PALMDALE WATER DISTRICT

A CENTURY OF SERVICE

December 11, 2024

AGENDA FOR SPECIAL MEETING OF THE BOARD OF DIRECTORS OF THE PALMDALE WATER DISTRICT TO BE HELD AT 2029 EAST AVENUE Q, PALMDALE

MONDAY, DECEMBER 16, 2024

6:00 p.m.

NOTES: To comply with the Americans with Disabilities Act, to participate in any Board meeting please contact Danielle Henry at 661-947-4111 x1059 at least 48 hours prior to a Board meeting to inform us of your needs and to determine if accommodation is feasible.

Additionally, an interpreter will be made available to assist the public in making **comments** under Agenda Item No. 4 and any action items where public input is offered during the meeting if requested at least 48 hours before the meeting. Please call Danielle Henry at 661-947-4111 x1059 with your request. (PWD Rules and Regulations Section 4.03.1 (c))

Adicionalmente, un intérprete estará disponible para ayudar al público a hacer **comentarios** bajo la sección No. 4 en la agenda y cualquier elemento de acción donde se ofrece comentarios al público durante la reunión, siempre y cuando se solicite con 48 horas de anticipación de la junta directiva. Por favor de llamar Danielle Henry al 661-947-4111 x1059 con su solicitud. (PWD reglas y reglamentos sección 4.03.1 (c))

Agenda item materials, as well as materials related to agenda items submitted after distribution of the agenda packets, are available for public review at the District's office located at 2029 East Avenue Q, Palmdale or on the District's website at https://www.palmdalewater.org/governance/board-activity/2024-meeting-agendas-minutes/ (Government Code Section 54957.5). Please call Danielle Henry at 661-947-4111 x1059 for public review of materials.

PUBLIC COMMENT GUIDELINES: **The prescribed time limit per speaker is three-minutes. Please refrain from public displays or outbursts such as unsolicited applause, comments, or cheering. Any disruptive activities that substantially interfere with the ability of the District to conduct its meeting will not be permitted, and offenders will be requested to leave the meeting. (PWD Rules and Regulations, Appendix DD, Sec. IV.A.)**

Each item on the agenda shall be deemed to include any appropriate motion, resolution, or ordinance to take action on any item.

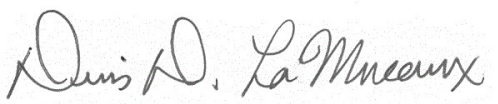
1) Pledge of Allegiance.
2) Roll Call.
3) Adoption of Agenda.
4) Public Comment for Non-Agenda Items.

5) Action Items – Action Calendar (The public shall have an opportunity to comment on any action item as each item is considered by the Board of Directors prior to action being taken.)

   5.1) Consideration and Possible Action on Resolution No. 24-15 being a Resolution (Certification) of the Board of Directors of the Palmdale Water District Certifying the Final Environmental Impact Report (State Clearinghouse 2023080290), Adopting Findings of Fact and Statement of Overriding Considerations as Required by Public Resources Code Section 21081(A) and CEQA Guidelines Section 15091, Adopting a Mitigation Monitoring and Reporting Program as Required by Public Resources Code Section 21081.6, and CEQA Guidelines Section 15097, and Adopting the 2023 Strategic Water Resources Plan. (No Budget Impact – Assistant General Manager Rogers)

6) Board Members' Requests for Future Agenda Items.

7) Adjournment.



DENNIS D. LaMOREAUX,
General Manager

DDL/dh

BOARD MEMORANDUM

DATE: December 16, 2024

TO: **BOARD OF DIRECTORS**

FROM: Mr. Scott Rogers, Assistant General Manager

VIA: Mr. Dennis D. LaMoreaux, General Manager

RE: ***CONSIDERATION AND POSSIBLE ACTION ON RESOLUTION NO. 24-15 BEING A RESOLUTION (CERTIFICATION) OF THE BOARD OF DIRECTORS OF THE PALMDALE WATER DISTRICT CERTIFYING THE FINAL ENVIRONMENTAL IMPACT REPORT (STATE CLEARINGHOUSE 2023080290), ADOPTING FINDINGS OF FACT AND STATEMENT OF OVERRIDING CONSIDERATIONS AS REQUIRED BY PUBLIC RESOURCES CODE SECTION 21081(A) AND CEQA GUIDELINES SECTION 15091, ADOPTING A MITIGATION MONITORING AND REPORTING PROGRAM AS REQUIRED BY PUBLIC RESOURCES CODE SECTION 21081.6, AND CEQA GUIDELINES SECTION 15097, AND ADOPTING THE 2023 STRATEGIC WATER RESOURCES PLAN. (NO BUDGET IMPACT – ASSISTANT GENERAL MANAGER ROGERS)***

Recommendation:

Staff recommends that the Board approve Resolution No. 24-15 Certifying Palmdale Water District's Final Environmental Impact Report (EIR), adopting CEQA Findings of Fact, adopting Mitigation Monitoring and Reporting Program, and adopting the 2023 Strategic Water Resources Plan.

Alternative Options:

The alternative would be to not certify the Final EIR or adopt the Findings of Fact, Mitigation Monitoring and Reporting Program, or Strategic Water Resources Plan.

Impact of Taking No Action:

No action taken would cause delays with critical supply resource projects.

Background:

Palmdale Water District (PWD) completed a Strategic Water Resources Plan dated June 2023 ("SWRP") to set forth a plan to develop and diversify the District's water supply to ultimately provide water supplies capable of matching the District's anticipated future overall annual water demand on a year-to-year basis. PWD wishes to implement the Strategic Water Resources Plan (SWRP or proposed program). As Lead Agency for the SWRP under the California Environmental Quality Act ("CEQA") and pursuant to the requirements of the State CEQA Guidelines, PWD prepared a Notice of Preparation (NOP) of a Program Environmental Impact Report (PEIR) for

the SWRP. The NOP was publicly circulated for 30 days on August 14, 2023, and a public scoping meeting was scheduled on September 7, 2023. On September 27, 2024, the District prepared a Notice of Availability of the Draft PEIR for the SWRP, circulated the Draft PEIR to the public, responsible agencies, trustee agencies and interested parties, set forth a 45-day comment period to run from September 27, 2024 through and including November 12, 2024.

The District received 10 comment letters and has provided responses to those comment letters and has revised the Final PEIR to address the issues raised.

Under CEQA Guidelines section 15090, a lead agency must certify a Final PEIR prior to making a decision on a proposed project.

Strategic Plan Initiative/Mission Statement:

This item is under Strategic Initiative No. 1 – Water Resource Reliability, No. 3 – Systems Efficiency, and No. 5 – Regional Leadership.

This item directly relates to the District's Mission Statement.

Budget:

This item has no budget impact.

Supporting Documents:

- Resolution No. 24-15 A Resolution (Certification) of the Board of Directors of the Palmdale Water District Certifying the Final Environmental Impact Report (State Clearinghouse 2023080290), Adopting Findings of Fact and Statement of Overriding Considerations as Required by Public Resources Code Section 21081(A) and CEQA Guidelines Section 15091, Adopting a Mitigation Monitoring and Reporting Program as Required by Public Resources Code Section 21081.6, and CEQA Guidelines Section 15097, and Adopting the 2023 Strategic Water Resources Plan
- Resolution No. 24-15 Exhibit A CEQA Findings of Fact
- Resolution No. 24-15 Exhibit B Mitigation Monitoring and Reporting Program
- Resolution No. 24-15 Exhibit C Final EIR
- Resolution No. 24-15 Exhibit D Strategic Water Resources Plan dated June 2023

RESOLUTION NO. 24-15

A RESOLUTION (CERTIFICATION) OF THE BOARD OF DIRECTORS OF THE PALMDALE WATER DISTRICT CERTIFYING THE FINAL ENVIRONMENTAL IMPACT REPORT (STATE CLEARINGHOUSE 2023080290), ADOPTING FINDINGS OF FACT AND STATEMENT OF OVERRIDING CONSIDERATIONS AS REQUIRED BY PUBLIC RESOURCES CODE SECTION 21081(A) AND CEQA GUIDELINES SECTION 15091, ADOPTING A MITIGATION MONITORING AND REPORTING PROGRAM AS REQUIRED BY PUBLIC RESOURCES CODE SECTION 21081.6, AND CEQA GUIDELINES SECTION 15097, AND ADOPTING THE 2023 STRATEGIC WATER RESOURCES PLAN

WHEREAS, the Palmdale Water District has developed an update to its Strategic Water Resources Plan (SWRP) to provide a long-term water supply strategy that meets the needs of a growing population under changing future conditions and determines the appropriate funding sources.

WHEREAS, the SWRP includes a Preferred Strategy that optimizes the District's mix of water sources up to the year 2050. The Preferred Strategy (Project) would maximize local supplies and facilities to meet future growth and increase storage of water in the Antelope Valley Groundwater Basin.

WHEREAS, the Preferred Strategy includes implementation actions for imported water supplies, recycled water, groundwater, local supplies, and conservation with the Project addressing the Pure Water Antelope Valley, Groundwater Well Rehabilitation and Replacement, and Palmdale Ditch Conversion implementation actions.

