a nominal environmental impact. On the east face slope there are five specimen Black Willow trees within the limits of grading on the Project Site. Due to extensive slope failures on the east facing slope, slope repair would require the removal of all five Black Willow trees. The implementation of MM BIO-11 would require that OCWD plant 15 Black Willow trees at the upper edge of the ordinary high-water mark to replace the five Black Willow trees to be



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removed at a 3:1 replacement ratio. Therefore, potential impacts associated with removal of native specimen trees would be less than significant with implementation of MM BIO-11.

c) *Would the project have a substantially adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling hydrological interruption, or other means?*

**Less Than Significant with Mitigation Incorporated:** A wetland assessment was conducted at the Project Site in accordance with the Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual Arid Region West. For planning purposes, the Project Site has been divided into 7 planning areas, as shown in Table 10 – *Project Impacts Jurisdictional Areas of U.S./State*. At each planning area, a three-parameter approach was used to identify Waters of the U.S. and State and Wetland Waters of the U.S. and State. These three parameters include; (1) the presence of wetland vegetation, (2) the presence of wetland hydrology and (3) the presence of hydric soils.

- **Vegetation:** The project area contains .92 acres of mixed native and non-native riparian vegetation; Coast Live Oak, Castor Bean, Cocklebur, Toyon, Flowering Tobacco and Mexican Elderberry. These riparian species are recognized as wetland plant indicators.
- **Hydrology:** The hydrology is largely from inundation from the lowering and rising of the water level in Santiago Basin. The ordinary high-water mark and jurisdiction area on the Project Site is shown on Figure 3. The periodic inundation of vegetation indicates the presence of wetland hydrology.
- **Hydric Soils:** Santiago Basin largely consists of Metz Sandy Loam soil which is classified as hydric soil.



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**Table 10 - Project Impacts Jurisdictional Areas Of U.S. /State**

Planning Area	Temporary Impacts Waters of State	Permanent Impacts Waters of State	Temporary Impacts Wetland Waters of State	Permanent Impacts Wetland Waters of State	Temporary Impacts Waters of U.S.	Permanent Impacts Waters of U.S.	Temporary Impacts Wetland Waters of U.S.	Permanent Impacts Wetland Waters of U.S.
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.19	0.0	0.0	0.0	0.19	0.0
4	3.44	0.0	0.0	0.0	3.44	0.0	0.0	0.0
5	0.0	0.0	0.27	0.0	0.0	0.0	0.27	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.02	0.0	0.0	0.0	0.02	0.0
<b>Total</b>	<b>3.44</b>	<b>0.0</b>	<b>0.48</b>	<b>0.0</b>	<b>3.44</b>	<b>0.0</b>	<b>0.48</b>	<b>0.0</b>

***Waters of U.S./State***

As shown in Table 10, implementation of the Proposed Project would not result in the permanent loss of Waters of U.S./State. The Proposed Project would temporarily impact 4.41 acres of Waters of U.S./State, which would occur from excavation activities to remove and replace the underground box culvert and the reconfiguration of the existing slopes of the saddle located below the ordinary high-water level. All excavated areas would be back-filled from existing material at Santiago Basin. No permanent fill would be discharged, or permanent above ground structures would be built. Once the grading activity is completed, the temporarily disturbed areas would be re-contoured to their pre-project condition to the extent possible, but with a wider saddle, repaired slopes, and restoration of 0.43 acres of native coastal sage scrub habitat and 0.48 acre of mixed riparian vegetation. Therefore, no permanent net loss of Waters of the U.S./State would occur and no mitigation would be required.

***Wetland Waters of U.S./State***

As shown in Table 10, implementation of the Proposed Project would not result in the permanent loss of Wetland Waters of the U.S./State. The Proposed Project would temporarily impact 0.48 acres of mixed riparian Wetland Waters of the U.S./State which would occur from the recontouring of the side slopes of the saddle. Impacts to Wetland Waters of the U.S./State would be temporary because MM BIO-2 would require that following the completion of the saddle repair/restoration activities, OCWD shall plant and permanently maintain the



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restoration of 0.48 acre of mixed riparian vegetation within the portions of the Project Site disturbed by the Proposed Project. Therefore, potential impacts to Wetland Waters of U.S./State would be less than significant with implementation of MM BIO-2.

*d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

**Less Than Significant with Mitigation Incorporated:** Santiago Creek is the only wildlife movement corridor within the vicinity of the Project Site. Project activities would not occur near Santiago Creek and would not have any impact on wildlife movement along the creek. Additionally, project-related activities would occur during the day and would not interfere with any wildlife movement activity that occurs at night. All vegetation removal activities would occur outside of the nesting season to avoid impacts to nesting migratory birds. Therefore, potential impacts to wildlife movement and nesting migratory birds would be less than significant with implementation of MM BIO-1 and MM BIO-3.

*e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

**No Impact:** The Project Site is not subject to any local policies providing for the protection of biological resources. The Proposed Project would comply with all federal and state policies providing for the protection of biological resources. Therefore, no impacts associated with local policies or ordinances protecting biological resources would occur and no mitigation would be required.

*f) Would the project be in conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

**No Impact:** The Project Site is not located on lands that are included in a Habitat Conservation Plan or Natural Community Conservation Plan. Therefore, no impacts associated with an adopted habitat conservation plan would occur and no mitigation would be required.

### **4.4.2 Mitigation Measures**

**BIO-1:** All vegetation removing and clearing activities and the operation of heavy equipment shall be conducted between September 16 and March 15, outside of the bird nesting season. Vegetation removal and operation of heavy equipment shall be permitted to begin in the month of August provided that a preconstruction survey is conducted within the area of disturbance by a qualified biologist prior to any vegetation or ground disturbance and the qualified biologist determines that no nesting birds are present within 500 feet of the activities.

**BIO-2:** Following the completion of the saddle repair/restoration activities, OCWD shall plant and permanently maintain the restoration of 0.43 acres of native coastal sage scrub habitat and 0.48 acre of mixed riparian vegetation within the portions of the Project Site disturbed by the Proposed Project.



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**BIO-3:** Prior to the removal of any vegetation within the Project Site, vegetation and trees planned for removal shall be inspected to determine if raptor nests are present. If raptor nests are present, the nests shall either be re-located and if not feasible to be relocated, a new substitute nest shall be created and located outside of the construction area.

**BIO-4:** During all construction activities, the Construction Contractor and/or OCWD Project Manager shall ensure that construction equipment and personnel shall utilize designated access roads to access the work area.

**BIO-5:** Prior to removal of vegetation, the Construction Contractor and/or OCWD Project Manager access routes in and out of the construction work area shall be flagged to adequately demarcate the boundary of the access routes.

**BIO-6:** During all construction activities, the Construction Contractor and/or OCWD Project Manager shall ensure that exposed soils shall be watered as needed to control dust on a continual basis.

**BIO-7:** During all construction activities, the Construction Contractor and/or OCWD Project Manager shall ensure that all construction, site disturbance and vegetation removal would occur within the delineated construction boundaries.

**BIO-8:** During all construction activities, the Construction Contractor and/or OCWD Construction Official shall ensure that the storage of equipment and materials and the temporarily stockpiling of soil shall be located within designated staging areas outside of habitat areas.

**BIO-9:** During all construction activities, the Project Manager and/or OCWD Project Manager shall ensure that portions of the Project Site that are outside of the disturbance area shall remain undisturbed and shall be clearly flagged or otherwise delineated prior to construction activities. The OCWD Project Manager (or their designee) shall be onsite to monitor all activities that result in the removal of sediment or vegetation to verify that such activities shall not encroach into the delineated areas.

**BIO-10:** During construction, adjacent vegetation would be monitored by a qualified OCWD biologist for signs of plant stress. In the event that such plant stress is detected, the qualified OCWD biologist shall implement corrective action based on the context and severity of the plant stress, which may include the alteration of access routes, installation of construction barriers, or other similar modifications to the construction activities at the discretion of the qualified biologist.

**BIO-11:** Following the completion of the saddle repair/restoration activities, OCWD shall plant and permanently maintain 15 Black Willow trees at the upper edge of the ordinary high-water mark to replace the five Black Willow trees to be removed at a 3:1 replacement ratio.

### **4.4.3 Conclusion**

Potential impacts of the Proposed Project associated with Biological Resources would be less than significant with implementation of MM BIO-1 through MM BIO-11.



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**4.5 Cultural Resources**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Directly or indirectly disturb or destroy a unique paleontological resource or site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A Phase I Cultural Resources Report was completed to determine potential impacts to cultural resources associated with the development of the Proposed Project (Appendix D – *Phase I Cultural Resources Report, Orange County Water District Santiago Basins Saddle Improvement Project, BonTerra Psomas, April 2016*). The OCWD concluded tribal consultation per AB52, as discussed in Section 4.17, Tribal Cultural Resources (Appendix E – *AB52 Tribal Consultation, Orange County Water District, January 2019*).

**4.5.1 Environmental Analysis**

**Introduction**

Cultural resources include prehistoric archaeological sites, historic archaeological sites, historic structures, and artifacts made by people in the past.

Prehistoric archaeological sites are places that contain the material remains of activities carried out by the native population of the area (Native Americans) prior to the arrival of Europeans in Southern California. Artifacts found in prehistoric sites include flaked stone tools such as projectile points, knives, scrapers, and drills; ground stone tools such as manos, metates, mortars, and pestles for grinding seeds and nuts; and bone tools

Historic archaeological sites are places that contain the material remains of activities carried out by people during the period when written records were produced after the arrival of Europeans. Historic archaeological material usually consists of refuse, such as bottles, cans, and food waste, deposited near structure foundations.

Historic structures include houses, commercial structures, industrial facilities, and other structures and facilities more than 50 years old.



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### **Records Search**

A records search for the Project Site and surrounding a half-mile buffer was conducted on March 23, 2016, at the SCCIC. Resources consulted include the USGS' 7.5-minute Orange topographic map containing locational data for cultural resources studies and recorded site locations. There have been six cultural resources studies conducted within a half mile of the project area; of those, one has included approximately half of the project area. The remaining half does not appear to have been surveyed. A review of the topographic map indicated that there are no archaeological sites recorded on or within a half mile of the Project Site. The nearest prehistoric site is located approximately two-thirds of a mile to the southwest of the Project Site and was reportedly destroyed during the construction of an apartment complex.

