

# **APPENDIX D**

## **Environmental Mitigation Measures (MMRPs)**

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**MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SAN JACINTO VALLEY WATER BANKING ERRP – PHASE 1 PROJECT:  
DEVELOPMENT OF EXTRACTION WELLS 201, 202, 203**

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Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
Aesthetics				

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Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<p><b>AES-MM 1: Design of Aboveground Structures.</b> EMWD shall ensure that the design of all aboveground structures associated with the Proposed Project shall be consistent with the general building style of the existing site and surroundings to ensure compatibility with visual character of the immediate neighborhood.</p>	<ul style="list-style-type: none"> <li>• Include mitigation measure in design specifications</li> <li>• Retain a copy of design specifications in project file</li> </ul>	EMWD; Design Contractor	Before Construction	

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Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<p><b>AES-MM 2: Nighttime Construction.</b> All nighttime construction lighting and temporary or permanent security lighting installed on new facilities shall be attached to motion sensors and shielded and directed downward to avoid light spill onto neighboring properties.</p>	<ul style="list-style-type: none"> <li>• Include mitigation measure in design specifications and construction contractor specifications</li> <li>• Retain a copy of design specifications and construction monitoring report in project file</li> </ul>	<p>EMWD; Design Contractor; Construction Contractor</p>	<p>Before and During Construction</p>	

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Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<b>Air Quality</b>				
<p><b>AQ-MM-1: Tier 4 Rated Engines.</b> EMWD shall require that the construction contractor ensures that all off-road equipment be required to have EPA certified Tier 4 final engines or engines that are certified to meet or exceed the emission ratings for EPA Tier 4 final engines. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations. During construction, the construction contractor shall maintain a list of all operating equipment in use on the project site for verification. The construction equipment list shall state the makes, models, and numbers of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board's Rule 2449.</p>	<ul style="list-style-type: none"> <li>• Include mitigation measure in construction contracting specification</li> <li>• Conduct periodic monitoring of mitigation commitments during construction.</li> <li>• Retain construction monitoring report in project file.</li> </ul>	EMWD; Construction Contractor	During Construction	
<p><b>AQ-MM-2: On-Road Haul Trucks.</b> EMWD and the construction contractor shall ensure that the contracted haul fleet for import and export of materials and soil operate vehicles that have 2012 or newer engines. Should a fleet that comprises all 2012 or newer vehicles not be available, then preference shall be given to the contractor with the newest haul fleet that will be dedicated to the Proposed Program.</p>	<ul style="list-style-type: none"> <li>• Include mitigation measure in construction contracting specification</li> <li>• Conduct periodic monitoring of mitigation commitments during construction.</li> <li>• Retain construction monitoring report in project file.</li> </ul>	EMWD; Construction Contractor	During Construction	

Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<b>Biological Resources</b>				
<p><b>BIO-MM-1: Focused Burrowing Owl Surveys.</b> Focused protocol surveys for burrowing owl shall be conducted prior to initiation of the Proposed Project in areas that contain suitable habitat for the species. The focused protocol surveys shall be conducted by a knowledgeable biologist following protocol outlined in the CDFW Staff Report on Burrowing Owl Mitigation (CDFW, 2012). If burrowing owl is observed during the focused surveys and found to be potentially impacted by the Proposed Project, additional avoidance and mitigation measures will be required. Avoidance measures include constructing Proposed Project facilities outside the breeding season, establishing a suitable buffer around an active burrow, restricting activities around certain times of year, and excluding and relocating owls. A Burrow Exclusion Plan approved by CDFW will be required to implement exclusion and relocation. Permanent impacts to land that previously contained burrowing owls may also require conservation of mitigation lands to offset the impact to burrowing owl and its habitat. The conservation of mitigation lands will be determined through consultation with CDFW.</p>	<ul style="list-style-type: none"> <li>• Retain a qualified biologist to conduct survey</li> <li>• Retain copies of all surveys and reports in project file</li> <li>• Consult with CDFW as applicable</li> <li>• Implement mitigation measures as applicable</li> <li>• Document compliance with mitigation measures as applicable</li> </ul>	EMWD	Before Construction	



Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<p><b>BIO-MM-2: Preconstruction Surveys.</b> EMWD shall conduct pre-construction surveys for coastal whiptail, coast horned lizard, California horned lark, and San Diego black-tailed jackrabbit to determine if these species are present within the Proposed Project impact areas for extraction and conveyance facilities. If any of these species are present, construction BMPs and WEAP training shall be implemented during construction activities to avoid and minimize potential impacts to these species. Example BMPs to be implemented during construction include limiting vehicle speed onsite to 15 miles per hour, covering trenches and open pits, if trenches are left open adding wooden ramps in the trench to allow small mammals to escape, temporarily fencing work areas using silt fencing, and cleaning up all trash and debris daily. Additional avoidance measures may include establishing a buffer around the species an onsite monitoring should a population of a special-status species be found. Additionally, the WEAP training will be conducted by a knowledgeable biologist to identify species that could be impacted and summarize the construction BMPs to be implemented. Construction personnel will be instructed to not directly harm any special-status species onsite by halting activities until the species can move to offsite areas or contact a qualified biologist to move the species out of harm's way.</p>	<ul style="list-style-type: none"> <li>• Retain a qualified biologist to conduct survey</li> <li>• If identified species are present, conduct construction Best Management Practices (BMPs) and Worker Environmental Awareness Program (WEAP) training conducted by a knowledgeable biologist</li> <li>• Retain copies of all surveys and reports in project file</li> </ul>	EMWD	Before and During Construction	

Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<p><b>BIO-MM 3: Nesting Birds.</b> Construction of the Proposed Project shall avoid the general avian nesting season of February through August.</p> <p>If construction of Proposed Project facilities that contain or are immediately adjacent to suitable nesting habitat must occur during the general avian nesting season, a pre-construction clearance survey should be conducted within 10 days prior to the start of construction activities to determine if any active nests or nesting activity is occurring on or within 500 feet of the Proposed Project. If no sign of nesting activity is observed, construction may proceed without potential impacts to nesting birds. If an active nest is observed during the pre-construction clearance survey, an adequate buffer should be established around the active nest depending on sensitivity of the species and proximity to Proposed Project impact areas. Typical buffer distances include up to 300-feet for passerines and up to 500-feet for raptors, but can be reduced as deemed appropriate by a monitoring biologist. On site construction monitoring may also be required to ensure that no direct or indirect impacts occur to the active nest. Proposed Project activities may encroach into the buffer only at the discretion of the monitoring biologist. The buffer should remain in place until the nest is no longer active as determined by the monitoring biologist.</p>	<ul style="list-style-type: none"> <li>• Include mitigation measure in construction contracting specification</li> <li>• Retain a qualified biologist to conduct survey if necessary, and to establish buffer if necessary</li> <li>• Retain copies of all surveys and reports in project file</li> <li>• Conduct periodic monitoring of mitigation commitments during construction.</li> <li>• Retain construction monitoring report in project file.</li> </ul>	EMWD	Before Construction	
<b>Cultural Resources</b>				
<p><b>CUL-MM 1: Archaeological Sensitivity Training.</b> Prior to the start of any ground-disturbing activity, a Qualified Archaeologist shall conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains.</p>	<ul style="list-style-type: none"> <li>• Retain a qualified archaeologist to conduct pre-construction worker sensitivity training</li> </ul>	EMWD	Before Construction	

Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<p><b>CUL-MM-2: Cultural Resources Mitigation and Monitoring Program.</b> Prior to the start of any ground-disturbing activity, the Qualified Archaeologist shall prepare a Cultural Resources Mitigation and Monitoring Program (CRMMP) based on Proposed Project design plans. The CRMMP shall include provisions for archaeological monitoring of all ground disturbance related to construction of the Proposed Project, procedures to be followed in the event of discovery of archaeological resources, and protocols for Native American coordination and input, including review of documents. The CRMMP shall outline the role and responsibilities of Native American Tribal representatives. It shall include communication protocols, an opportunity and timelines for review of cultural resources documents related to discoveries that are Native American in origin, and provisions for future Native American monitoring in the event that resources of Native American origin are discovered. The CRMMP shall include provisions for Native American monitoring during testing or data recovery efforts for resources that are Native American in origin. The Native American monitor shall be selected from a tribe that is culturally and traditionally affiliated with the project area as indicated by the Native American Heritage Commission (NAHC).</p>	<ul style="list-style-type: none"> <li>Retain a qualified archaeologist to prepare a CRMMP</li> <li>Retain copies of all surveys and reports in project file</li> <li>Implement monitoring procedures as required by the CRMMP</li> <li>Retain construction monitoring report in project file.</li> </ul>	EMWD	Before Construction	
<p><b>CUL-MM-3: Archaeological Monitoring.</b> All Project-related ground disturbance shall be monitored by archaeological monitor(s) familiar with the types of resources that could be encountered and shall work under the direct supervisor of the Qualified Archaeologist. Archaeological monitor(s) shall be empowered to halt and re-direct ground disturbing activities in the event of a discovery until it has been assessed for significance and treatment implemented, if necessary, based on the recommendations of the Qualified Archaeologist in coordination with EMWD, and Native American representatives in the event the resource is Native American in origin. The</p>	<ul style="list-style-type: none"> <li>Include mitigation measure in construction contracting specification</li> <li>Retain a qualified archaeologist to monitor ground disturbance</li> </ul>	EMWD; Construction Contractor	During Construction	

Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<p>Qualified Archaeologist may reduce the amount of monitoring that is required in certain areas if it is determined that the potential to encounter archaeological resources in that area is low based on observations of soil stratigraphy and other factors.</p>	<ul style="list-style-type: none"> <li>Retain construction monitoring report in project file.</li> </ul>			
<p><b>CUL-MM 4: Archaeological Discovery.</b> In the event archaeological resources are encountered during construction, activity in the vicinity of the find shall cease, and the protocols and procedures for discoveries outlined in the CRMMP shall be implemented. The discovery shall be evaluated for potential significance by the Qualified Archaeologist. If the Qualified Archaeologist determines that the resource may be significant, the archaeologist shall develop an appropriate treatment plan for the resource in accordance with the CRMMP. The Qualified Archaeologist shall also determine the level of archaeological monitoring that is warranted during future ground disturbance in the area, and whether work may proceed in other parts of the Proposed Project area while treatment for archaeological resources is being carried out.</p>	<ul style="list-style-type: none"> <li>Retain a qualified archaeologist to implement CRMMP discovery procedures as necessary</li> <li>Include mitigation measure in construction contracting specification</li> <li>If found, document and retain records regarding discovery of archaeological resources.</li> <li>Retain construction monitoring report in project file.</li> </ul>	EMWD	During Construction	

Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<p><b>CUL-MM-5: Paleontological Monitoring.</b> Prior to the start of earth moving activities, EMWD shall retain a Qualified Paleontologist to attend any pre-grade construction meetings to determine when and where excavations will occur below a depth of 3 feet below the existing ground surface. Working with EMWD and the construction crew, the Qualified Paleontologist shall determine a paleontological monitoring schedule.</p> <p>The Qualified Paleontologist, or a paleontological monitor working under the direct supervision of the Qualified Paleontologist, shall monitor all ground-disturbing activity below a depth of 3 feet below the existing ground surface. The location, duration, and timing of monitoring shall be determined by the Qualified Paleontologist designated for the Proposed Project in consultation with the EMWD and shall be based on a review of geologic maps and grading plans. During the course of monitoring, if the Qualified Paleontologist can demonstrate based on observations of subsurface conditions that the level of monitoring should be reduced, increased, or discontinued, the paleontologist, in consultation with EMWD may adjust the level of monitoring, as warranted.</p>	<ul style="list-style-type: none"> <li>• Include mitigation measure in construction contracting specification</li> <li>• Retain a qualified paleontologist to conduct monitoring</li> <li>• Retain copy of monitoring schedule in project file</li> <li>• Prepare and retain construction monitoring reports in project file</li> </ul>	EMWD; Construction Contractor	Before and During Construction	
<p><b>CUL-MM-6: Paleontological Sensitivity Training.</b> Prior to start of earth moving activities, the Qualified Paleontologist shall conduct pre-construction worker paleontological resources sensitivity training. This training shall include information on what types of paleontological resources could be encountered during excavations, what to do in case an unanticipated discovery is made by a worker, and laws protecting paleontological resources. All construction personnel shall be informed of the possibility of encountering fossils and instructed to immediately inform the construction foreman or supervisor if any bones or other potential fossils are unexpectedly unearthed in an area where a paleontological monitor is not present.</p>	<ul style="list-style-type: none"> <li>• Retain a qualified paleontologist to conduct pre-construction worker sensitivity training</li> </ul>	EMWD	Before Construction	

Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<p><b>CUL-MM-7: Unanticipated Paleontological Discovery.</b> In the event of unanticipated discovery of paleontological resources when a paleontological monitor is not present, the contractor shall cease ground-disturbing activities within 50 feet of the find until it can be assessed by the Qualified Paleontologist. The Qualified Paleontologist shall assess the find, implement recovery and reporting measures, if necessary, and determine if paleontological monitoring is warranted once work resumes.</p>	<ul style="list-style-type: none"> <li>• Include mitigation measure in construction contracting specification</li> <li>• Retain construction monitoring report in project file</li> </ul>	EMWD; Construction Contractor	During Construction	
<p><b>CUL-MM-8: Human Remains.</b> If human skeletal remains are uncovered during Proposed Project implementation, EMWD shall immediately halt work, contact the Riverside County coroner to determine whether the remains are human, and follow the procedures and protocols outlined in the CRMMP (see Mitigation Measure CUL-MM-2). If the County Coroner determines that the remains are Native American, they shall contact the NAHC as required by law. The NAHC shall then identify the person(s) thought to be the MLD of the deceased Native American, who will then help determine what course of action should be taken in dealing with the remains. EMWD shall ensure that the immediate vicinity where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the MLD regarding their recommendations.</p>	<ul style="list-style-type: none"> <li>• Include mitigation measure in construction contracting specification</li> <li>• If found, document and retain records regarding discovery of skeletal remains in project file.</li> </ul>	EMWD; Construction Contractor	During Construction	

Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<b>Geology, Soils, and Seismicity</b>				
<p><b>GEO-MM 1: Soils Reports and Geotechnical Investigation.</b> A soils report and geotechnical investigation report shall be prepared by a California licensed geotechnical engineer for all Project facilities with potential to encounter shallow groundwater or expansive soils. These reports shall evaluate various geotechnical characteristics including existing liquefaction risk, expansive soils, and soil stability, and whether the operation of Project facilities would exacerbate an existing risk of liquefaction or soil instability or create a new risk. The reports and evaluation shall provide recommendations for facility design per these findings; these recommendations shall be incorporated into facility design.</p>	<ul style="list-style-type: none"> <li>• Include mitigation measure in design specifications</li> <li>• Retain a copy of Geotechnical Investigation report, recommendations, and design specifications in project file</li> </ul>	EMWD; Design Contractor	Before Construction	
<p><b>GEO-MM-2: Groundwater Monitoring.</b> EMWD shall monitor groundwater levels to identify if and when levels reach below historical low levels. If monitoring data show that groundwater levels have reached historically low levels, EMWD shall reduce recovery operations to prevent subsidence from occurring.</p>	<ul style="list-style-type: none"> <li>• Monitor groundwater levels and retain records of monitoring data</li> <li>• Maintain records of recovery operations</li> <li>• Document changes in recovery operation as applicable</li> </ul>	EMWD; Project Operator	Before Construction	

Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<b>Hazards and Hazardous Materials</b>				
<p><b>HAZ-MM 1: Implement Fire Hazard Reduction Measures.</b> During construction of facilities located in areas designated as moderate, high, or very high fire hazard severity zone by CAL FIRE, EMWD shall require that all staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other material that could ignite. Any construction equipment that includes a spark arrestor shall be equipped with a spark arrestor in good working order. During the construction of the Proposed Project facilities, contractors shall require all vehicles and crews to have access to functional fire extinguishers at all times. In addition, construction crews shall have a spotter during welding activities to look out for potentially dangerous situations, including accidental sparks.</p>	<ul style="list-style-type: none"> <li>• Include mitigation measure in construction contracting specification</li> <li>• Conduct periodic monitoring of mitigation commitments during construction.</li> <li>• Retain construction monitoring report in project file.</li> </ul>	EMWD; Construction Contractor	Before and During Construction	
<b>Noise</b>				
<p><b>NOI-MM 1: Operational Noise Standards.</b> EMWD shall ensure that new aboveground Project facilities are designed such that operational noise complies with applicable noise standards at the property boundary.</p>	<ul style="list-style-type: none"> <li>• Include mitigation measure in design specifications</li> <li>• Retain a copy of design specifications in project file</li> </ul>	EMWD; Design Contractor	Before Construction	



Project Mitigation Measures	Implementation, Monitoring, and Reporting Actions	Responsibility	Monitoring Schedule	Completion of Implementation (Action/Date Completed/Signed off by)
<p><b>NOI-MM 2: Construction-Related Noise Measures.</b> To reduce temporary construction-related noise impacts, EMWD shall require the construction contractor to implement BMPs that ensure the following:</p> <ul style="list-style-type: none"> <li>a. Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the Proposed Program site.</li> <li>b. Locate equipment staging areas at the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the Proposed Program site.</li> <li>c. Ensure appropriate maintenance and working order of equipment and vehicles, and that all construction equipment is equipped with manufacturers approved mufflers and baffles.</li> <li>d. Install sound-control devices in all construction equipment, no less effective than those provided on the original equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Include mitigation measure in construction contracting specification</li> <li>• Conduct periodic monitoring of mitigation commitments during construction.</li> <li>• Retain construction monitoring report in project file.</li> </ul>	EMWD; Construction Contractor	During Construction	

## Transportation and Traffic

**TRAF-MM 1: Traffic Control Plan.** Prior to the start of construction of the conveyance facilities, EMWD shall require the construction contractor to prepare a Traffic Control Plan. The Traffic Control Plan shall show all signage, striping, delineated detours, flagging operations and any other devices that will be used during construction to guide motorists, bicyclists, and pedestrians safely through the construction area and allow for adequate access and circulation to the satisfaction of the City of San Jacinto. The Traffic Control Plan shall be prepared in accordance with the City of San Jacinto's traffic control guidelines and will be prepared to ensure that access will be maintained to individual properties, and that emergency access will not be restricted. Additionally, the Traffic Control Plan will ensure that congestion and traffic delay are not substantially increased as a result of the construction activities. Further, the Traffic Control Plan will include detours or alternative routes for bicyclists using on-street bicycle lanes as well as for pedestrians using adjacent sidewalks. In addition, EMWD shall provide written notice at least two weeks prior to the start of construction to owners/occupants along streets to be affected during construction.

During construction, EMWD will maintain continuous vehicular and pedestrian access to any affected residential driveways from the public street to the private property line, except where necessary construction precludes such continuous access for reasonable periods of time. Access will be reestablished at the end of the workday. If a driveway needs to be closed or interfered with as described above, EMWD shall notify the owner or occupant of the closure of the driveway at least five working days prior to the closure. The Traffic Control Plan shall include provisions to ensure that the construction of the conveyance pipelines do not interfere unnecessarily with the work of other agencies such as mail delivery, school buses, and municipal waste services.

EMWD shall also notify local emergency responders of any planned partial or full lane closures or blocked access to roadways or driveways required for Proposed Program facility construction. Emergency responders include fire departments, police departments, and ambulances that have jurisdiction within the Proposed Program area. Written notification and disclosure of lane closure location must be provided at least 30 days prior to the planned closure to allow for emergency response providers adequate time to prepare for lane closures.

- Include mitigation measure in construction contracting specification
- Retain copy of Traffic Control Plan in project file
- Conduct periodic monitoring of Traffic Control Plan requirements during construction.
- Retain construction monitoring report in project file.

EMWD; Construction Contractor

Before and During Construction