WHEREAS, the District, in August 2023, issued a CEQA Notice of Preparation (NOP) to complete an Environmental Impact Report (EIR) for the Project. A public scoping meeting was held on September 7, 2023 in the District's Board Room.

WHEREAS, scoping comments from the District's NOP were incorporated into a Draft EIR for the Project.

WHEREAS, the District prepared a Draft EIR for the Project was published in October, 2024 for a 45-day public review period. The public comment period for the Draft EIR ended on November 11, 2024 and the agency comment period ended on November 12, 2024.

WHEREAS, on December 16, 2024, the District's Board of Directors conducted a duly noticed public hearing on the Project and at the meeting certified the Final EIR after considering public testimony and materials in the staff report;

WHEREAS, all requirements of CEQA and the State CEQA Guidelines have been satisfied in the EIR, which is sufficiently detailed so that all of the potentially significant environmental effects of the Project have been adequately evaluated;

WHEREAS, the EIR prepared in connection with the Project sufficiently analyzes both the feasible mitigation measures necessary to avoid or substantially lessen the Project's environmental impacts and a range of feasible alternatives capable of eliminating or reducing these effects in accordance with CEQA and the State CEQA Guidelines.

WHEREAS, the District's Board of Directors reviewed and received the Strategic Water Resources Plan update at the July 10, 2023 Board Meeting. The Strategic Water Resources Plan meets the District's Strategic Initiatives and directly relates to the District's Mission Statement.

NOW, THEREFORE, THE DISTRICT DOES HEREBY RESOLVE, ORDER AND DETERMINE AS FOLLOWS:

SECTION 1. All recitals in the Resolution are true and correct and the District and incorporated by reference.

SECTION 2. The District's Board of Directors reviewed the Draft and Final EIR and finds the EIR for the Strategic Water Resources Plan Update Project is adequate and complete in that it addresses all potential environmental effects of the proposed Project, fully complies with CEQA, and reflects the Board of Director's independent judgment and analysis.

SECTION 3. The District's Board of Directors hereby certifies the EIR for the Strategic Water Resources Plan Update Project (State Clearing House No. 2023080290) incorporated herein by reference as if set forth in full. The District's Board of Directors finds that Impact CUL-1 would have a significant and unavoidable impact that cannot feasibly be mitigated from the conversion of the historic ditch in the Palmdale Ditch Conversion Project. The District's Board of Directors finds that all other potential significant environmental effects have been reduced to an acceptable level in that such potential significant environmental effects identified in the Draft and Final EIR have been reduced to a level of insignificance by mitigation measures. The Notice of Determination will be filed with the Los Angeles County Clerk, no later than December 20, 2024.

SECTION 4. The District's Board of Directors hereby adopts the Findings of Fact and Statement of Overriding Considerations for the Strategic Water Resources Plan Project, included as Exhibit A and incorporated herein by reference as if set forth in full.

SECTION 5. The District's Board of Directors hereby adopts the Mitigation, Monitoring and Reporting Program for the Strategic Water Resources Plan Update Project, included as Exhibit B and incorporated herein by reference as if set forth in full.

SECTION 6. The District's Board of Directors hereby adopts the 2023 Strategic Water Resources Plan.

SECTION 7. The District's Board of Directors declares that should any provision, section, paragraph, sentence or work of this Resolution be rendered or declared invalid by any court of competent jurisdiction, or by reason of any preemptive legislation, the remaining provisions, sections, paragraphs, sentences and words of this Resolution shall remain in full force and effect.

PASSED, APPROVED AND ADOPTED this 16th day of December, 2024 by the Board of Directors, the governing body of the Palmdale Water District.

PALMDALE WATER DISTRICT

_____
KATHY MAC LAREN-GOMEZ,
President

ATTEST:

_____
VINCENT DINO,
Secretary

APPROVED AS TO FORM:

_____
Aleshire & Wynder, LLP
District Legal Counsel

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Exhibit A:
CALIFORNIA ENVIRONMENTAL QUALITY ACT FINDINGS IN CONNECTION WITH THE APPROVAL OF THE STRATEGIC WATER RESOURCES PLAN PROJECT

The Palmdale Water District (District), as Lead Agency under the California Environmental Quality Act (CEQA) has prepared an Environmental Impact Report (EIR) for the Strategic Water Resources Plan (SWRP) Update (Project). The following presents the District's CEQA findings based on the Final and Draft EIR's analysis of potential impacts of the proposed Project.

1. CERTIFICATION OF THE ENVIRONMENTAL IMPACT REPORT

Together the Final EIR and the Draft EIR, or "EIR", circulated for public review, assesses the potential environmental effects from implementation of the project, identifies the means to eliminate or reduce potential environmental impacts, and evaluates a range of alternatives to the proposed project. The Final EIR includes text changes to the Draft EIR, provides Responses to Comments received on the Draft EIR, and the Mitigation Monitoring and Reporting Program for the Project.

The District Board of Directors (Board) certifies that the EIR for the Project has been completed in compliance with CEQA. The Board further certifies that the information contained in the EIR has been reviewed and considered by the Board prior to making the approvals set forth below in Section 6, and that the EIR reflects the Board's independent judgment and analysis. The conclusions presented in these Findings are based upon the EIR and other evidence in the administrative record.

2. FINDINGS

The Board hereby adopts the following Findings pursuant to Title 14, California Code of Regulations, Section 15091, in conjunction with the approvals of the project, below.

2.1 Environmental Review Process

2.1.1 Preparation of the EIR

On August 15, 2023, the District circulated a Notice of Preparation (NOP) announcing the preparation of an EIR which described the Strategic Water Resources Plan Update Project and the scope of the analysis to be included in the Draft EIR. A public scoping meeting for the proposed Project was held on September 7, 2023, to provide information on the project, answer related questions, and solicit written comments. No comments were received during the scoping meeting. The written comments received during the scoping period were incorporated into the Draft EIR, as appropriate. All issues raised during the NOP public scoping period were reviewed by the District to determine the appropriate consideration and level of analysis.

The State Clearinghouse published the Notice of Completion for the Draft EIR on September 28, 2024, and circulated it for agency review and comment for a 45-day period ending on November 12, 2024. The Notice of Availability was posted on the District's website and published in the newspaper for a 45-day public comment period starting September 27, 2024 and finishing November 11, 2024. Ten comment letters on the Draft EIR were received from agencies, organizations, and individuals. Final EIR Chapter 2 contains all comments received during the public comment period and written responses to those comments, prepared

in accordance with State CEQA Guidelines. The Board, having reviewed the comments received and responses thereto, finds that the Final EIR for the project provides adequate, good faith, and reasoned responses to the comments.

2.1.2 Absence of significant New Information

Section 15088.5 of the State CEQA Guidelines requires a Lead Agency to recirculate an EIR for further review and comment when significant new information is added to the EIR after public notice is given of the availability of the Draft EIR but before certification. New information includes: (i) changes to the project; (ii) changes in the environmental setting; or (iii) additional data or other information. Section 15088.5 further provides that:

> ... new information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a. substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement.

Having reviewed the information contained in the Draft and Final EIR and in the administrative record, as well as the requirements of State CEQA Guidelines Section 15088.5 and interpretive judicial authority regarding recirculation of Draft El Rs in connection with certification of the Final EIR, the Board finds that no new significant information was added to the EIR following public review and thus, recirculation of the EIR was not required by CEQA.

2.2 Alternatives

The SWRP identified a Preferred Strategy that optimizes PWD's mix of water sources up to the year 2050. The Preferred Strategy, referred to as the 'proposed Project', would maximize local supplies and facilities to meet future growth and increase storage of water in the Antelope Valley Groundwater Basin. Implementation actions related to imported water supply storage and recharge and the Littlerock Reservoir Sediment Removal were previously analyzed under CEQA and were not analyzed as part of the proposed Project in the Draft and Final EIR. The proposed Project consists of the remaining actions that make up the Preferred Strategy, including implementation of the Pure Water Antelope Valley project for recycled water supply, groundwater well rehabilitation and/or replacement for groundwater supply, the Palmdale Ditch Project improving local supplies, and conservation actions. Proposed Project activities are described in detail of Chapter 2 Project Description of the Draft EIR.

Per State CEQA Guidelines Section 15126, Chapter 4 Alternatives of the Draft EIR evaluates a reasonable range of project alternatives to determine if these alternatives could meet the project objectives, while avoiding or lessening significant impacts of the proposed Project. This analysis describes the development of alternatives for the SWRP and the Project in Section 4.2 of the Draft EIR and identifies one alternative that was considered and rejected during the scoping process, an alternative alignment for the Palmdale Ditch Conversion that would follow existing roadways. Brief summary of this alternative and the associated reasons for rejection are provided in Section 4.2.3.1 of the Draft EIR.