*a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline. The Project Site has been heavily disturbed in its previous use as a sand and aggregate surface mine, prior to OCWD purchasing the property in 1990. The Phase I Cultural Resources Report (Appendix D) included a records search for the Project Site and surrounding a half-mile buffer, which was conducted on March 23, 2016, at the South-Central Coastal Information Center (SCCIC). Resources consulted include the USGS' 7.5-minute Orange topographic map containing locational data for cultural resources studies and recorded site locations. There have been six cultural resources studies conducted within a half mile of the Project Site; of those, one has included approximately half of the Project Site. The remaining half does not appear to have been surveyed.

A review of the topographic map indicated that there are no archaeological sites recorded on or within a half mile of the project. The nearest prehistoric site, located approximately two-thirds of a mile to the southwest of the Project Site, was reportedly destroyed during the construction of an apartment complex. The Proposed Project would be limited to the boundaries of the Project Site and would not result in any alterations to the previously recorded historical resources. Therefore, no impacts associated with a historical resource would occur and no mitigation would be required.

*b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines?*

**Less Than Significant with Mitigation Incorporated:** The Phase I Cultural Resources Report included a Sacred Lands File (SLF) records search response from the Native American Heritage Commission (NAHC) on March 23, 2016. The NAHC responded that the results were negative, however, the NAHC provided a list of Native American tribes to contact for further information. Further details pertaining to tribal cultural resources, Native American tribal consultation, and the Proposed Project's compliance with Assembly Bill 52 (AB 52) are in Section 4.17(b).

Due to (1) the historic use of the Project Site as a sand and gravel aggregate surface mine prior to OCWD purchasing the property in 1990 and (2) the utilization of the aggregate mine as a



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groundwater recharge basin starting in 1990 with no structures having been built on the Project Site and (3) the Proposed Project activities occurring in areas that were previously excavated for the aggregate main at least 40 feet below the ground surface, there is little potential for the inadvertent discovery of intact subsurface archaeological deposits. In consideration of the negative results of the SCCIC records search and NAHC Sacred Lands File search, there is a low potential for buried, unrecorded cultural resources to be encountered during construction activities. However, there remains the possibility that undiscovered buried archaeological resources might be encountered during construction. Therefore, MM CUL-1 would require that in the event of the inadvertent discovery of cultural resources (including historical, archaeological, and tribal cultural resources) during ground-disturbing activities, work within 100 feet would be halted until the discovery can be evaluated by a qualified archaeologist, the Native American tribal representative(s) from consulting tribes (or other appropriate ethnic/cultural group representative), and the OCWD Project Manager or their designee, to analyze the significance of the find. Construction activities may continue in other areas. If the archaeologist and/or Native American tribal representative(s) determine that the find is significant, additional work, such as data recovery excavation or resource recovery, may be warranted and would be discussed in consultation with the appropriate regulatory agency and/or tribal group. Therefore, with implementation of MM CUL-1, potential impacts associated with archaeological resources would be less than significant.

*c) Would the project disturb any human remains, including those interred outside of formal cemeteries?*

**Less Than Significant Impact:** Due to the level of past disturbance in the project area, it is not anticipated that human remains, including those interred outside of formal cemeteries, would be encountered during earth removal or disturbance activities.

However, in the unexpected event human remains are found, those remains would require proper treatment, in accordance with applicable laws. Procedures of conduct following the discovery of human remains on non-federal lands have been mandated by California Health and Safety Code (CHSC) §7050.5, PRC §5097.98 and the California Code of Regulations (CCR) §15064.5(e). According to the provisions in CEQA, should human remains be encountered, all work in the immediate vicinity of the burial must cease, and any necessary steps to insure the integrity of the immediate area must be taken. The Construction Contractor shall notify the County Coroner of the find immediately and no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98(State of California 2006). If human remains are found during grading, all work in the immediate area (a radius of at least 100 feet) shall stop, and all parties shall follow all applicable state laws regarding human remains. If the remains are Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to Section 5097.98, shall immediately notify those persons it believes to be the Most Likely Descendant (MLD). The MLD shall complete the inspection of the Project Site within 48 hours of being allowed access to the Project Site and shall recommend preservation in place, reburial, or the scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Therefore, potential impacts associated with human remains would be less



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than significant with compliance with existing regulations and procedures outlined in the CHSC and the CCR and no mitigation would be required.

d) *Would the project directly or indirectly disturb or destroy a unique paleontological resource or site?*

**Less Than Significant Impact with Mitigation:** The County of Orange General Plan identifies the area east of SR-55 as sensitive for paleontological resources, which includes the Project Site. The Project Site was a sand and gravel aggregate mining pit prior to being converted into a groundwater basin. There are no known records of paleontological sites encountered in Santiago Basin. The surficial sediments within the basin consist of younger terrestrial Quaternary Alluvium, with older terrestrial Quaternary sediments occurring at various depths, as part of the deposits from Santiago Creek. These deposits typically do not contain significant vertebrate fossils, at least in the uppermost layers. Surface grading or very shallow excavations in the uppermost few feet of the younger Quaternary Alluvium within the study area are unlikely to uncover significant fossil vertebrate remains. Deeper excavations within the study area could encounter significant vertebrate fossils in older Quaternary deposits. To minimize impacts to unknown fossils, MM CUL-2 has been identified that would require the monitoring of earth disturbing activities and if potential fossil remains are encountered, construction activity would be halted and a paleontologist would be coordinated with to assess the significance of the finding. Therefore, with implementation of MM CUL-2, potential impacts associated with paleontological resources would be less than significant.



#### **4.5.2 Mitigation Measures**

**MM CUL-1:** In the event of the inadvertent discovery of cultural resources (including historical, archaeological, and tribal cultural resources) during ground-disturbing activities, the Construction Contractor and/or OCWD Project Manager shall ensure that ground-disturbing activities within 100 feet of the find shall be halted until the discovery can be evaluated by a qualified archaeologist, the Native American tribal representative(s) from consulting tribes (or other appropriate ethnic/cultural group representative), and the OCWD Project Manager or their designee, to analyze the significance of the find. Construction activities may continue in other areas. If the archaeologist and/or Native American tribal representative(s) determine that the find is significant, additional work, such as data recovery excavation or resource recovery, shall be implemented in consultation with the appropriate regulatory agency and/or tribal group.

**MM CUL-2:** In the event that paleontological resources are unearthed during ground-disturbing activities associated with the Proposed Project, the Construction Contractor and/or OCWD Project Manager shall ensure that all earth-disturbing activities cease within 50 feet of the discovery. Construction activities may be permitted to continue in other areas. A qualified paleontologist shall collect and process sediment samples to determine the fossil potential on the Project Site. The paleontologist shall evaluate the resource and determine if the discovery is significant. If the discovery proves to be significant, additional work such as data recovery excavation or resource recovery shall be implemented per the recommendation of the qualified paleontologist in coordination with an appropriate regulatory agency. Any fossils recovered during mitigation shall be offered for deposition to an accredited and permanent scientific institution for the benefit of current and future generations.

#### **4.5.3 Conclusion**

Potential impacts of the Proposed Project associated with Cultural Resources would be less than significant with implementation of MM CUL-1 and MM CUL-2.



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**4.6 Geology/Soils**

<b>Would the project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of an unknown earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



#### 4.6.1 Environmental Analysis

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

- i. *Rupture of an unknown earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map?*

**No Impact:** According to the City of Orange General Plan Public Safety Element<sup>7</sup> *Figure PS-1: Environmental and Natural Hazard Policy Map*, the El Modena Fault runs from the north-west to the south-east, approximately 1,000 feet to the north of the Project Site. However, according to the California Department of Conservation Alquist-Priolo Earthquake Fault Zones list<sup>8</sup> there are no Alquist-Priolo Earthquake Fault Zones located within the City of Orange. Additionally, the Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within an existing groundwater recharge basin. The Proposed Project does not include the construction of any habitable structures that would be impacted as a result of rupture of an unknown earthquake fault and would not affect any existing habitable structures. Therefore, no impacts associated with the rupture of an unknown earthquake fault would occur and no mitigation would be required.

- ii. *Strong seismic shaking?*

**Less Than Significant Impact:** The Project Site is in a seismically active area that could be subject to seismic shaking impacts from several surrounding active earthquake faults situated within the region, most notably from the Peralta Hills Fault and the El Modena Fault. The Peralta Hills Fault runs from the crossing of Lincoln Avenue over the Santa Ana River on the northwest, easterly along the base of the Peralta Hills and into the City of Villa Park, then southerly into the hills west of Peters Canyon Reservoir. The El Modena Fault runs from its intersection with the Peralta Hills Fault at the base of the Peralta Hills, southeasterly to Chapman Avenue and extends through Santiago Basin. Both the Peralta Hills Fault and the El Modena Fault are classified as possibly active by the Southern California Earthquake Data Center.

Additionally, Orange is vulnerable to ground shaking caused by seismic events along large regional faults in the area. These faults include the Newport-Inglewood Fault (located approximately 15 miles southwest of Orange along the coast near Newport Beach), the Elsinore Fault (which crosses the Santa Ana River Canyon about five miles northeast of Orange), and the San Andreas Fault (which is parallel to the Elsinore, located approximately 40 miles northeast of Orange). Each of these faults have numerous branches and associated faults and, therefore, any movement along any of these fault zones has the potential to cause widespread upset in Orange. The potential for ground shaking within the City depends on the distance to the fault and the intensity of a specific seismic event along the fault. According to the City of Orange

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<sup>7</sup> Page PS-9

<http://ca-orange.civicplus.com/DocumentCenter/View/573/General-Plan---Public-Safety-PDF>

<sup>8</sup> <https://www.conservation.ca.gov/cgs/Pages/Earthquakes/affected.aspx>



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General Plan Public Safety Element<sup>9</sup>, Santiago Basin area could experience a 6.0 to 6.9 on the Richter Magnitude Scale. In the event of an earthquake of this size, the Project Site would have the potential for periodic shaking, possibly of considerable intensity. The risk for seismic shaking impacts at Santiago Basin would be similar to other areas in the southern California region. The Proposed Project would not involve the construction of any habitable structures that expose people to earthquake safety hazard risks. In the event damage occurs to the proposed box culvert and pipeline, it would not expose people to safety hazards and could be repaired. Therefore, potential impacts associated with strong seismic shaking would be less than significant and no mitigation would be required.

### *iii. Liquefaction?*

**Less Than Significant Impact:** Liquefaction is the phenomenon in which loosely deposited soils located within the water table undergo rapid loss of shear strength due to excess pore pressure generation when subjected to strong earthquake induced ground shaking. Liquefaction is known generally to occur in saturated or near-saturated cohesion- less soil at depths shallower than 50-feet below the ground surface.

According to the City of Orange General Plan Public Safety Element<sup>10</sup>, *Figure PS-1: Environmental and Natural Hazard Policy Map*, the Project Site is within a liquefaction hazard area. The Proposed Project would not involve the construction of any habitable structures that expose people to liquefaction hazard risks. In the event damage occurs to the proposed box culvert and pipeline, it would not expose people to safety hazards and could be repaired. Therefore, potential impacts associated with liquefaction would be less than significant and no mitigation would be required.

### *iv. Landslides?*

**Less Than Significant Impact:** According to the City of Orange General Plan Public Safety Element, *Figure PS-1: Environmental and Natural Hazard Policy Map*, the Project Site is not located within a Landslide Hazard Area. However, Santiago Basin is experiencing localized slope erosion due primarily to the steepness of the slopes. In 2010, a slope failure occurred within the saddle area, damaging improvements and blocking the free flow of water between the Blue Diamond Basin and Bond Basin. The failure of the slopes was attributed to over-steepened saddle slopes associated with substantial scouring in combination with significant rainfall. As part of the proposed improvements to the saddle area, the surrounding slopes would re-contoured. To improve the stability of the saddle side slopes, the slopes of the saddle would cut back to a maximum steepness of 1.8 to 1. The proposed grading activity would also remove slope failure related debris and areas prone to failing. With the remedial grading, the potential for further slope erosion would be minimized. Therefore, potential impacts associated with landslides would be less than significant and no mitigation would be required.

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<sup>9</sup> Page PS-11

<https://www.cityoforange.org/DocumentCenter/View/573/General-Plan---Public-Safety-PDF>

<sup>10</sup> Page PS-9

<https://www.cityoforange.org/DocumentCenter/View/573/General-Plan---Public-Safety-PDF>



## Santiago Basin Saddle Repair Project Initial Study/Mitigated Negative Declaration

*b) Would the project result in substantial soil erosion or the loss of topsoil?*

**Less Than Significant Impact:** The Proposed Project would involve excavation and grading activities that would expose soils. The exposed soils could be subject to erosion impacts caused by water and wind. Additionally, construction equipment and vehicles could indirectly transport sediment to offsite locations. Construction projects which disturb one or more acres of soil are required to obtain coverage under a General Construction Permit by the State Water Resources Control Board. The Proposed Project would disturb more than one acre and would be required to obtain a General Construction Permit. The General Construction Permit would require the filing of a Notice of Intent with the State Water Resources Control Board and the preparation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would provide a list of Best Management Practices to minimize potential soil erosion impacts. Additionally, after the Proposed Project is completed, areas disturbed by the Proposed Project would be established native vegetation to minimize long term erosion impacts. Therefore, potential impacts associated with erosion would be less than significant with mandatory compliance with existing regulations and procedures outlined in the General Construction Permit and implementation of a SWPPP and no mitigation would be required.

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

**Less Than Significant Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within an existing groundwater recharge basin. Project activities would result in greater stability of the Project Site than in the existing condition. The Proposed Project does not include the construction of any habitable structures that would be impacted as a result of on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. In the event damage occurs to the proposed box culvert and pipeline, it would not expose people to safety hazards and could be repaired. Therefore, potential impacts associated with unstable soil would be less than significant and no mitigation would be required.

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

**No Impact:** The Proposed Project does not include the construction of any habitable structures that would be impacted as a result of expansive soil. In the event damage occurs to the proposed box culvert and pipeline, it would not expose people to safety hazards and could be repaired. Therefore, potential impacts associated with expansive soil would be less than significant and no mitigation would be required.



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- e) *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater?*

**No Impact:** The Proposed Project does not include the construction of any habitable structures that would include the construction of septic tanks or other alternative wastewater disposal systems. Therefore, no impacts associated with septic tanks or alternative waste disposal systems would occur and no mitigation would be required.

### **4.6.2 Mitigation Measures**

No mitigation measures associated with impacts to Geology and Soils apply to the Proposed Project.

### **4.6.3 Conclusion**

Potential impacts of the Proposed Project associated with Geology and Soils would be less than significant and no mitigation would be required.



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**4.7 Greenhouse Gas Emissions**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

An Air Quality and Greenhouse Gas Emissions Technical Memorandum was completed to determine potential impacts to air quality associated with the development of the Proposed Project (Appendix B - *Air Quality and Greenhouse Gas Emissions Technical Memorandum, Santiago Basins Saddle Improvement Project*, Vista Environmental, December 2018). The results of the analysis are based on CalEEMod version 2016.3.2.

**4.7.1 Environmental Analysis**

a) *Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?*

**Less Than Significant Impact:** The Proposed Project would require the use of multiple pieces of equipment over four phases of construction. Use of construction equipment would result in GHG emissions as shown in Table 11 - *Construction Related Greenhouse Gas Emissions*, which shows that the Proposed Project would create a total of 211.86 MTCO<sub>2</sub>e or 7.06 MTCO<sub>2</sub>e per year, when amortized over a 30-year period. According to the SCAQMD draft threshold of significance detailed in Appendix B, a cumulative global climate change impact would occur if the GHG emissions created from the Proposed Project would exceed 3,000 MTCO<sub>2</sub>e per year. Therefore, potential impacts associated with greenhouse gas emissions due to construction would be less than significant and no mitigation would be required.



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**Table 11 - Construction Related Greenhouse Gas Emissions**

Construction Phase	Greenhouse Gas Emissions (Metric Tons)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Phase 1A – Clearing	24.40	0.01	0.00	24.58
Phase 1B – Remedial Excavation	32.47	0.01	0.00	32.72
Phase 2 – Culvert Installation and Backfill	46.60	0.01	0.00	46.96
Phase 3 – Saddle Apron Embankment and Finish Grading	104.57	0.03	0.00	102.36
Phase 4 – Vegetation Restoration	5.20	0.00	0.00	5.24
<b>Total Construction Emissions</b>	<b>210.24</b>	<b>0.06</b>	<b>0.00</b>	<b>211.86</b>
Amortized Total Construction Emissions (30 years) <sup>1</sup>	<b>9.08</b>	<b>0.00</b>	<b>0.00</b>	<b>7.06</b>
<b>SCAQMD Draft Threshold of Significance</b>				<b>3,000</b>

Notes:

<sup>1</sup> Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.

Source: CalEEMod Version 2016.3.2.

Annually, OCWD would dewater the basin to inspect the condition of the saddle and to remove any debris or trash that might accumulate along the saddle apron. No changes are proposed to the annual maintenance activities that currently occur within the Santiago Basins and all maintenance activities would be conducted in accordance with Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities Streambed Alteration Agreement 1600-2012-0013-R5. Accordingly, the Proposed Project would not result in any new operational greenhouse gas emissions beyond those that occur in the existing condition at the Project Site. In addition, maintenance activities would primarily be done by hand and would require only minimal use of off-road equipment. Therefore, no impacts associated with operational emissions would occur and no mitigation would be required.



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b) *Would the project be in conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

**No Impact:** The Proposed Project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. The Proposed Project would stabilize the saddle side slopes, reconstruct the saddle apron and equalization culvert for the protection of the saddle apron, and restore any vegetation removed for the Proposed Project. All maintenance activities would be conducted in accordance with Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities Streambed Alteration Agreement 1600-2012-0013-R5 and would primarily be done by hand, requiring only minimal use of off-road equipment.

As detailed in Section 4.7.1(a), the Proposed Project would create an average of 9.76 MTCO<sub>2</sub>e per year, which is well below the SCAQMD draft threshold of significance of 3,000 MTCO<sub>2</sub>e per year. The SCAQMD developed this threshold through a Working Group, which also developed detailed methodology for evaluating significance under CEQA. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual threshold of 3,000 MTCO<sub>2</sub>e for all land use type projects, which was based on substantial evidence supporting the use of the recommended thresholds. Therefore, no impacts associated with conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases would occur and no mitigation would be required.

### **4.7.2 Mitigation Measures**

No mitigation measures associated with impacts to Greenhouse Gas Emissions apply to the Proposed Project.

### **4.7.3 Conclusion**

Potential impacts of the Proposed Project associated with Greenhouse Gas Emissions would be less than significant and no mitigation would be required.



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**4.8 Hazards/Hazardous Materials**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project the result in a safety hazard for people residing or working within the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



#### 4.8.1 Environmental Analysis

a) *Would the project create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?*

**Less Than Significant Impact:** The Proposed Project would not involve the routine transport, use, or disposal of hazardous materials during construction or operation of the Proposed Project. All maintenance activities would be conducted in accordance with Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities Streambed Alteration Agreement 1600-2012-0013-R5, which includes avoidance and minimization measures for resource protection from the use of herbicides (Sections 2.4, 2.5, and 2.6), equipment maintenance (Sections 2.26 through 2.29), pollution and litter (Sections 2.33-2.38). Therefore, potential impacts to hazards to the public or the environment from hazardous materials would be less than significant with implementation of the avoidance and minimization measures identified in the Streambed Alteration Agreement and no mitigation would be required.

b) *Would the project create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

**Less Than Significant Impact:** The Proposed Project would not involve the routine transport, use, or disposal of hazardous materials during construction or operation of the Proposed Project. All maintenance activities would be conducted in accordance with Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities Streambed Alteration Agreement 1600-2012-0013-R5, which includes avoidance and minimization measures for resource protection from the use of herbicides (Sections 2.4, 2.5, and 2.6), equipment maintenance (Sections 2.26 through 2.29), pollution and litter (Sections 2.33-2.38). Specifically, Section 2.33 requires an on-Site Specialist who is properly trained in spill containment/cleanup to implement spill control devices in the event a spill occurs. Therefore, potential impacts to hazards to the public or the environment from accidental release of hazardous materials would be less than significant with implementation of the avoidance and minimization measures identified in the Streambed Alteration Agreement and no mitigation would be required.

c) *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substance or waste within one-quarter mile of an existing or proposed school?*

**No Impact:** The Proposed Project would not involve the emission or handling of hazardous or acutely hazardous materials, substance or waste. The nearest school site is the Villa Park Elementary School, which is located approximately 0.5 miles to the south of the Project Site<sup>11</sup>. The Project Site is not located within a quarter mile of an existing or proposed school.