Draft EIR Sections 4.3 through 4.5 describe the project alternatives that were selected for detailed analysis in the EIR, which included a Reduced Project Alternative, Alternative Alignment of Palmdale Ditch, and a No Project Alternative as required in State CEQA Guidelines Section 15126.6. In addition to evaluating the

proposed Project, the EIR examined the associated environmental impacts of the three alternatives, as well as the ability of each alternative to meet the project's purpose and objectives (identified in Chapter 4 of the Final EIR).

2.2.1 Environmental Superior Alternative

Pursuant to requirements in State CEQA Guidelines Section 15126.6, the Draft EIR analysis identifies and discusses the environmentally superior alternative (see Draft EIR Section 4.6). The CEQA Guidelines (Section 15126.6(e)(2)) require that, if the environmentally superior alternative is the No Project Alternative, the EIR shall identify an environmentally superior alternative among the other alternatives. The No Project Alternative would result in the least environmental impacts because there would be no physical changes to the environment. All impacts associated with the proposed Project would be avoided but none of the proposed Project objectives would be met. Based on the comparison of alternative impacts, none of the alternatives (Reduced Project Alternative or Alternative Location) is considered to be the clearly environmentally superior alternative with the Reduced Project Alternative not meeting the Project Objectives and would introduce greater potential for water shortages and water loss and the Alternative Alignment of Palmdale Ditch would not avoid significant affects to historical resources.

2.2.2 Board Decision

The Board has weighed the environmental advantages and disadvantages of the proposed Project and alternatives, as presented in the EIR.

While the Reduced Project Alternative would result in similar environmental impacts to the proposed Project because the Reduced Project Alternative includes maximizing imported water supplies, developing recycled water supplies, constructing seven new groundwater production wells, continuing well rehabilitation and replacement, and sediment removal at Littlerock Dam Reservoir. Although the Reduced Project Alternative does not include purchase of groundwater rights from other groundwater users in the Antelope Valley Groundwater Basin, it would not reduce any operational environment impacts because the purchase of groundwater production rights would not result in a significant impact to agricultural production. The Reduced Project Alternative would not include the conversion of the Palmdale Ditch, thus it would have fewer construction-related impacts to biological, cultural and tribal resources, paleontological, wildfire, aesthetics, and transportation to the construction phase, and reduced impacts to air quality, energy, GHG emissions, and transportation during operations. The Reduced Project Alternative would avoid the significant and unavoidable impacts to historic resources (i.e., the Ditch). However, the Reduced Project Alternative would not fulfill the objectives of the SWRP Update to meet the current and future water supply needs for PWD's service area to 2050 as well as the proposed Project and could potentially result in significant and unavoidable impacts to water supply.

While the Alternative Alignment of Palmdale Ditch would have lesser impacts to biological, cultural, paleontological, and tribal cultural resources and wildfire than the Project it would have greater impacts to aesthetics and transportation during the construction phase. This alternative would also result in greater impacts to air quality, energy, GHG emissions, and transportation during the operational phase. In addition, if restoration of the Ditch to natural grade is required under this alternative for safety and stormwater control purposes, this alternative would not avoid the proposed Project's significant and unavoidable impact to historical resources (i.e., the Ditch). There are no potentially significant or significant and unavoidable impacts associated with the proposed Project that would be entirely avoided by implementing this alternative instead of the proposed Project.

Given these considerations, the proposed Project as presented in the EIR is recommended for approval by the Board as the "Strategic Water Resources Plan Update Project" and constitutes the CEQA findings presented below.

2.3 Significant and Unavoidable Impacts *that Cannot Feasibly Be Mitigated to a Less-than-Significant Level*

Based on the analysis contained in Chapter 3 (Environmental Impact Assessment) of the Draft EIR and the minor text changes in Chapter 3 of the Final EIR, implementation of the proposed Project would result in significant environmental effects that cannot be avoided through application of feasible mitigation measures. Significant and unavoidable impacts would occur for the following resources: cultural resources.

2.3.1 Cultural Resources

Impact CUL-1 Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.

Palmdale Ditch Conversion Project

The Palmdale Ditch Conversion Project would require the near-total demolition of the Ditch (CA-LAN-1534H), including the demolition of all or nearly all its character-defining features which would materially impair the Ditch as defined by Section 15064.5(b) of the CEQA Guidelines (Maldonado et al. 2024: 95[1]). As a result, impacts to this feature would be significant and unavoidable. To reduce impacts to the greatest extent feasible, Mitigation Measure CUL-8 would be required, which would involve preparation of a Historic American Engineering Record -like documentation (Maldonado et al. 2024: 95). Pursuant to Section 106 of the NHPA, the Project would result in an adverse effect to the Ditch pursuant to Criteria of Adverse Effect *i, ii,* and *iv* (Maldonado et al. 2024: 100). Even with implementation of all feasible mitigation, impacts would remain significant and unavoidable. The full text for Mitigation Measure CUL-8 is presented below.

Mitigation Measure

> **Mitigation Measure CUL-8: Historic American Engineering Survey-Like Documentation Package** Prior to the demolition of the Palmdale Ditch (CA-LAN-1534H), PWD should document the structure in a Historic American Engineering Record -like documentation package. The report shall generally comply with the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation (68 Federal Register 43159), Level III. At a minimum, the Historic American Engineering Record Historical Report should include digital photographs of views of Palmdale Ditch and a short-form narrative historical report. Digital copies of the Historic American Engineering Record-like documentation package should be made available to the Los Angeles County Library Acton Agua Dulce Branch and the Palmdale City Library.

[1] Maldonado, Laura, Leanna Flaherty, Rachel Bilchak, and Ashley Losco. 2024. Palmdale Ditch Conversion Project Cultural Resources Technical Report, Los Angeles County, California. Rincon Consultants Project No. 23-14737. Report on file at the South-Central Coastal Information Center, California State University, Fullerton.

Finding

For the reasons stated in the EIR (see Draft EIR Section 3.4), the Board finds that implementation of the proposed Project's Palmdale Ditch Conversion Project component could result in significant direct effects to historic cultural resources. Pursuant to CEQA Guidelines Section 15091(a)(l), no public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project, unless the agency makes one or more written findings for each significant effect, and provides the rational for that finding. Possible findings can include a determination that changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR. In accordance with CEQA Guidelines Section 15091(a)(l), the District has required and incorporated Mitigation Measure CUL-8, which would substantially lessen the significant environmental effects to cultural resources to the extent feasible.

2.4 Less than Significant Impacts Associated with the Proposed Project

This section summarizes the direct and indirect environmental impacts of the proposed project identified in the EIR, and provides Findings as to those impacts, as required by CEQA and the CEQA Guidelines. Accordingly, the following discussion identifies impacts that are less than significant without mitigation, as well as impacts that are significant but would be mitigated to below a level of significance with identified mitigation measures. All mitigation measures identified below, shall be applied the proposed project as a condition of approval.

2.4.1 Impacts that are Less Than Significant without Mitigation

Section 15091 of the State CEQA Guidelines does not require specific findings to address environmental effects that an EIR identifies as having "no impact" or a "less than significant" impact. The EIR found that the proposed Project could create potential impacts to the following resources, but that these impacts would be less than significant without mitigation: Aesthetics (Impact AES-3) (see Draft EIR Section 3.1), Air Quality and Greenhouse Gases Emissions (Impacts AIR-1, GHG-1,and GHG-2) (see Draft EIR Section 3.2), Hazards, Hazardous Materials, and Wildfire (Impacts HAZ-1 and WILD-3) (see Draft EIR Section 3.7), Hydrology, Groundwater, and Water Quality (Impacts HYD-1, HYD-3a, HYD-3c, HYD-3d, and HYD-4) (see Draft EIR Section 3.8), Land Use, Agriculture, and Forestry Resources (Impacts LU-1, LU-2, LU-3, and LU-4) (see Draft EIR Section 3.9), Recreation (Impact REC-2) (see Draft EIR Section 3.11), Transportation (Impact TRA-2) (see Draft EIR Section 3.12), and Utilities, Service Systems, and Public Services (Impacts UTL-1, UTL-2, UTL-3, UTL-5, and PUB-1) (see Draft EIR Section 3.13).

FINDING. For the reasons stated in the EIR, the Board finds that implementation of the proposed project would result in less than significant effects to Aesthetics (Impact AES-3) (see Draft EIR Section 3.1), Air Quality and Greenhouse Gases Emissions (Impacts AIR-1, GHG-1,and GHG-2) (see Draft EIR Section 3.2), Hazards, Hazardous Materials, and Wildfire (Impacts HAZ-1 and WILD-3) (see Draft EIR Section 3.7), Hydrology, Groundwater, and Water Quality (Impacts HYD-1, HYD-3a, HYD-3c, HYD-3d, and HYD-4) (see Draft EIR Section 3.8), Land Use, Agriculture, and Forestry Resources (Impacts LU-1, LU-2, LU-3, and LU-4) (see Draft EIR Section 3.9), Recreation (Impact REC-2) (see Draft EIR Section 3.11), Transportation (Impact TRA-2) (see Draft EIR Section 3.12), and Utilities, Service Systems, and Public Services (Impacts UTL-1, UTL-2, UTL-3, UTL-5, and PUB-1) (see Draft EIR Section 3.13).