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<sup>11</sup> Google Maps

<https://www.google.com/maps/place/Santiago+Creek+Recharge+Basin/@33.8066659,-117.8151651,15z/data=!3m1!4b1!4m5!3m4!1s0x80dcd09fe85de469:0x7ed875ad69ae29fb!8m2!3d33.8066667!4d-117.8063889>



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Therefore, no impacts of hazardous materials to a school would occur and no mitigation would be required.

d) *Would the project be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and as a result, would it create a significant hazard to the public or the environment?*

**No Impact:** According to the California Environmental Protection Agency Cortese List Data Resources<sup>12</sup>, the Project Site is not listed on the Department of Toxic Substances Control EnviroStor list<sup>13</sup>, the State Water Resources Control Board GeoTracker database<sup>14</sup>, or a solid waste disposal site<sup>15</sup>. Therefore, no impacts associated with sites listed pursuant to Government Code Section 65962.5 would occur and no mitigation would be required.

e) *For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project the result in a safety hazard for people residing or working within the project area?*

**No Impact:** The Project Site is not located within the Airport Land Use Commission for Orange County's Heliports and Airport Environs Land Use Plan Airport Planning Area<sup>16</sup>. Therefore, no impacts associated with safety hazards for people residing or working in the project area would occur and no mitigation would be required.

f) *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*

**No Impact:** The Project Site is not located within the vicinity of a private air strip. Therefore, no impacts associated with safety hazards for people residing or working in the project area would occur and no mitigation would be required.

g) *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

**No Impact:** The Project Site is located immediately to the west of Hewes Street, which is identified as an evacuation corridor in the City of Orange General Plan Public Safety Element<sup>17</sup> *Figure PS-4: Generalized Evacuation Corridors*. The limits of disturbance on the Project Site are within the Santiago Basin and would not interfere with access on Hewes Street. Construction equipment would access the Project Site via the access road that connects to East Collins Avenue. Therefore, no impacts to an adopted emergency response or evacuation plan would occur and no mitigation would be required.

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<sup>12</sup> <https://calepa.ca.gov/SiteCleanup/CorteseList/>

<sup>13</sup> <https://www.envirostor.dtsc.ca.gov>

<sup>14</sup> <https://geotracker.waterboards.ca.gov/>

<sup>15</sup> <https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/SiteCleanup-CorteseList-CurrentList.pdf>

<sup>16</sup> <https://www.ocair.com/commissions/aluc/docs/airportlu.pdf>

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*h) Would the project expose people or structures to a significant risk of loss, injury or death involving wild land fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wild lands?*

**No Impact:** The Project Site is not designated as a Wildland High Fire or Very High Fire Hazard Area in the City of Orange General Plan<sup>18</sup> as shown on *Figure PS-1: Environmental and Natural Hazard Policy Map*. The Proposed Project would not involve the construction of any habitable structures that expose people to wildfire hazard risks. In the event damage occurs to the proposed box culvert and pipeline, it would not expose people to safety hazards and could be repaired. Therefore, no impacts associated with wildland fires would occur and no mitigation would be required.

### **4.8.1 Mitigation Measures**

No mitigation measures associated with impacts to Hazards and Hazardous Materials apply to the Proposed Project.

### **4.8.2 Conclusion**

Potential impacts of the Proposed Project associated with Hazards and Hazardous Materials would be less than significant and no mitigation would be required.

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**4.9 Hydrology/Water Quality**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Expose people or structures to a significant risk of loss, injury or death due to inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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### 4.9.1 Environmental Analysis

The primary surface water bodies within the study area is Santiago Basin and Santiago Creek. The Project Site underlies the Orange County Groundwater Basin.

a) *Would the project violate Regional Water Quality Control Board Water Quality standards or waste discharge standards?*

**Less Than Significant Impact:** The Project Site is within the Santiago Recharge Basin, an active groundwater recharge basin that is part of the OCWD groundwater recharge network and subject to the requirements outlined in Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities Streambed Alteration Agreement 1600-2012-0013-R5.

The Santa Ana Regional Water Quality Control Board (SARWQCB) sets water quality standards for all ground and surface waters within the Project's region. Water quality standards are defined under the Clean Water Act to include both the beneficial uses of specific water bodies and the levels of water quality that must be met and maintained to protect those uses (water quality objectives).

Construction of the Proposed Project would include grading, excavation, and other earthmoving activities that have the potential to cause erosion that could subsequently degrade water quality and/or violate water quality standards. As required by the Clean Water Act, the Proposed Project would comply with the Santa Ana Municipal Separate Storm Sewer (MS4) National Pollution Discharge Elimination System (NPDES) Permit. The NPDES MS4 Permit Program, which is administered in the project area by Orange County and is issued by the Santa Ana Regional Water Quality Control Board (RWQCB), regulates storm water and urban runoff discharges from developments to natural and constructed storm drain systems in the City of Orange. Since the Proposed Project would disturb one or more acres of soil, construction activities would be subject to the Construction General Permit (NPDES General Permit Order 2009-009-DWQ) issued by the State Water Resources Control Board (SWRCB). The Construction General Permit requires implementation of a Storm Water Pollution Prevention Plan (SWPPP) for site clearing, grading, and disturbances such as stockpiling or excavation. The SWPPP would generally contain a site map showing the construction perimeter, proposed buildings, storm water collection and discharge points, general pre- and post-construction topography, drainage patterns across the site, and adjacent roadways. The Proposed Project would be required to incorporate site design, source controls and treatment control BMPs to address storm water runoff. Therefore, potential impacts associated with violations of water quality or water discharge requirements would be less than significant and no mitigation would be required.

b) *Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level?*

**Less Than Significant Impact:** The Project Site is within the Santiago Recharge Basin, an active groundwater recharge basin that is part of the OCWD groundwater recharge network. As part of the Proposed Project, Santiago Basin would be dewatered to the extent necessary to expose the saddle and slope to allow for repairs and installation of the 12-foot square by 400-foot long



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concrete box culvert between the basins in the saddle area. The underground pipeline would convey flows between Blue Diamond Basin and Bond Basin, allowing the basin levels to equalize without overtopping and destroying the apron. After the culvert is constructed, the trench would be backfilled with native material, and the saddle would be reconstructed. The saddle would also function as an apron allowing water within Blue Diamond Basin to spill over into Bond Basin if the basins cannot equalize due to high basin inflows.

All work to be performed in Santiago Basin would be at least 200-feet above mean sea level (msl). Excavation and fill for the slope repairs and saddle apron would be within the 200 – 285-foot above msl range. To complete repairs to the Santiago Saddle, the water surface elevation in Santiago Basin would be below the 200-foot elevation during the construction period. The water elevations in Santiago Basin are typically lower than this during summer and fall months.

The bottom elevation of Bond Basin is 148 feet msl, and the bottom elevation of Blue Diamond Basin is 168 feet msl. The bottoms of both basins are generally flat with sloping sidewalls, and the average water depths during construction would range from 30 - 50 feet. This depth of water is within the typical operating parameters for summer and fall months in Santiago Basin.

Construction of the Proposed Project is expected to last four months. OCWD operates an interconnected system of basins to manage groundwater and will be able to effectively utilize these resources to manage groundwater recharge during the construction period without a substantial permanent impact to the groundwater basin. Therefore, potential impacts associated with groundwater supplies would be less than significant and no mitigation would be required.

- c) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site?*
- d) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite?*

**Less Than Significant Impact:** The Project Site is within the Santiago Recharge Basin, an active groundwater recharge basin that is part of the OCWD groundwater recharge network. As part of the Proposed Project, Santiago Basin would be dewatered to the extent necessary to expose the saddle and slope to allow for repairs and installation of the 12-foot square by 400-foot long concrete box culvert between the basins in the saddle area. The underground pipeline would convey flows between Blue Diamond Basin and Bond Basin, allowing the basin levels to equalize without overtopping and destroying the apron. After the culvert is constructed, the trench would be backfilled with native material, and the saddle would be reconstructed. The saddle would also function as an apron allowing water within Blue Diamond Basin to spill over into Bond Basin if the basins cannot equalize due to high basin inflows.

The Proposed Project would improve the drainage pattern of the Project Site within the Santiago Basin and would repair previous damage to the saddle apron and saddle side slopes as



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a result of erosion during the 2010 storm season, during which multiple landslides occurred on both sides of the saddle and damaged the rock apron and existing pipeline, resulting in restricted flows between the basins. Subsequent storm events in December 2014 and 2016 caused additional landslides along the slopes. Without remediation, the slopes around the basin would continue to fail, potentially posing safety risks when maintenance activities in the basin are occurring and risking slope failure, which would harm or destroy riparian vegetation and environmental resources. The Project Site is within the Santiago Recharge Basin, an active groundwater recharge basin that is part of the OCWD groundwater recharge network. Storm water on the Project Site would flow directly into the Santiago Recharge Basin and would be infiltrated into the groundwater recharge network. No runoff from the Project Site would flow directly into a storm water drainage system. Therefore, potential impacts associated with alteration of the existing drainage pattern resulting in erosion or flooding on or off-site would be less than significant and no mitigation would be required.

e) *Would the project create or contribute runoff which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?*

**Less Than Significant Impact:** The Project Site is within the Santiago Recharge Basin, an active groundwater recharge basin that is part of the OCWD groundwater recharge network. Storm water on the Project Site would flow directly into the Santiago Recharge Basin and would be infiltrated into the groundwater recharge network. No runoff from the Project Site would flow directly into a storm water drainage system. Therefore, potential impacts associated with runoff would be less than significant and no mitigation would be required.

f) *Would the project otherwise degrade water quality?*

**Less Than Significant Impact:** As discussed in Section 4.9.1(a), the Project Site is within the Santiago Recharge Basin, an active groundwater recharge basin that is part of the OCWD groundwater recharge network and subject to the requirements outlined in Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities Streambed Alteration Agreement 1600-2012-0013-R5. Additionally, the Proposed Project would comply with the Santa Ana Municipal Separate Storm Sewer (MS4) National Pollution Discharge Elimination System (NPDES) Permit and implement a Storm Water Pollution Prevention Plan (SWPPP). Therefore, potential impacts to water quality would be less than significant and no mitigation would be required.

g) *Would the project place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

**No Impact:** The Project Site is in Zone A in the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 06059C0166J<sup>19</sup>, which identifies the Project Site as being within a Special Flood Hazard Area. However, the Proposed Project does not include any

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<sup>19</sup>

<https://msc.fema.gov/portal/search?AddressQuery=hewes%20street%20and%20adobe%20way%2C%20orange%20OCA#searchresultsanchor>



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habitable structures, including housing. Therefore, no impacts associated with housing placed in a floodplain would occur and no mitigation would be required.