2.4.2 Impacts that would be Mitigated to Less Than Significant Levels

The following section discusses potentially significant impacts of the proposed Project identified in the EIR. It has been determined that mitigation measures proposed in the Draft EIR and Revised in the Final EIR, and as set forth in the MMRP, will avoid or mitigate the effects shown below to less than significant levels.

2.4.2.1 Aesthetics

Impact AES-1: Potential to have a substantial adverse effect on a scenic vista.

Construction: Existing Wells Rehabilitation and/or Replacement

Although it is not anticipated that the proposed Project would significantly impact the visual quality of scenic vistas by creating a substantial obstruction, Mitigation Measures AES-1, AES-2, and AES-3 would be implemented to ensure that new buildings blend in with the local environment and are sited in locations where scenic vistas would not be significantly altered. Mitigation Measure AES-1 would require a landscape plan to screen facilities from public view and restore disturbed areas by replanting native vegetation typical of the surrounding area, thus reducing visual impacts to less than significant levels. Additionally, implementation of Mitigation Measure AES-2 and AES-3 would require aboveground buildings to be designed to have similar aesthetic qualities and color palettes to minimize contrasting features and blend in with the surrounding landscape. Impacts would be less than significant with mitigation.

Mitigation Measures

AES-1: Landscape Plan. During project design, a landscape plan shall be prepared for proposed Project features that may affect scenic vistas and/or are visible from scenic roadways. The landscape plan shall include measures to restore disturbed areas by replanting trees and/or reseeding with a native seed mix typical of the surrounding area. Vegetation screening shall also be included in order to assist in shielding the proposed aboveground facilities from public vantage points.

AES-2: Pre-Construction Aesthetic Design. Aboveground buildings/structures shall be designed to have similar aesthetic qualities to existing structures in the vicinity to minimize contrasting features in the visual landscape.

AES-3: Aboveground Building/Structure Design. Aboveground buildings/structures shall be designed to have color palettes and vegetation screening as necessary to blend with the surrounding character of the site and to minimize contrasting features in the visual landscape.

Finding

For the reasons stated in the Final EIR (see Draft EIR Section 3.1), the Board finds that implementation of the proposed Project could potentially result in significant impacts on aesthetics. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures AES-1, AES-2, and AES-3 would ensure that the potential Project impacts to scenic vistas would be mitigated to less than significant levels.

Impact AES-2: In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Construction: Pure Water Antelope Valley Project

Construction of the Pure Water Antelope Valley project and its associated facilities, such as injection wells, brine ponds, and pipelines, would require the use of construction equipment and storage of materials onsite at various sites. Excavated areas, stockpiled soils and other materials generated during construction would present negative aesthetic elements to the existing visual landscape. While these effects would be temporary and would cease after construction is completed, the treatment plant structures may contrast with the visual character of the nonurbanized open space areas by potentially requiring the removal of desert vegetation that is a notable characteristic of the area. Although the removal of desert vegetation would be limited, Mitigation Measures AES-1, AES-2, and AES-3 would be required to ensure the disturbance does not substantially degrade the existing visual character or quality of public views. These mitigation measures would reduce impacts to the visual character to a less than significant level by incorporating unique design features for above-ground facilities that would blend structures with the surrounding landscape. Impacts would be less than significant with mitigation.

Construction: Existing Wells Rehabilitation and/or Replacement

Similarly, rehabilitation, replacement, and construction of the identified groundwater production wells would require the use of construction equipment and storage of materials onsite at various sites. Excavated areas, stockpiled soils and other materials generated during construction would present negative aesthetic elements to the existing visual landscape. While these effects would be temporary and would cease after construction is completed, the specific location of the new and replacement wells is not finalized. Therefore, construction of the aboveground well housing has the potential to occur in a nonurbanized area where structures may contrast with the visual character of open space areas and require the removal of desert vegetation that is characteristic of the area. Mitigation Measures AES-1, AES-2, and AES-3 would be required to reduce impacts to the visual character to a less than significant level by incorporating screening vegetation, similar aesthetic features to existing structures, and blending structures with the surrounding landscape. Impacts would be less than significant with mitigation.

Mitigation Measures

AES-1: Landscape Plan. During project design, a landscape plan shall be prepared for proposed Project features that may affect scenic vistas and/or are visible from scenic roadways. The landscape plan shall include measures to restore disturbed areas by replanting trees and/or reseeding with a native seed mix typical of the surrounding area. Vegetation screening shall also be included in order to assist in shielding the proposed aboveground facilities from public vantage points.

AES-2: Pre-Construction Aesthetic Design. Aboveground buildings/structures shall be designed to have similar aesthetic qualities to existing structures in the vicinity to minimize contrasting features in the visual landscape.

AES-3: Aboveground Building/Structure Design. Aboveground buildings/structures shall be designed to have color palettes and vegetation screening as necessary to blend with the surrounding character of the site and to minimize contrasting features in the visual landscape.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.1), the Board finds that implementation of the proposed Project could potentially result in significant impacts on aesthetics. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures AES-1, AES-2, and AES-3 would ensure that the potential Project impacts to the visual character or quality of public views of the Project site and its surroundings would be mitigated to less than significant levels.

Impact AES-4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Construction: Pure Water Antelope Valley Project

After construction of the Pure Water Antelope Valley project is completed, permanent visible nighttime lighting may be installed on the exterior of the proposed aboveground facilities for safety. Thus, the impacts of an increase in ambient light levels near light-sensitive land uses such as residential and natural/open space areas may potentially be significant. Implementation of Mitigation Measure AES-4 would require any permanent lighting on buildings/structures to be shielded and directed downward to avoid light intrusion onto surrounding land uses. While construction of the Pure Water Antelope Valley treatment plant is anticipated to occur during daytime hours, if nighttime construction is required, implementation of Mitigation Measure AES-5 would require nighttime construction lighting be shielded and pointed away from surrounding light-sensitive land uses. Additionally, Mitigation Measure AES-6 would be implemented to ensure that the treatment plant is designed to minimize glare or reflection, by incorporating non-glare exterior materials or coatings.

Construction: Existing Wells Rehabilitation and/or Replacement

After construction for the rehabilitation or replacement groundwater productions wells is completed, permanent visible nighttime lighting may be installed on the exterior of the proposed well housing for safety. Thus, the impacts of an increase in ambient light levels near light-sensitive land uses such as residential and natural/open space areas may potentially be significant. Implementation of Mitigation Measure AES-4 would require any permanent lighting on buildings/structures to be shielded and directed downward to avoid light intrusion onto surrounding land uses. Additionally, nighttime construction, such as 24-hour drilling required during construction of replacement wells, would cause a potentially significant impact. However, with implementation of Mitigation Measure AES-5, nighttime construction lighting would be shielded and pointed away from surrounding light-sensitive land uses.

Construction: Palmdale Ditch Conversion Project

The Palmdale Ditch Conversion project is unlikely to require nighttime construction; however, portions of the pipeline that require road crossings within City and/or county existing roadways and that are constructed via open-cut methods may require nighttime construction, which would involve nighttime lighting. However, these portions of the Project area would generally not be located in close proximity to residences, and temporary nighttime lighting would be shielded and directed downwards to minimize light spillover, as required by Mitigation Measure AES-5. As a result, if nighttime construction is required, construction lighting would not create a new source of substantial light that would adversely affect nighttime views in the area. Construction equipment would be staged on-site and could generate glare;

however, the exposure of any given receptor to this glare would be short-term and temporary because equipment would move along the linear proposed Project alignment at an average rate of approximately 200 feet per day. Therefore, proposed Project construction would not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area. With mitigation, impacts would be less than significant.

Mitigation Measures

AES-4: Permanent Exterior Lighting. All new permanent exterior lighting associated with proposed Project components shall be shielded and directed downward to avoid any light intrusion to surrounding uses.

AES-5: Nighttime Construction Lighting. Lighting used during nighttime construction, including any associated 24-hour well drilling, shall be shielded and pointed away from surrounding light-sensitive land uses.

AES-6: Non-Glare Design. The proposed advanced water purification facility shall be designed to include non-glare exterior materials and coatings to minimize glare or reflection.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.1), the Board finds that implementation of the proposed Project could potentially result in significant impacts on aesthetics. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures AES-4, AES-5, and AES-6 would ensure that the potential Project impacts to both day or nighttime views in the Project area caused by a new source of substantial light or glare would be mitigated to less than significant levels.

2.4.2.2 Air Quality and Greenhouse Gas Emissions

Impact AIR-2: 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.