*h) Would the project place within a 100-year floodplain structures which impede or redirect flows?*

**Less Than Significant Impact:** The Project Site is in Zone A in the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 06059C0166J, which identifies the Project Site as being within a Special Flood Hazard Area. The Proposed Project includes the installation of a 12-foot square by 400-foot long concrete box culvert between the basins in the saddle area. The underground pipeline would convey flows between Blue Diamond Basin and Bond Basin, allowing the basin levels to equalize without overtopping and destroying the apron. After the culvert is constructed, the trench would be backfilled with native material, and the saddle would be reconstructed. The saddle would also function as an apron allowing water within Blue Diamond Basin to spill over into Bond Basin if the basins cannot equalize due to high basin inflows. The intended function of the saddle apron and box culvert is to equalize flows between the two basins to prevent flows between the basins from being impeded and contribute to the improved function of the groundwater basins. Therefore, potential impacts associated with impeded or redirected flows within the floodplain would be less than significant and no mitigation would be required.

*i) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*

*j) Would the project expose people or structures to a significant risk of loss, injury or death due to inundation by seiche, tsunami, or mudflow?*

**No Impact:** The Proposed Project involves repair activities to the saddle and side slopes between two basins within the Santiago Recharge Basins. The Proposed Project does not include the construction of any habitable structures that could be impacted due to flooding. Therefore, no impacts associated with loss, injury, or death due to flooding or inundation by seiche, tsunami, or mudflow would occur and no mitigation would be required.

### **4.9.2 Mitigation Measures**

No mitigation measures associated with impacts to Hydrology and Water Quality apply to the Proposed Project.

### **4.9.3 Conclusion**

Potential impacts of the Proposed Project associated with Hydrology and Water Quality would be less than significant and no mitigation would be required.



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**4.10 Land Use and Planning**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**4.10.1 Environmental Analysis**

*a) Physically divide an established community?*

**No Impact:** The Project Site is located within an existing groundwater recharge basin. The Proposed Project involves the repair and restoration of the existing saddle between the Blue Diamond Basin and Bond Basin. Upon completion, the proposed box culvert would be underground and the saddle slopes would be restored to their previous condition before they were damaged by storms. During construction, heavy equipment would be operating within the basin, which would be like ongoing routine maintenance activities that occur in the basin. Once construction is complete, the Project Site would be returned to its pre-project condition but with a wider saddle, repaired slopes, and restoration of 0.43 acres of native coastal sage scrub habitat and 0.48 acre of mixed riparian vegetation. The Project Site would not be accessible to the public. Therefore, there would be no impacts associated with a physically dividing an established community and no mitigation would be required.

*b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

**Less Than Significant Impact:** The Project Site is designated as Open Space and water uses and zoned for Sand and Gravel uses in the City of Orange General Plan and Zoning Code, respectively. The Proposed Project involves the repair and restoration of the existing saddle between the Blue Diamond Basin and Bond Basin. Upon completion, the proposed box culvert would be underground and the saddle slopes would be restored to their previous condition before they were damaged by storms. Additionally, vegetation within the disturbed area would



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be restored. The Proposed Project is consistent with the existing General Plan and Zoning Code designations and the OCWD would not request any change to these designations and uses.

The OCWD and California Department of Fish and Wildlife entered into Streambed Alteration Agreement Notification No. 1600-2012-0013-R5, effective February 3, 2013 (Appendix A). This agreement outlines several measures with the purpose of avoiding or mitigating an environmental effect due to the general maintenance activities of OCWD's facilities, including Santiago Basin. OCWD will follow all requirements included in Appendix A. Therefore, potential impacts associated with conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the Proposed Project would be less than significant and no mitigation would be required.

*c) Conflict with any applicable habitat conservation plan or natural community conservation plan?*

**No Impact:** The City of Orange is a participating agency in the Orange County Natural Communities Conservation Plan (NCCP), which was established in 1996 to provide long-term protection for habitat for three target species, the coastal California gnatcatcher, coastal cactus wren, and the orange-throated whiptail lizard, all of which are on the federal list of threatened or endangered species. By providing long-term protection for the habitat of these target species, sufficient coastal sage scrub (CSS) and other habitat would be protected to benefit a much broader range of CSS-related species.

The Project Site is not located in the NCCP Habitat Reserve, Non-Reserve Open Space, or Special Linkage areas, as shown in the City of Orange General Plan Natural Resources Element *Figure NR-3: NCCP Habitat Reserve Area*<sup>20</sup>. Therefore, no impacts associated with conflict with any applicable habitat conservation plan or natural community conservation plan would occur and no mitigation would be required.

### **4.10.2 Mitigation Measures**

No mitigation measures associated with impacts to Land Use and Planning apply to the Proposed Project.

### **4.10.3 Conclusion**

Potential impacts of the Proposed Project associated with Land Use and Planning would be less than significant and no mitigation would be required.

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<sup>20</sup> Page NR-33

<https://www.cityoforange.org/DocumentCenter/View/571/General-Plan---Natural-Resources-PDF>



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**4.11 Mineral Resources**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**4.11.1 Environmental Analysis**

a) *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

**No Impact:** The Project Site is a groundwater basin that previously operated as aggregate mines (for sand and gravel aggregate) prior to their purchase by OCWD in 1990. The Project site has not functioned as an aggregate mine for almost thirty years. The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline. Therefore, no impacts associated with loss of availability of a known mineral resource that would be of value to the region and residents of the state would occur and no mitigation would be required.

b) *Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use?*

**No Impact:** The Project Site is a groundwater basin that previously operated as aggregate mines (for sand and gravel aggregate) prior to their purchase by OCWD in 1990. The Project site has not functioned as an aggregate mine for almost thirty years. The City of Orange General Plan Natural Resources Element<sup>21</sup> identifies that many state-designated Mineral Resource Zones (MRZs) have been declassified, including the Project Site. The City of Orange Land Use Element<sup>22</sup> includes a Resource Area designation that provides for the continued use of areas for mining and agriculture. The General Plan Land Use designation for the Project Site is Open Space, and it is not designated for mineral resource recovery. The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline. Therefore, no impacts associated with loss of availability of a local mineral resource that would be of value to the region and residents of the state would occur and no mitigation would be required.

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<sup>21</sup> Page NR-35

<https://www.cityoforange.org/DocumentCenter/View/571/General-Plan---Natural-Resources-PDF>

<sup>22</sup> Page LU-25

<https://www.cityoforange.org/DocumentCenter/View/570/General-Plan---Land-Use-PDF>



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### **4.11.2 Mitigation Measures**

No mitigation measures associated with impacts to Mineral Resources apply to the Proposed Project.

### **4.11.3 Conclusion**

There would be no impacts of the Proposed Project associated with Mineral Resources and no mitigation would be required.



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**4.12 Noise**

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Would the project result in a permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial temporarily or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

A Noise and Vibration Technical Memorandum was completed to determine potential impacts due to noise and vibration associated with the development of the Proposed Project (Appendix F – *Santiago Basin Saddle Improvement Project Noise and Vibration Technical Memorandum*, Vista Environmental, December 2018).

**4.12.1 Environmental Analysis**

a) *Would the project expose persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

**Less Than Significant Impact:**

***Construction-Related Noise Impacts***

The Proposed Project would require the use of multiple pieces of equipment over four phases of construction. The overall construction of the Proposed Project would take approximately four months. All construction activities would occur between 7:00 a.m. and 8:00 p.m. Monday



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through Saturday and between 9:00 a.m. and 8:00 p.m. on Sundays and holidays, when construction activities are exempt from the City's noise standards as detailed in Section 8.24.050(E) of the Municipal Code. However, the City construction noise standards do not provide any limits to the noise levels that may be created from construction activities and even with adherence to the City standards, the resultant construction noise levels may result in a significant substantial temporary noise increase to the nearby residents that are located as near as 210 feet southeast of the proposed grading activities.

The *Transit Noise and Vibration Impact Assessment*, prepared by Federal Transit Administration (FTA), 2006, which is the only agency that has defined what constitutes a significant construction noise impact, has been utilized to determine if the proposed construction activities would create a significant substantial temporary noise increase. The FTA determined that an 80 dBA Leq daytime construction noise level at nearby homes would constitute a significant construction noise impact. The nearest sensitive receptors are residents at the single-family homes located as near as 210 feet southeast of the Project Site.

The Federal Highway Administration (FHWA) has compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston that is provided in the *FHWA Roadway Construction Noise Model User's Guide*, January 2006. The FHWA's measured noise levels for each piece of equipment that is anticipated to be utilized during each phase of construction of the Proposed Project are shown in Table 12 – *Construction Equipment Noise Levels*, which shows the anticipated worst-case noise level at the nearest homes. The calculated noise levels were based on a noise propagation drop-off rate of 6 decibels per doubling of distance and accounted for the 40 to 80-foot elevation difference and a cliff between the Project Site and the nearest homes. This difference in grade results in the line-of-sight between the Project Site and nearest homes being blocked by the existing terrain at the edge of the basin.

According to the *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (TeNS), prepared by Caltrans, September 2013, a noise barrier high enough to block the line-of-sight provides between a minimum of 5 dB attenuation and a noise barrier in the shape of a berm provides an additional 3 dB of attenuation, Therefore, 8 dB of additional attenuation was added to the noise calculations at 210 feet. Table 12 shows that worst-case construction noise levels would occur during Phase 1B and Phase 3 with a noise level as high as 64 dBA L<sub>max</sub> at the nearest home (210 feet away) and none of the construction phases would exceed the FTA daytime construction noise standard of 80 dBA Leq. None of the construction phases would exceed the measured ambient noise level of 67.3 dBA Leq adjacent to the rear yards of the nearest homes located as near as 210 feet southeast of the Project Site on the east side of Hewes Street. Therefore, potential impacts associated with construction-related noise would be less than significant and no mitigation would be required.



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**Table 12 - Construction Equipment Noise Levels**

Phase	Equipment Type	Equipment Quantity	Acoustical Use Factor <sup>1</sup> (percent)	Noise Level (dBA Lmax)	
				At 50 feet <sup>2</sup>	At 210 Feet
Phase 1A	Bulldozer	1	40	82	62
	Excavator	1	40	81	61
	Haul Truck	1	40	74	54
	Dump Truck	5	40	76	56
	Water Truck	1	40	76	56
	Work Truck	1	40	75	55
<b>Maximum Equipment Noise During Phase 1A</b>				<b>62</b>	
Phase 1B	Scraper	2	40	84	64
	Bulldozer	1	40	82	62
	Compactor	1	20	83	63
	Water Truck	1	40	76	56
	Work Truck	2	40	75	55
<b>Maximum Equipment Noise During Phase 1B</b>				<b>64</b>	
Phase 2	Crane	1	16	81	61
	Excavator	2	40	81	61
	Wheel Loader	1	40	79	59
	Compactor	1	20	83	63
	Water Truck	1	40	76	56
	Work Truck	1	40	75	55
	<b>Maximum Equipment Noise During Phase 2</b>				<b>63</b>
Phase 3	Scraper	4	40	84	64
	Bulldozer	1	40	82	62
	Compactor	1	20	83	63
	Water Truck	1	40	76	56
	Work Truck	1	40	75	55
<b>Maximum Equipment Noise During Phase 3</b>				<b>64</b>	
Phase 4	Water Truck	1	40	76	56
<b>Maximum Equipment Noise During Phase 4</b>				<b>56</b>	

Notes:

<sup>1</sup> Acoustical Use Factor from *FHWA Roadway Construction Noise Model User's Guide*, January 2006.

<sup>2</sup> Equipment noise level at 50 feet from *FHWA Roadway Construction Noise Model User's Guide*, January 2006.

<sup>3</sup> Equipment noise level at 210 feet calculated based on noise propagation rate of 6 dB reduction per doubling of distance plus an additional 8 dB of attenuation for the berm blocking the line of sight between the equipment and the nearest homes.

Source: FHWA, 2006; Caltrans, 2013.



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### ***Operational Noise Impacts***

Under existing conditions, OCWD dewateres the basin on an annual basis to inspect the condition of the saddle and to remove any debris or trash that might accumulate along the saddle apron. No changes are proposed to the annual maintenance activities that currently occur within the Santiago Basins and all maintenance activities would be conducted in accordance with Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities Streambed Alteration Agreement 1600-201-0013-R5. In addition, maintenance activities such as non-native vegetation removal would primarily be done by hand and would require only minimal use of off-road equipment. Therefore, no impacts associated with operational noise would occur.

*a) Would the project result in a permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

**No Impact:** As discussed in Section 4.12(a), no changes are proposed to the annual maintenance activities that currently occur within the Santiago Basins and all maintenance activities would be conducted in accordance with Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities. In addition, maintenance activities such as non-native vegetation removal would primarily be done by hand and would require only minimal use of off-road equipment. Therefore, no impacts associated with a permanent increase in ambient noise levels would occur.

*b) Would the project result in a substantial temporarily or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

**No Impact:** As discussed in Section 4.12(a), none of the construction phases would exceed the measured ambient noise level of 67.3 dBA Leq adjacent to the rear yards of the nearest homes located on the east side of Hewes Street. Therefore, no impacts associated with a temporary increase in ambient noise levels would occur.

*c) For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

**No Impact:** The Project Site is not located within the Airport Land Use Commission for Orange County's Heliports and Airport Environs Land Use Plan Airport Planning Area<sup>23</sup>. Therefore, no impacts associated with noise levels for people residing or working in the project area would occur and no mitigation would be required.

*d) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

**No Impact:** The Project Site is not located within the vicinity of a private air strip. Therefore, no impacts associated with noise levels for people residing or working in the project area would occur and no mitigation would be required.

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<sup>23</sup> <https://www.ocair.com/commissions/aluc/docs/airportlu.pdf>



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e) *Would the project cause exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?*

**Construction-Related Vibration Impacts**

The Proposed Project would require the use of multiple pieces of equipment over four phases of construction. The nearest sensitive receptors are residents at the single-family homes located as near as 210 feet southeast of the Project Site.

Section 5.10.3 of the *City of Orange General Plan Program EIR* (General Plan EIR), March 2010, determined that a significant vibration impact would occur if vibration levels would exceed 0.2 inch per second PPV at any nearby building. The FTA has compiled vibration level data regarding vibrating generating characteristics of several types of construction equipment that are shown in Table 13 – *Vibration Source Levels for Construction Equipment*, which shows that the use of a vibratory roller would create the highest vibration level of 0.210 inch-per-second peak particle velocity (PPV) at 25 feet. Based on typical vibration propagation rates, the vibration level at the nearest offsite receptor (210 feet away) would be 0.02 inch-per-second PPV, which is within the 0.2 inch-per-second PPV threshold. Therefore, potential impacts associated with construction related vibration would be less than significant and no mitigation would be required.

**Table 13 - Vibration Source Levels for Construction Equipment**

Equipment	Peak Particle Velocity at 25 feet (inches/second)	Approximate Vibration Level (L <sub>v</sub> )at 25 feet
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Source: Federal Transit Administration, May 2006.



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### ***Operational Vibration Impacts***

Under existing conditions, OCWD dewateres the basin on an annual basis to inspect the condition of the saddle and to remove any debris or trash that might accumulate along the saddle apron. No changes are proposed to the annual maintenance activities that currently occur within the Santiago Basins and all maintenance activities would be conducted in accordance with the Orange County Water District Regional Maintenance Plan. In addition, maintenance activities would primarily be done by hand and would require only minimal use of off-road equipment. Therefore, no impacts associated with operational noise or vibration would occur and no mitigation would be required.

#### ***4.12.2 Mitigation Measures***

No mitigation measures associated with impacts to Noise apply to the Proposed Project.

#### ***4.12.3 Conclusion***

Potential impacts of the Proposed Project associated with Noise would be less than significant and no mitigation would be required.



**4.13 Population/Housing**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**4.13.1 Environmental Analysis**

*a) Would the project induce substantial population growth in an area, either directly or indirectly?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline. The work would require approximately 12 workers who would commute to the Project Site. Employment as a result of the Proposed Project would be minimal. Therefore, no impacts associated direct or indirect induced population growth would occur and no mitigation would be required.

*b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline. No housing exists on the Project Site, and no housing in the vicinity of the Project Site would be displaced. Therefore, no impacts associated with the displacement of existing housing would occur and no mitigation would be required.

*c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline. No housing or other development exists on the Project Site and no people would be displaced as a result of the Proposed Project. Therefore, no impacts associated with the displacement of substantial numbers of people would occur and no mitigation would be required.



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### **4.13.2 Mitigation Measures**

No mitigation measures associated with impacts to Population and Housing apply to the Proposed Project.

### **4.13.3 Conclusion**

There would be no impacts of the Proposed Project associated with Population and Housing and no mitigation would be required.



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**4.14 Public Services**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**4.14.1 Environmental Analysis**

a) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection police protection, schools, parks or other public facilities.*

i. *Fire protection?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within an existing groundwater recharge basin. The Proposed Project does not include the construction of any habitable structures and per the City of Orange General Plan Public Safety Element<sup>24</sup> *Figure PS-1: Environmental and Natural Hazard Policy Map*, the Project Site is not located in a Wildland High or Very High Fire Hazard Area. Therefore, no impacts associated with the need for new fire protection facilities would occur and no mitigation would be required.

<sup>24</sup> Page PS-9

<https://www.cityoforange.org/DocumentCenter/View/573/General-Plan---Public-Safety-PDF>



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### ii. *Police protection?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within an existing groundwater recharge basin. The Proposed Project does not include the construction of any habitable structures that would induce any population growth in the City of Orange Police Department service area. Therefore, no impacts associated with the need for new police protection facilities would occur and no mitigation would be required.

### iii. *Schools?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within an existing groundwater recharge basin. The Proposed Project does not include the construction of any habitable structures that would induce any population growth that would result in new students entering the local school districts. Therefore, no impacts associated with the need for school facilities would occur and no mitigation would be required.

### iv. *Parks?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within an existing groundwater recharge basin. The Proposed Project does not include the construction of any habitable structures that would induce any population growth that would result in demands for parks by new residents. The Project Site is designated as Open Space in the City of Orange General Plan, but it is not accessible to the public for recreational uses. The Santiago Creek Bike Trail is located immediately east of the Project Site along Hewes Street, however, public access to the Santiago Creek Bike Trail would be maintained throughout the duration of the Proposed Project. Therefore, no impacts associated with the need for park facilities would occur and no mitigation would be required.

### v. *Other public facilities?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within an existing groundwater recharge basin. The Proposed Project does not include the construction of any habitable structures that would induce any population growth that would result in demands for other public facilities by new residents or businesses. Therefore, no impacts associated with the need for other public facilities would occur and no mitigation would be required.

#### **4.14.2 Mitigation Measures**

No mitigation measures associated with impacts to Public Services apply to the Proposed Project.

#### **4.14.3 Conclusion**

There would be no impacts of the Proposed Project associated with Public Services and no mitigation would be required.



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**4.15 Recreation**

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**4.15.1 Environmental Analysis**

a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within an existing groundwater recharge basin. The Proposed Project does not include the construction of any habitable structures that would induce any population growth that would result in demands for existing neighborhood and regional parks or other recreational facilities by new residents. The Project Site is designated as Open Space in the City of Orange General Plan, but it is not accessible to the public for recreational uses. The Santiago Creek Bike Trail is located immediately east of the Project Site along Hewes Street, however, public access to the Santiago Creek Bike Trail would be maintained throughout the duration of the Proposed Project. Therefore, no impacts associated with an increase in the use of parks or recreational facilities would occur and no mitigation would be required.

b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

**No Impact:** The Proposed Project does not include recreational facilities and would not require the construction or expansion of recreational facilities. Therefore, no impacts associated with recreational facilities would occur and no mitigation would be required.

**4.15.2 Mitigation Measures**

No mitigation measures associated with impacts to Recreation apply to the Proposed Project.

**4.15.3 Conclusion**

There would be no impacts of the Proposed Project associated with Recreation and no mitigation would be required.