Construction: Pure Water Antelope Valley Project

Although estimates of construction-related exhaust emissions required to project criteria air pollutant emissions are not yet known for the Pure Water Antelope Valley project, construction activities would unavoidably produce criteria pollutant emissions (primarily ROG and NOx) as a result of using heavy-duty construction equipment. Mobile source emission would also be produced from construction worker vehicle trips to and from the proposed Project area. In addition, fugitive dust emissions would be generated from site preparation and excavation activities and vehicle travel on paved and unpaved surfaces. Construction equipment exhaust also would produce particulate matter emissions. Construction impacts would be temporary and limited to the period of time when construction activities are occurring. While criteria pollutant emissions from the Pure Water Antelope Valley project are anticipated to also be less than the AVAQMD significance thresholds, the Pure Water Antelope Valley project may be constructed at the same time as other proposed Project facilities, thus creating the potential to result in total daily emissions that may be in excess of the AVAQMD's significance thresholds and result in a potentially significant impact. As such, Mitigation Measures AIR-1 through AIR-3 would apply to the construction phase of the Pure Water

Antelope Valley project. Mitigation Measure AIR-1 would require adherence to Basic Construction Fugitive Dust Emissions Control Practices during construction. Moreover, Mitigation Measure AIR-2 would limit the idling time of all diesel-powered equipment. Finally, Mitigation Measure AIR-3 would ensure that contractors use equipment with certified Tier 4 final engines that meet the standards set forth by the United States Environmental Protection Agency. Altogether, the implementation of Mitigation Measures AIR-1, AIR-2, and AIR-3 would reduce construction-related emissions to below significance thresholds. Impacts would be less than significant with mitigation.

Mitigation Measures

AIR-1: Basic Construction Fugitive Dust Emissions Control Practices. The following Basic Construction Emissions Control Practices for controlling fugitive dust from a construction site shall be implemented during construction.

- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- PWD shall ensure construction contractor(s) implement measure to comply with AVAQMD Rule 403, and enforced by AVAQMD staff, including a Dust Control Plan.

AIR-2: Construction Diesel Exhaust Emission Control. The following practices, which describe exhaust emission control from diesel powered fleets, shall be implemented at the construction site. California regulations limit idling from both on-road and off-road diesel-powered equipment. The California Air Resources Board (CARB) enforces idling limitations and compliance with diesel fleet regulations.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.
- Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1].
- Construction activities shall minimize use of diesel-powered generators and rely on the electricity infrastructure where appropriate power requirements are available without the need to construct additional infrastructure.
- Construction trucks shall be routed along haul routes that minimize travel adjacent to sensitive receptor areas where feasible.

AIR-3: Tier 4 Engines. To minimize emissions of NOX from construction activities, PWD shall ensure the construction contractor(s) uses off-road equipment that meets the US EPA certified Tier 4 final engines or engines that are certified to meet or exceed the emission ratings for US EPA Tier 4 final or interim engines such that average daily NOX emissions are lower than AVAQMD Mass Emissions Thresholds of 137 pounds per day.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.2), the Board finds that implementation of the proposed Project could potentially result in significant impacts on air quality. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures AIR-1, AIR-2, and AIR-3 would ensure that the potential Project impacts resulting in a net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard would be mitigated to less than significant levels.

Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations.

Pure Water Antelope Valley Project

The nearest sensitive receptors to the Project area include residences along the south side of Avenue Q between East 20th Street and East 22nd Street. These receptors would be approximately 500 feet away from the site of the proposed AWPF and along the alignment of the proposed pipeline between the Palmdale Water Reclamation Plant and the Pure Water Antelope Valley project.

The primary source of construction-related emissions would be exhaust emissions from off-road, heavy-duty diesel equipment. Construction activities would result in temporary Project-generated emissions of diesel particulate matter (DPM). DPM was identified as a TAC by CARB in 1998. Health and cancer risks from DPM depend not just on the quantity of emissions, but also on the duration and proximity to the exposure. As mentioned in the Methodology for Analysis (Section 3.2.3.1 above), this analysis relies on guidance from OEHHA to evaluate duration and proximity risk. As described in the OEHHA guidance (OEHHA 2015), health and cancer risks from DPM are more likely to occur when exposure is on the order of a decade or more (at least 10 times the exposure length associated with the proposed Project), and the proximity is on the order of hundreds of feet. Detailed construction information and schedules for the Pure Water Antelope Valley project are not yet known. However, it is anticipated that construction activities at the site of the proposed plant would not last longer than 3 to 5 years. Construction activities for the pipeline between the Palmdale Water Reclamation Plant and the Pure Water Antelope Valley project would be temporary as construction moves along the alignment. In addition, emissions would be reduced due to the implementation of Mitigation Measures AIR-2 and AIR-3. Construction of the Pure Water Antelope Valley project would be evaluated under a future project-level CEQA analysis. However, it is unlikely that sensitive receptors would be exposed to substantial pollutant concentrations as a result of construction. Impacts would be less than significant with mitigation incorporated.

Mitigation Measures

AIR-2: Construction Diesel Exhaust Emission Control. The following practices, which describe exhaust emission control from diesel powered fleets, shall be implemented at the construction site. California regulations limit idling from both on-road and off-road diesel-powered equipment. The

California Air Resources Board (CARB) enforces idling limitations and compliance with diesel fleet regulations.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.
- Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1].
- Construction activities shall minimize use of diesel-powered generators and rely on the electricity infrastructure where appropriate power requirements are available without the need to construct additional infrastructure.
- Construction trucks shall be routed along haul routes that minimize travel adjacent to sensitive receptor areas where feasible.

AIR-3: Tier 4 Engines. To minimize emissions of NOX from construction activities, PWD shall ensure the construction contractor(s) uses off-road equipment that meets the U.S EPA certified Tier 4 final engines or engines that are certified to meet or exceed the emission ratings for U.S EPA Tier 4 final or interim engines such that average daily NOX emissions are lower than AVAQMD Mass Emissions Thresholds of 137 pounds per day.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.2), the Board finds that implementation of the proposed Project could potentially result in significant impacts on air quality. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures AIR-2 and AIR-3 would ensure that the potential Project impacts to sensitive receptors to substantial pollutant concentrations would be mitigated to less than significant levels.

2.4.2.3 Biological Resources

Impact BIO-1: Potential to have a substantial adverse effect, 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 Service.

Construction: Pure Water Antelope Valley Project

Any impacts to special-status species would be considered potentially significant. Implementation of Mitigation Measures BIO-1 through BIO-7, BIO-9, and BIO-11 through BIO-17 would require a habitat assessment to determine habitat suitability, and if suitable habitat is present, focused surveys for the species prior to construction to determine presence/absence, siting of proposed Project components to either avoid impacts to special-status species or, if such impacts cannot be avoided, require implementation of avoidance, minimization, and/or mitigation measures as appropriate. With implementation of these mitigation measures, impacts to special-status species would be less than significant for the Pure Water Antelope Valley project.

Construction: Existing Wells Rehabilitation and/or Replacement

The proposed Project has the potential to impact special status species. Implementation of Mitigation Measures BIO-1 through BIO-7, BIO-9, and BIO-11 through BIO-17 would require a habitat assessment to determine habitat suitability, and if suitable habitat is present, focused surveys for the species prior to construction to determine presence/absence, siting of proposed Project components to either avoid impacts to special-status species or, if such impacts cannot be avoided, require implementation of avoidance, minimization, and/or mitigation measures as appropriate. With implementation of these mitigation measures, impacts to special-status species would be less than significant for the Existing Wells Rehabilitation and/or Replacement.

Construction: Palmdale Ditch Conversion Project

The Palmdale Ditch Conversion Project would potentially result in substantial adverse effects, either directly or through habitat modifications, on special-status plant species, and impacts would be significant. Implementation of Mitigation Measures BIO-2, BIO-3, BIO-13 through BIO-15, and BIO-18 would be required to reduce proposed impacts from implementation of the Palmdale Ditch Conversion Project to a less than significant level. These measures involve implementation of Best Management Practices (BMPs), delineation of work limits, a construction worker environmental awareness program (WEAP) training, focused special-status plant surveys, avoidance measures, a special-status plant species mitigation and monitoring plan including compensatory mitigation (if applicable), avoidance/minimization/compensatory measures for western Joshua tree, and invasive plant species control. Impacts would be less than significant with mitigation incorporated.

Implementation of Mitigation Measure BIO-5, which involves pre-construction surveys, avoidance buffers, and compensatory mitigation, would be required to reduce the proposed Project impacts crotch's bumble bee to a less than significant level.

Construction of the Palmdale Ditch Conversion Project would potentially result in substantial adverse indirect effects to Soledad shoulderband, and impacts would be potentially significant. Implementation of Mitigation Measures BIO-13, BIO-14, and BIO-19 would be required to reduce these impacts to less than significant levels through implementation of BMPs, work limit delineation, and avoidance of materials/spoils stockpiling and spills near jurisdictional resources and riparian habitat. Impacts would be less than significant with mitigation incorporated.

Construction of the Palmdale Ditch Conversion Project would potentially result in substantial adverse effects, either directly or indirectly, to special-status reptiles, and impacts would be potentially significant. Implementation of Mitigation Measures BIO-12 through BIO-16 would be required to reduce these impacts to less than significant levels through implementation of BMPs, work limit delineation, a WEAP, pre-activity surveys for special-status wildlife, and biological construction monitoring. Impacts would be less than significant with mitigation incorporated.