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**4.16 Transportation/Traffic**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrians and bicycle paths?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by County congestion management agency for designated roads and highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**4.16.1 Environmental Analysis**

a) *Would the project be in conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrians and bicycle paths?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within the existing Santiago Basin. The Project Site would be accessed by the existing maintenance roads as shown in Figure 2. Vehicular trips to the Project Site would be limited to delivery and



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removal of the construction equipment detailed in Table 1 – Table 4 in the Project Description (Section 2.3), which includes a total of 14 unique vehicles that would be used on the Project Site over a four-month period. Additionally, up to 40 worker vehicle trips would occur daily during the peak activity in Phase 1 (Appendix B). These vehicular trips would be minimal in relation to the capacity of the circulation system. Per the City of Orange Traffic Impact Analysis Guidelines<sup>25</sup>, construction and operation of the Proposed Project would not meet the criteria that would require a Traffic Impact Analysis, and none was prepared for the Proposed Project. Construction and operation of the Proposed Project would take place off-street, within the Santiago Basin.

The Orange County Transportation Authority (OCTA) operates Community Route 167 from Orange to Irvine<sup>26</sup> Route 167 serves the Project Site with bus stops located near the beginning of the maintenance access road on E Collins Avenue. Construction and operation of the Proposed Project would not interfere with this bus service or either of the adjacent bus stops on E Collins Avenue.

The City of Orange General Plan Circulation and Mobility Element *Figure CM-3: Plan for Recreational Trails and Bikeways*<sup>27</sup> shows the existing Santiago Creek Bike Trail located immediately east of the Project Site along Hewes Street and the existing Class II bike lane and sidewalks on E Collins Avenue and Prospect Avenue in the vicinity of the Project Site. Public access to the Santiago Creek Bike Trail and the Class II bike lane and sidewalks would be maintained throughout the duration of the Proposed Project. Therefore, no impacts associated with performance of the circulation system would occur and no mitigation measures would be required.

*b) Would the project be in conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards and travel demand measures, or other standards established by County congestion management agency for designated roads and highways?*

**No Impact:** The Orange County Transportation Authority is Orange County's designated Congestion Management Agency and administers the Congestion Management Program (CMP)<sup>28</sup> The nearest CMP facility to the Project Site is the intersection of Katella Avenue and State Route 55, located approximately 1.5 miles to the northwest. Vehicular trips generated as a result of construction and operation of the Proposed Project would be minimal. CMP traffic analysis is required for CMP segments where the Proposed Project would generate 2,400 or more daily trips. For developments that would directly access a CMP Highway System link, the threshold for requiring a traffic impact analysis is 1,600 or more trips per day. The Proposed Project would not directly access a CMP Highway System link, and therefore the threshold for trip generation would be 2,400 or more daily trips. Since the total trip generation of the

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<sup>25</sup> [http://ca-orange.civicplus.com/DocumentCenter/View/2552/TIA-Guidelines\\_Signed?bidId=](http://ca-orange.civicplus.com/DocumentCenter/View/2552/TIA-Guidelines_Signed?bidId=)

<sup>26</sup> <http://www.octa.net/ebusbook/RoutePDF/route167.pdf>

<sup>27</sup> Page CM-27

<https://www.cityoforange.org/DocumentCenter/View/562/General-Plan---Circulation-and-Mobility-PDF>

<sup>28</sup> <http://www.octa.net/Projects-and-Programs/Plans-and-Studies/Congestion-Management-Program/Overview/>



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Proposed Project is minimal, the Proposed Project would generate less traffic than the CMP volume threshold. Therefore, no impacts associated with the CMP network would occur and no mitigation would be required.

*c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*

**No Impact:** The Proposed Project would not affect air traffic patterns. Therefore, no impacts associated with air traffic patterns would occur and no mitigation would be required.

*d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within the existing Santiago Basin. Construction and operation of the Proposed Project would utilize existing streets and the existing maintenance access roads on E Collins Avenue and Hewes Street. There would be no change in use of the Project Site from the existing use. Therefore, no impacts associated with hazards due to a design feature or incompatible uses would occur and no mitigation would be required.

*e) Would the project result in inadequate emergency access?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within the existing Santiago Basin. Emergency access to the Project Site and surrounding areas would not be impeded by construction or operation of the Proposed Project. Therefore, no impacts associated with inadequate emergency access would occur and no mitigation would be required.

*f) Would the project be in conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities?*

**No Impact:** As detailed in Section 4.16.1(a), the Proposed Project would not conflict with public transit, bicycle, or pedestrian facilities. Therefore, no impacts associated with a decrease in the performance or safety of these facilities would occur and no mitigation would be required.

### **4.16.2 Mitigation Measures**

No mitigation measures associated with impacts to Transportation and Traffic apply to the Proposed Project.

### **4.16.3 Conclusion**

There would be no impacts of the Proposed Project associated with Transportation/Traffic and no mitigation would be required.



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**4.17 Tribal Cultural Resources**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Effective July 1, 2015, Assembly Bill 52 (AB52) requires meaningful consultation with California Native American Tribes on potential impacts associated with tribal cultural resources, as defined in §21074. A tribe must submit a written request to the relevant lead agency if it wishes to be notified of projects within its traditionally and culturally affiliated area. The lead agency must provide written, formal notification to the tribes that have requested it within 14 days of determining that a project application is complete or deciding to undertake a project. The tribe must respond to the lead agency within 30 days of receipt of the notification if it wishes to engage in consultation on the project, and the lead agency must begin the consultation process within 30 days of receiving the request for consultation. Consultation concludes when either 1) the parties agree to mitigation measures to avoid a significant effect, if one exists, on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort, concludes that agreement cannot be reached. AB 52 also addresses confidentiality during tribal consultation per Public Resources Code §21082.3(c). The OCWD has received notification requests from three Native American tribes, who were each notified of the Proposed Project in accordance with AB52. Copies of the correspondence is included in Appendix E.



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### 4.17.1 Environmental Analysis

- a) *Would the project cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with value to a California Native American Tribe and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline within the existing Santiago Basin. As discussed in Section 4.5(a), there are no existing buildings or other cultural resources on the Project Site that are listed or eligible for listing in the California Register of Historical Resources. None of the historic documents reviewed as part of the cultural resource assessment (Appendix D) indicate that the Project Site is associated with any significant historical event. The records search from the SCCIC indicated that no cultural resources have been previously recorded on the Project Site. According to the City of Orange Historic Preservation Viewer<sup>29</sup>, there are no historic resources present on the Project Site. The Proposed Project would not alter the Project Site in that it is a repair and rehabilitation project of an existing facility. Therefore, no impacts associated with historical resources listed or eligible for listing in the California Register of Historical Resources or the Citywide Historic Preservation Plan would occur.

- b) *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?*

**Less Than Significant Impact:** As discussed in Section 4.5(b), the Sacred Lands File search conducted by the NAHC did not indicate the presence of Native American cultural resources on or in proximity to the Project Site.

The Orange County Water District received requests from three California Native American Tribes to be notified of projects in which the OCWD is the Lead Agency under CEQA. The San Gabriel Band of Mission Indians was notified of the Proposed Project on December 28, 2018, and the 30-day notification period lapsed on January 27, 2019, with no response from the tribe. Therefore, consultation with the San Gabriel Band of Mission Indians has concluded.

The Juaneño Band of Mission Indians – Acjachemen Nation was notified of the Proposed Project on December 28, 2018 and requested a copy of the cultural resources study by letter on January 15, 2019. The cultural resources study was provided on January 17, 2019. OCWD has reached out to the tribe for follow up on February 15, 2019 and February 21, 2019, with no

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<sup>29</sup> <http://gis.cityoforange.org/flexviewers/HistoricPreservationViewer/>



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further response from the tribe. Therefore, consultation with the Juaneno Band of Mission Indians – Acjachemen Nation has concluded.

The Gabrieleño Band of Mission Indians – Kizh Nation was notified of the Proposed Project on December 28, 2018 and requested consultation by letter on January 17, 2019. Consultation took place between the OCWD and Chairman Andrew Salas via email and a phone conversation on February 19, 2019. Mr. Salas indicated that because the affected soils consist of non-native fill materials, it is unlikely that impacts to Tribal Cultural Resources would occur at the Project Site. No specific Tribal Cultural Resources have been identified at the Project Site. The Tribe requested a copy of the engineering report for further review, which was sent to them by OCWD on February 19, 2019. OCWD followed up by email for any additional input from Chairman Salas on February 26, 2019, and no further response was received.

Project activities would not affect native soils and none of the tribes consulted have identified any Tribal Cultural Resources of concern at the Project Site. There is little potential for the inadvertent discovery of intact subsurface archaeological deposits on the Project Site. Therefore, potential impacts associated with tribal cultural resources would be less than significant and no mitigation would be required.

### **4.17.2 Mitigation Measures**

No mitigation measures associated with impacts to Tribal Cultural Resources apply to the Proposed Project.

### **4.17.3 Conclusion**

Potential impacts of the Proposed Project associated with Tribal Cultural Resources would be less than significant.



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**4.18 Utilities/Service Systems**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources or new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in the determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the providers existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project solid waste disposal need	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**4.18.1 Environmental Analysis**

a) *Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

**No Impact:** The Project Site is within the jurisdiction of the Santa Ana Regional Water Quality Control Board (RWQCB). The Proposed Project does not involve the construction of any habitable structures, and would not result in new employment, as the Project Site would be maintained consistent with the existing condition. Therefore, no impacts associated with wastewater services would occur and no mitigation would be required.



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b) *Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

**No Impact:** The Proposed Project does not involve the construction of any habitable structures, and would not result in new employment, as the Project Site would be maintained consistent with the existing condition. Therefore, no impacts associated with wastewater treatment facilities would occur and no mitigation would be required.

c) *Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

**No Impact:** The Proposed Project involves the rehabilitation and restoration of the Project Site to its condition prior to storm damage to the rock apron and existing pipeline. The Proposed Project does not involve new or the expansion of existing stormwater drainage facilities. Therefore, no impacts associated with storm water drainage facility capacity would occur and no mitigation would be required.

d) *Are sufficient water supplies available to serve the project from existing entitlements and resources or new or expanded entitlements needed?*

**No Impact:** The Proposed Project does not involve the construction of any habitable structures, and would not result in new employment, as the Project Site would be maintained consistent with the existing condition. Therefore, no impacts associated with water supplies would occur and no mitigation would be required.

e) *Would the project result in the determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the providers existing commitments?*

**No Impact:** The Proposed Project does not involve the construction of any habitable structures, and would not result in new employment, as the Project Site would be maintained consistent with the existing condition. Therefore, no impacts associated with wastewater treatment capacity would occur and no mitigation would be required.

f) *Is the project served by a landfill with sufficient permitted capacity to accommodate the project solid waste disposal need?*

**No Impact:** OC Waste & Recycling operates three active landfills in Orange County: Olinda Alpha Landfill near Brea; the Frank R. Bowerman Landfill near Irvine; and the Prima Deschecha Landfill in San Juan Capistrano. The Olinda Alpha Landfill is the closest facility to the Project Site and has a daily maximum of 8,000 tons per day. During construction of the Proposed Project, all materials would remain on site and no export of materials would be required. Annually, OCWD would dewater the basin to inspect the condition of the saddle and to remove any debris or trash that might accumulate along the saddle apron. Annual maintenance of the Santiago Basin generally results in the recovery of trash/debris; however, the quantities recovered and disposed of per day would be nominal in relation to the capacity of the landfill. Moreover, the



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Proposed Project would not result in any alterations to the maintenance activities within the Santiago Basin that would affect the quantity of solid waste collected at the Project site. All maintenance activities would be conducted in accordance with the Orange County Water District Regional Maintenance Plan for Groundwater Recharge Facilities, which includes provisions for solid waste disposal on the Project Site that may be generated by workers. Therefore, no impacts associated with solid waste disposal would occur and no mitigation would be required.

*g) Would the project comply with federal, state and local statutes and regulations related to solid waste?*

No Impact: As discussed in Section 4.18(f), solid waste generated by the Proposed Project would be disposed of at one of the three landfills in Orange County. Disposal of solid waste would be required to comply with all federal state, and local statutes and regulations related to solid waste. Therefore, no impacts associated with compliance with solid waste statutes and regulations would occur and no mitigation would be required.

### **4.18.2 Mitigation Measures**

No mitigation measures associated with impacts to Utilities and Service Systems apply to the Proposed Project.

### **4.18.3 Conclusion**

No impacts of the Proposed Project associated with Utilities and Service Systems would occur and no mitigation would be required.



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**4.19 Mandatory Findings of Significance**

Does the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

**Less Than Significant Impact With Mitigation Incorporated:** Construction activities could impact habitat for the Gnatcatcher, Least Bell’s Vireo (Vireo), Cooper Hawk, and White-Tailed Kite. To avoid direct impacts and indirect construction noise impacts, construction activities would occur when birds are no longer nesting. Additionally, prior to the removal of vegetation, the Project Site would be surveyed by a qualified biologist. If the habitat is occupied, no vegetation removal activities would occur until such time the habitat is no longer occupied. Therefore, potential impacts associated with the Gnatcatcher would be less than significant with implementation of MM BIO-1.

The native riparian and native upland vegetation at the Project Site would be considered a sensitive vegetation community and the permanent of loss of it would be considered a potentially significant impact in the absence of mitigation. The Proposed Project would temporarily remove native vegetation from the Project Site as part of the grading activities to repair and stabilize the failed slopes on both sides of the saddle. Once the Proposed Project is completed, the disturbed areas on the Project Site would be restored with native riparian and native upland vegetation. The Project Site would be managed by OCWD to prevent the re-



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establishment of non-native vegetation. Once the proposed restoration activities are implemented, there would be a net increase of 0.13 acres of native upland vegetation and 0.24 acres of native riparian vegetation. Therefore, potential impacts associated with sensitive vegetation communities would be less than significant with implementation of MM BIO-4.

Construction activities for the Proposed Project could also result in indirect adverse effects to sensitive vegetation communities from anthropogenic disturbances, colonization of invasive weeds, disturbances and generation of fugitive dust from construction equipment. Therefore, potential impacts associated with indirect construction effects to sensitive vegetation communities would be less than significant with implementation of MMs BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10.

Due to the historic use of the Project Site as a sand and gravel aggregate surface mine and groundwater recharge basin with no structures having been built on the Project Site, there is little potential for the inadvertent discovery of intact subsurface archaeological deposits. In consideration of the negative results of the SCCIC records search and NAHC Sacred Lands File search, there is a low potential for buried, unrecorded cultural resources to be encountered during construction activities. However, there remains the possibility that undiscovered buried archaeological resources might be encountered during construction. Therefore, potential impacts associated with archaeological resources would be less than significant with implementation of MM CUL-1.

Surface grading or very shallow excavations in the uppermost few feet of the younger Quaternary Alluvium within the study area are unlikely to uncover significant fossil vertebrate remains. Deeper excavations within the study area could encounter significant vertebrate fossils in older Quaternary deposits. To minimize impacts to unknown fossils, earth disturbing activities should be monitored and if potential fossil remains are encountered, construction activity should be halted and a paleontologist should be coordinated with to assess the significance of the finding. Therefore, potential impacts associated with paleontological resources would be less than significant with implementation of MM CUL-2.

*b) Does the project have impacts that are individually limited but cumulatively considerable?*

**Less Than Significant Impact:** Potential impacts associated with the Proposed Project include impacts to biological and cultural resources. No cumulative impacts would occur.

*c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

**No Impact:** Potential impacts associated with the Proposed Project include impacts to biological resources and cultural resources. No direct or indirect impacts to human beings would occur.



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### SECTION 5.0 SUMMARY MITIGATION MEASURES

**MM BIO-1:** All vegetation removing and clearing activities and the operation of heavy equipment shall be conducted between September 16 and March 15, outside of the bird nesting season. Vegetation removal and operation of heavy equipment shall be permitted to begin in the month of August provided that a preconstruction survey is conducted within the area of disturbance by a qualified biologist prior to any vegetation or ground disturbance and the qualified biologist determines that no nesting birds are present within 500 feet of the activities.

**MM BIO-2:** Following the completion of the saddle repair/restoration activities, OCWD shall plant and permanently maintain the restoration of 0.43 acres of native coastal sage scrub habitat and 0.48 acre of mixed riparian vegetation within the portions of the Project Site disturbed by the Proposed Project.

**MM BIO-3:** Prior to the removal of any vegetation within the Project Site, vegetation and trees planned for removal shall be inspected to determine if raptor nests are present. If raptor nests are present, the nests shall either be re-located and if not feasible to be relocated, a new substitute nest shall be created and located outside of the construction area.

**MM BIO-4:** During all construction activities, the Construction Contractor and/or OCWD Project Manager shall ensure that construction equipment and personnel shall utilize designated access roads to access the work area.

**MM BIO-5:** Prior to removal of vegetation, the Construction Contractor and/or OCWD Project Manager access routes in and out of the construction work area shall be flagged to adequately demarcate the boundary of the access routes.

**MM BIO-6:** During all construction activities, the Construction Contractor and/or OCWD Project Manager shall ensure that exposed soils shall be watered as needed to control dust on a continual basis.

**MM BIO-7:** During all construction activities, the Construction Contractor and/or OCWD Project Manager shall ensure that all construction, site disturbance and vegetation removal would occur within the delineated construction boundaries.

**MM BIO-8:** During all construction activities, the Construction Contractor and/or OCWD Construction Official shall ensure that the storage of equipment and materials and the temporarily stockpiling of soil shall be located within designated staging areas outside of habitat areas.

**MM BIO-9:** During all construction activities, the Project Manager and/or OCWD Project Manager shall ensure that portions of the Project Site that are outside of the disturbance area shall remain undisturbed and shall be clearly flagged or otherwise delineated prior to construction activities. The OCWD Project Manager (or their designee) shall be onsite to monitor all activities that result in the removal of sediment or vegetation to verify that such activities shall not encroach into the delineated areas.



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**MM BIO-10:** During construction, adjacent vegetation would be monitored by a qualified OCWD biologist for signs of plant stress. In the event that such plant stress is detected, the qualified OCWD biologist shall implement corrective action based on the context and severity of the plant stress, which may include the alteration of access routes, installation of construction barriers, or other similar modifications to the construction activities at the discretion of the qualified biologist.

**MM BIO-11:** Following the completion of the saddle repair/restoration activities, OCWD shall plant and permanently maintain 15 Black Willow trees at the upper edge of the ordinary high-water mark to replace the five Black Willow trees to be removed at a 3:1 replacement ratio.

**MM CUL-1:** In the event of the inadvertent discovery of cultural resources (including historical, archaeological, and tribal cultural resources) during ground-disturbing activities, the Construction Contractor and/or OCWD Project Manager shall ensure that ground-disturbing activities within 100 feet of the find shall be halted until the discovery can be evaluated by a qualified archaeologist, the Native American tribal representative(s) from consulting tribes (or other appropriate ethnic/cultural group representative), and the OCWD Project Manager or their designee, to analyze the significance of the find. Construction activities may continue in other areas. If the archaeologist and/or Native American tribal representative(s) determine that the find is significant, additional work, such as data recovery excavation or resource recovery, shall be implemented in consultation with the appropriate regulatory agency and/or tribal group.

**MM CUL-2:** In the event that paleontological resources are unearthed during ground-disturbing activities associated with the Proposed Project, the Construction Contractor and/or OCWD Project Manager shall ensure that all earth-disturbing activities cease within 50 feet of the discovery. Construction activities may be permitted to continue in other areas. A qualified paleontologist shall collect and process sediment samples to determine the fossil potential on the Project Site. The paleontologist shall evaluate the resource and determine if the discovery is significant. If the discovery proves to be significant, additional work such as data recovery excavation or resource recovery shall be implemented per the recommendation of the qualified paleontologist in coordination with an appropriate regulatory agency. Any fossils recovered during mitigation shall be offered for deposition to an accredited and permanent scientific institution for the benefit of current and future generations.



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## Santiago Basin Saddle Repair Project

### Appendix A

Streambed Alteration Agreement Notification No. 1600-2012-0013-R5



## Santiago Basin Saddle Repair Project

### Appendix B

## Santiago Basins Saddle Improvement Project Air Quality and Greenhouse Gas Emissions Technical Memorandum



## Appendix C

### Santiago Basins Saddle Repair Project Description and Biological Assessment



## Santiago Basin Saddle Repair Project

### Appendix D

### Phase I Cultural Resources Report



## Santiago Basin Saddle Repair Project

### Appendix E

#### AB52 Tribal Consultation



## Santiago Basin Saddle Repair Project

### Appendix F

#### Santiago Basins Saddle Improvement Project Noise and Vibration Technical Memorandum