Construction of the Palmdale Ditch Conversion Project would potentially result in substantial adverse effects, either directly or through habitat modifications, to burrowing owl, and impacts would be significant. Implementation of Mitigation Measures BIO-6 and BIO-7, which include focused breeding season burrowing owl surveys and compensatory mitigation for foraging habitat loss, would be required. Finally, if the species is considered a CESA candidate species or has been listed as threatened or endangered under CESA at the time proposed Project construction commences, PWD would be required to obtain an Incidental Take Permit from CDFW for potential impacts to the species, if present, on the Palmdale Ditch Conversion

Project Site and/or within a 500-foot buffer (Rincon 2024a). Impacts would be less than significant with mitigation incorporated.

Construction of the Palmdale Ditch Conversion Project would potentially result in substantial adverse effects to Swainson's hawk, either directly or indirectly, and impacts would be potentially significant. Implementation of Mitigation Measure BIO-8, which involves Swainson's hawk nesting surveys during the breeding season prior to the start of construction and establishment of protective buffers if nests are located within 0.5 mile of the Project area, would be required to reduce potential impacts to the species and to facilitate proposed Project compliance with the MBTA, California Fish and Game Code, and CESA. Impacts would be less than significant with mitigation incorporated. Finally, if Swainson's hawk is still a State threatened species at the time the proposed Project construction commences, PWD would be required to obtain an Incidental Take Permit from CDFW if pairs are confirmed nesting within 0.5-mile of the Palmdale Ditch Conversion Project Site BSA that could potentially be impacted by proposed activities (Rincon 2024a).

Construction of the Palmdale Ditch Conversion Project would potentially result in substantial adverse effects, either directly or through habitat modifications, to Mohave ground squirrel, and impacts would be potentially significant. The CDFW requires a live-trapping protocol survey for Mohave ground squirrel for projects that propose impacts to habitat with potential to support the species and are within or adjacent to the species' known range. Accordingly, implementation of Mitigation Measure BIO-9, which includes a protocol live-trapping survey and implementation of avoidance and minimization measures, if necessary, would be required to reduce potential impacts to the species and facilitate proposed Project compliance with CESA. Impacts would be less than significant with mitigation incorporated. Finally, if Mohave ground squirrel still a state threatened species at the time proposed Project construction commences, PWD would be required to obtain an Incidental Take Permit from CDFW if the species is confirmed present on or within 50 feet of the Project area that could potentially be impacted by proposed Project activities (Rincon 2024a).

Construction of the Palmdale Ditch Conversion Project would potentially result in substantial adverse effects, either directly or through habitat modifications, to roosting special-status bat species, and impacts would be potentially significant. Implementation of Mitigation Measure BIO-10, which involves a roosting bat habitat assessment and avoidance and minimization measures, if necessary, would be required to reduce impacts to roosting bats to less than significant levels. Impacts would be less than significant with mitigation incorporated.

Construction of the Palmdale Ditch Conversion Project would potentially result in substantial adverse effects, either directly or through habitat modifications, to San Diego desert woodrat, and impacts would be potentially significant. Implementation of Mitigation Measure BIO-11, which includes pre-construction surveys for active woodrat middens and avoidance and minimization measures, if necessary, would be required. Impacts would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure BIO-1: Habitat Assessment. This mitigation measure is applicable to all Project components except the Palmdale Ditch Conversion project. A habitat assessment shall be conducted prior to ground-disturbing activities within 500 feet of each proposed Project component footprint. If no suitable habitat occurs to support special-status plant species, special-status wildlife species, nesting bird species, sensitive plant communities, and/or native desert vegetation, then no further mitigation is necessary. If suitable habitat occurs, implementation of **Mitigation Measures BIO-2 through BIO-19 shall be required bas**ed on the resources identified.

Mitigation Measure BIO-2: Special-Status Plant Surveys, Avoidance Measures, Mitigation, and Monitoring Plan This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for special-status plant species is identified within the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. PWD shall retain a qualified biologist to conduct surveys for special-status plants prior to any vegetation removal, grubbing, or other construction activity within each proposed Project component footprint. The surveys shall be floristic in nature and seasonally timed to coincide with the blooming periods of the following special-status species with potential to occur:

- **All Project Components except Palmdale Ditch Conversion Project:** Horn's milk-vetch, Palmer's mariposa-lily, alkali mariposa-lily, white pygmy-poppy, Mojave paintbrush, short-joint beavertail, Greata's aster, Peirson's morning-glory, sagebrush loeflingia, and Robbins' nemacladus.
- **Palmdale Ditch Conversion Project:** Horn's milk-vetch, Palmer's mariposa-lily, alkali mariposa-lily, white pygmy-poppy, Mojave paintbrush, short-joint beavertail, and Greata's aster.

The surveys shall be conducted during the relevant target species' blooming periods no more than two years prior to construction. Special-status plant species identified on site shall be mapped onto a site-specific aerial photograph. Surveys shall be conducted in accordance with the most current California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) protocols. A report of the survey results shall be submitted to PWD for review and approval.

If special-status plants other than western Joshua trees are detected during special-status plant surveys, the observed special-status plants shall be avoided through Project component design where feasible, and vegetation clearing within 50 feet (15 meters) of any identified special-status plant shall be conducted by hand by the construction contractor(s), if practicable. An avoidance buffer of at least 50 feet (15 meters), or other distance as approved by a qualified biologist, shall be established around any identified special-status plants that can be feasibly avoided, and the avoidance buffer shall be delineated with bright orange protective fencing. The avoidance buffers shall be maintained for the duration of construction activities at each construction site and shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site.

If special-status plants other than western Joshua tree are detected during special-status plant surveys and would be impacted by Project component construction, PWD shall retain a qualified restoration specialist to develop a Special-Status Plant Mitigation and Monitoring Plan that provides for the on-site or off-site replacement of the species impacted by the Project component. The Special-Status Plant Mitigation and Monitoring Plan shall specify the following:

- A summary of impacts;
- The location of the mitigation site;
- Methods for harvesting seeds or salvaging and transplanting individuals to be impacted;
- Measures for propagating plants or transferring living plants from the salvage site to the mitigation site;

- Site preparation procedures for the mitigation site;
- A schedule and action plan to maintain and monitor the mitigation site;
- Criteria and performance standards by which to measure the success of the mitigation, including replacement of impacted plants at a minimum 1:1 ratio, to be determined in consultation with CDFW if a Lake or Streambed Alteration Agreement pursuant to CFGC Section 1602 or Incidental Take Permit pursuant to CFGC Section 2081 is otherwise required for the Project component;
- Measures to exclude unauthorized entry into the mitigation areas; and
- Contingency measures such as replanting or weeding if mitigation efforts are not successful.
- The performance standards for the Special-Status Plant Mitigation and Monitoring Plan shall be, at a minimum, the following:
    - Within five years after introducing the plants to the mitigation site, the number of established, reproductive plants shall equal the number impacted during Project component construction; and
    - Restoration shall be considered successful after the success criteria have been met for a period of at least two years without any maintenance or remediation activities other than invasive species control.

The Special-Status Plant Mitigation and Monitoring Plan shall be initiated prior to Project component construction (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation) and shall be implemented over a five-year period. The plan may also be combined with the Habitat Revegetation, Restoration, and Monitoring Program described under Mitigation Measure BIO-19.

Annual reports discussing the implementation and management of the Special-Status Plant Mitigation and Monitoring Plan shall be submitted to PWD for review and approval. Five years after the start of the mitigation for the Project component, a final report shall be submitted to PWD for review and approval and shall, at a minimum, discuss the implementation and management of the Special-Status Plant Mitigation and Monitoring Plan over the five-year period and indicate whether the Special-Status Plant Mitigation and Monitoring Plan has been successful based on the established performance standards. Should the success criteria be met before Year Five, the mitigation effort can be deemed complete.

Mitigation Measure BIO-3: Joshua Tree Census Survey, Avoidance, Minimization, and Compensation Measures. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for western Joshua tree is identified within 50 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. A western Joshua tree census survey shall be conducted for that component by a qualified arborist in accordance with CDFW's Western Joshua Tree Census Instructions, which requires a census of all western Joshua trees within the Project component area and a 50-foot buffer.

Impacts to western Joshua trees and within a minimum 50-foot buffer shall be avoided to the extent feasible. An avoidance buffer of at least 50 feet shall be established around western Joshua tree individuals that can be feasibly avoided. If a 50-foot buffer is not feasible, a reduced buffer can be established if a qualified desert native plant specialist and CDFW determine the reduced buffer

would avoid direct impacts to individual western Joshua tree(s). No activities shall occur within the buffer. The avoidance buffers shall be maintained for the duration of construction activities in each work area and shall be removed only after the conclusion of all grading, clearing, and construction activities at each Project component construction site.

For each dead or live western Joshua tree individual that cannot be avoided through Project component design, PWD shall implement one of the following measures:

- The western Joshua tree individual shall be trimmed or relocated under the guidance of a desert native plant specialist. Tree relocation shall be implemented in accordance with the following measures and CDFW-provided guidelines and relocation protocols, if made available prior to Project component construction, to assist the survival of the relocated tree:
    - The relocated western Joshua tree shall be placed in a suitable location and with proper orientation to improve its survival.
    - The western Joshua tree shall be relocated at a time that maximizes its survival, when feasible.
    - A desert native plant specialist shall be on site to oversee relocation of the tree.
- PWD shall submit payment of an in-lieu fee to CDFW pursuant to CDFW's standard mitigation fee structure for western Joshua tree in effect at the time of application for an Incidental Take Permit.

Mitigation Measure BIO-4: Arroyo Toad, Desert Tortoise, Tricolored Blackbird, and Least Bell's Vireo avoidance, minimization and compensation measures. This mitigation measure is applicable to the Project components for which suitable habitat for arroyo toad, desert tortoise, tricolored blackbird, and/or least Bell's vireo is identified within 500 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1 and does not apply to the Palmdale Ditch Conversion project. Focused protocol surveys shall be conducted by a qualified biologist following the protocol outlined in the most recent USFWS and/or CDFW protocol guidelines. These currently include: 1999 Survey Protocol for the Arroyo Toad; 2018 Preparing for Any Action That May Occur Within the Range of the Mojave Desert Tortoise (*Gopherus agassizii*); 2015 Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015; and 2001 Least Bell's Vireo Survey Guidelines). If any special-status wildlife species are observed during the focused surveys, these species and their habitat shall be avoided by the proposed Project. If avoidance of the special-status wildlife species is not feasible, and special-status wildlife may be potentially impacted by the proposed Project, additional avoidance and mitigation measures will be required, such as constructing proposed Project facilities outside the breeding season, establishing a suitable buffer around known territories, and restricting activities around certain times of year. If the proposed Project results in permanent impacts to habitat occupied by special-status wildlife species, USFWS and CDFW shall be consulted to ensure compliance with the Endangered Species Act and/or requirements for avoidance, minimization, or mitigation measures (e.g., replacement of impacted occupied habitat at a minimum 1:1 ratio to be determined in consultation with USFWS and/or CDFW, as applicable). If species are identified and cannot be avoided species-specific mitigation measures included in this section shall apply as applicable.

Mitigation Measure BIO-5: Crotch's Bumble Bee Avoidance, Minimization, and Compensation Measures. This mitigation measure is applicable to the Palmdale Ditch Conversion

project and other Project components for which suitable habitat for Crotch's bumblebee is identified within 50 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. If Crotch's bumble bee is still considered a CESA candidate species or has been listed as threatened or endangered under CESA at the time construction of Project components commences, PWD shall implement the following avoidance, minimization, and compensation measures for this species:

- A qualified biologist shall conduct a protocol-level presence/absence survey for Crotch's bumble bee in areas of the Project component site with suitable habitat during the peak active period for Crotch's bumble bee (highest detection probability) that occurs prior to the start of the Project component's initial ground disturbing activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). The peak active period for Crotch's bumble bee in the Project area is anticipated to be April through June given the expected desiccation of Crotch's bumble bee floral resources within the Project area by mid-summer, though this timing could depend on annual climatic factors. Survey methodology shall be based on Section 4.1.1 of CDFW's Survey Considerations for CESA Candidate Bumble Bee Species (CDFW 2023b), or the most current CDFW guidance in effect at the time. Inaccessible areas outside of the Project component site can be surveyed using binoculars from the Project component edge or from public roads. The timing of the presence/absence survey can be phased with Project component build-out, if feasible.
- If construction starts one year or more after the conclusion of the surveys described above, PWD shall consult with CDFW as to whether additional surveys are required and shall retain a qualified biologist to conduct additional surveys if recommended by CDFW.
- If Crotch's bumble bee is present, the qualified biologist shall identify the location of nests in or adjacent to the Project component site to the extent feasible. Inaccessible land adjacent to the Project component site shall be observed using binoculars. If nests are identified within the Project component site or immediately adjacent to the site, a qualified biologist shall determine the need to establish a no-disturbance buffer around the nest, where feasible, to reduce the risk of disturbance or accidental take. The buffer shall provide at least 50 feet (15 meters) of clearance around active nest entrances. If Project component activities may result in disturbance or potential take, the qualified biologist, in coordination with CDFW, shall expand the buffer zone as necessary to prevent disturbance or take. If establishment of a no-disturbance buffer is feasible, construction activities shall not occur within the buffer until a qualified biologist determines the colony is no longer active (i.e., no Crotch's bumble bees are seen flying in or out of the nest for three consecutive days, indicating the colony has completed its nesting season and the next season's queens have dispersed from the colony). Once the nest has been determined to be inactive, construction activities within the no-disturbance buffer(s) shall be allowed to resume. Otherwise, the no-disturbance buffer shall be maintained for the duration of Project component construction activities in each work area and shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site.
- If establishment of a no-disturbance buffer and/or avoidance of the nest is not feasible, the qualified biologist shall consult with CDFW regarding potential encroachment into the no-disturbance buffer and for Project component activities that may result in take of Crotch's bumble bee.

- If Crotch's bumble bee is determined to be present on the Project component site, floral resources associated with the species that will be removed or damaged by Project component activities in the areas of the Project component site where Crotch's bumble bee is detected and documented shall be replaced at a minimum 1:1 ratio, to be determined in consultation with CDFW as part of the Incidental Take Permit process pursuant to CFGC Section 2081 for the Project component Planning and implementation of suitable habitat replacement may be integrated into the Habitat Revegetation, Restoration, and Monitoring Program described under Mitigation Measure BIO-19.

Mitigation Measure BIO-6: Burrowing Owl Breeding Season Survey and Foraging Habitat Mitigation. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for burrowing owl is identified within 500 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. PWD shall retain a qualified biologist to conduct focused breeding season surveys for burrowing owl in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012), or the most current CDFW guidance in effect at the time. Surveys shall be conducted during the burrowing owl breeding season immediately prior to the start of Project component construction.

The focused surveys shall be conducted by a qualified biologist in the portions of the Project component site with suitable burrowing owl habitat plus a 500-foot buffer (burrowing owl survey area). The surveys shall be conducted in the morning or evening to evaluate the presence/absence of burrowing owl during the nesting season. All potential burrowing owls and burrows with burrowing owl sign shall be recorded using a GPS unit capable of submeter accuracy. Observations shall be conducted to determine if individual owls and/or nesting pairs are present and their status/disposition (e.g., late winter migrant, actively nesting, single individual not nesting). Representative photos of the habitat, potential and occupied burrows, and vegetation within the burrowing owl survey area shall be taken and included as an appendix to the survey report. All vertebrate fauna detected in the burrowing owl survey area shall be recorded in field notes. Inaccessible areas of the burrowing owl survey area outside the Project component site shall be surveyed using binoculars and/or spotting scopes to determine if owls are present.

A survey report shall be prepared that includes survey methodology, survey results, an analysis of potential Project component impacts to actively nesting pairs, and a calculation of the compensatory mitigation for foraging habitat, if impacted. Late winter migrants and non-nesting individuals located outside of the Project component impact area shall not require habitat mitigation unless passive relocation is necessary. Maps showing burrow locations, a delineation of suitable habitat areas, and burrowing owls observed shall be included in the survey report.

If actively breeding owls are observed within 500 feet of Project component activities, PWD shall implement compensatory mitigation for impacts to foraging habitat based on the following methodology:

- A 500-foot buffer shall be established around each active nest burrow to indicate the primary foraging habitat area for each nesting pair.
- Permanent Project component disturbance areas shall be overlain onto the foraging buffer zone(s) to calculate the area(s) of habitat loss.
- Permanent foraging habitat loss shall be mitigated at a 1:1 ratio.

Compensatory mitigation for loss of foraging habitat shall be implemented on- or off-site and may include purchase of Conservation Bank credits, payment of an in-lieu fee to benefit burrowing owl, or permanent conservation and management of burrowing owl habitat through the recordation of a conservation easement, funding of a non-wasting endowment, and/or implementation of a Mitigation Land Management Plan based on the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). Mitigation lands shall be identified through coordination with CDFW on, adjacent, or proximate to the impact site where practicable and where habitat is suitable to support burrowing owl.

Mitigation Measure BIO-7: Burrowing Owl Pre-Construction Clearance Survey and Occupied Burrow Avoidance and Minimization Measures. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for burrowing owl is identified within 500 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. PWD shall retain a qualified biologist to conduct a pre-construction burrowing owl clearance survey of areas within the Project component site and a 500-foot buffer that contain suitable burrowing owl habitat to confirm presence/absence of burrowing owl individuals no more than 14 days prior to start of construction in each work area. The survey methodology shall be consistent with the methods outlined in the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). If no active breeding or wintering owls or evidence of occupied habitat is identified, then Project component construction in the work area may begin, and no further action is required.

If active breeding or wintering owls or evidence of occupied habitat is detected in the Project component work area or within a 500-foot buffer, PWD shall implement the following measures for mitigation of potential burrowing owl presence in the Project area in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012):

- A qualified biologist shall be present on site during initial ground disturbing activities in potential burrowing owl habitat identified in the habitat assessment.
- Occupied burrows shall not be disturbed during the nesting season (February 1 to August 31).
- No ground disturbing activities shall be permitted within a buffer no less than 656 feet (200 meters) from an active burrowing owl burrow during the breeding season, depending on the level of disturbance, unless the qualified biologist determines a reduced buffer would not adversely affect the burrowing owl(s).
- During the nonbreeding (winter) season (September 1 to January 31), ground disturbing work can proceed near active burrowing owl burrows at the discretion of the qualified biologist as long as the work occurs no closer than 165 feet (50 meters) from the burrow, depending on whether the level of disturbance is low and if the active burrow is not directly affected by the Project component activity. A smaller/larger buffer may be established by the qualified biologist following monitoring and assessment of the Project component's effects on the burrowing owl(s).
- If active winter burrows are found that would be directly affected by ground disturbing activities, owls can be excluded from winter burrows according to recommendations in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). The qualified biologist shall prepare a passive relocation program in accordance with Appendix E (Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the CDFW *Staff Report on Burrowing Owl Mitigation*

(CDFW 2012) and submit the passive relocation program to PWD and CDFW for review and approval prior to the commencement of ground disturbance activities. If required, a compensatory mitigation agreement shall be developed in coordination with CDFW prior to passive relocation of owls.

- Smaller non-disturbance buffers may be permitted in the winter (and sometimes breeding season) for the burrowing owl individuals if a noise and visual barrier, such as hay bale walls, is installed between the occupied burrowing owl burrow and construction activities, as long as the qualified biologist determines the reduced buffer will provide adequate protection.
- When a qualified biologist determines burrowing owls are no longer occupying the Project component site and passive relocation is complete, ground disturbing activities may begin. A final letter shall be prepared by a qualified biologist documenting the results of the passive relocation. The letter shall be submitted to CDFW.

Mitigation Measure BIO-8: Swainson's Hawk Avoidance and Minimization Measures. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for Swainson's hawk is identified within 0.5-mile of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. Construction activities shall be limited to the period between September 16 and February 28 to the extent feasible. If construction activities cannot be completed within this timeframe, PWD shall retain a qualified biologist(s) with Swainson's hawk survey experience to conduct a Swainson's hawk nest survey within the Project component site and a 0.5-mile buffer during the nesting season immediately prior to the commencement of Project component construction. While the proposed Project does not propose to construct renewable energy facilities, nest survey methods and timing shall follow those outlined in the CEC and CDFW protocol for the Antelope Valley (CDFW 2010) with the exception that the nest survey shall occur within a 0.5-mile buffer of the Project component site. A report documenting results of the survey shall be prepared and submitted to PWD for review and approval prior to commencement of Project component activities. If no Swainson's hawk nests are documented within 0.5 mile of the Project area, no additional action shall be required.

If an active Swainson's hawk nest is detected within 0.5 mile of the Project component site, PWD shall implement the following measures:

- Retain a qualified biologist to prepare a Swainson's Hawk Nest Monitoring and Mitigation Plan that incorporates the following measures to avoid and minimize impacts to Swainson's hawk nests in and near the construction areas during the breeding season (March 1 to September 15):
    - If nesting Swainson's hawks are detected within 0.5 mile of Project component activities during the breeding season, CDFW shall be consulted regarding the establishment of a no-disturbance buffer to avoid impacts to the active nest. Construction activities shall maintain a 0.25-mile no-disturbance buffer around an active nest unless a reduced buffer is approved in consultation with the qualified biologist and CDFW.
    - If construction activities are necessary within the buffer zone, PWD shall consult with CDFW as to the potential for take. Monitoring of the nest site by a qualified biologist and funding of Swainson's hawk recovery efforts may be necessary.
    - If a hawk is found injured during Project component activities on the Project component site, the injured hawk shall be immediately relocated to a raptor recovery center approved

by CDFW. The qualified biologist shall notify CDFW personnel via telephone or email, followed by a written report that includes the date, time, location, and circumstances of the incident.

PWD and its construction contractor(s) shall implement the provisions of the Swainson's Hawk Nest Monitoring and Mitigation Plan. A report documenting measures taken to avoid and minimize impacts to Swainson's hawk nests shall be prepared by the qualified biologist following the completion of Project component construction and submitted to PWD for review and approval.

Mitigation Measure BIO-9: Mohave Ground Squirrel Avoidance and Minimization Measures. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for Mohave ground squirrel is identified within 50 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. PWD shall retain a qualified biologist to conduct a focused habitat assessment (visual survey) of the Project component site following the CDFW's Mohave Ground Squirrel Survey Guidelines (CDFW 2023c) to assess the potential habitat suitability for the species. If suitable habitat is identified, protocol live-trapping surveys shall be conducted in areas of suitable habitat to assess the potential presence and relative abundance of Mohave ground squirrel within the Project component site. Pursuant to the protocol outlined in the Mohave Ground Squirrel Survey Guidelines, trapping surveys shall take place over three terms in specific timing windows in the period of March 15 and July 15 immediately prior to commencement of Project component activities. If construction starts one year or more after the conclusion of surveys, PWD shall consult with CDFW as to whether additional surveys are required and shall retain a qualified biologist to conduct additional surveys if recommended by CDFW. Findings of the habitat assessment and live-trapping surveys shall be documented in a report that also details survey methodology, timing, and surveyor qualifications. If no Mohave ground squirrels are discovered during the protocol surveys, no further action is required.

If Mohave ground squirrels are observed during the surveys, PWD shall retain a qualified biologist to develop a Mohave ground squirrel biological monitoring plan, in coordination with CDFW, that includes measures to avoid, minimize, and/or mitigate potential impacts as a result of Project component activities, including, but not limited to:

- A qualified biologist shall conduct pre-construction clearance surveys for Mohave ground squirrel no more than 30 days prior to the start of any ground-disturbing activities in areas of the Project component site that contain suitable habitat for the species, as documented in the Mohave ground squirrel habitat assessment and survey report. The survey shall cover 100 percent of the anticipated impact area intersecting suitable Mohave ground squirrel habitat and a 50-foot buffer (survey area). A qualified biologist shall document locations of potential Mohave ground squirrel burrows. A 50-foot no-disturbance buffer shall be established around suspected or known Mohave ground squirrel burrows. Project component activities shall not be conducted within the no-disturbance buffer unless at the discretion of the qualified biologist. A report documenting the results of the survey, locations of suspected or known Mohave ground squirrel burrows, and recommended no-disturbance buffers shall be submitted to PWD for review and approval prior to commencement of Project component activities in the survey area.
- If burrows are identified during the survey that are suspected or known to be occupied by Mohave ground squirrel and cannot be avoided, the qualified biologist shall prepare a Mohave

Ground Squirrel Relocation Plan outlining measures to relocate individual Mohave ground squirrels prior to construction start. The plan shall be submitted to PWD and CDFW for review and approval and shall be implemented prior to commencement of Project component activities in work areas with suspected or known Mohave ground squirrel burrows. The Plan shall outline measures for burrow excavation, handling of individuals, identification of proposed relocation areas, and release of relocated individuals after the conclusion of all grading, clearing, and construction activities. A report documenting relocation activities and outcomes shall be prepared by the qualified biologist and submitted to PWD and CDFW for review and approval after completion of relocation activities. The Plan shall also detail restoration of and/or compensatory mitigation, at a minimum 1:1 ratio, of occupied Mohave ground squirrel habitat that is temporarily or permanently impacted by the Project activities if required by CDFW as part of the Incidental Take Permit process pursuant to CFGC Section 2081 for the Project component.

- Within occupied Mohave ground squirrel habitat (as determined by the results of the focused habitat assessment and live trapping survey results as well as the pre-construction clearance survey results), the area of disturbance of vegetation and soils shall be the minimum required for the Project component. Clearing of vegetation and grading shall be minimized. Wherever practicable, rather than clearing vegetation and grading access routes, equipment and vehicles shall use existing surfaces or previously disturbed areas. Where grading is necessary, surface soils shall be stockpiled and replaced following construction. To the extent practicable, disturbance of shrubs and surface soils due to stockpiling shall be minimized. A qualified biologist shall monitor Project component activities during initial ground disturbance in suitable Mohave ground squirrel habitat. The qualified biologist shall work with the construction foreman and crew to implement and achieve compliance with the Mohave ground squirrel biological monitoring plan prepared for the Project component.

Mitigation Measure BIO-10: Roosting Bats Avoidance and Minimization Measures. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for special-status bats is identified within the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. PWD shall implement the following measures for special-status roosting bats:

- To the extent feasible, demolition or disturbance of suitable bat roosting habitat (e.g., live and dead trees, rock outcrops) shall be scheduled between October 1 and February 28, outside of the maternity roosting season.
- If suitable roost trees must be encroached during the maternity season (March 1 to September 30) or structures must be removed at any time of the year, PWD shall retain a qualified bat specialist to conduct a pre-construction survey no more than seven days prior to the start of Project component construction in a given work area to identify those trees or structures proposed for disturbance that could provide hibernacula or nursery colony roosting habitat for bats. The trees or structures shall be closely inspected by the bat specialist to determine the presence or absence of roosting bats. If potentially suitable hibernacula or nursery colony roosting habitat for bats is not present in areas anticipated to be directly impacted by Project component activities, no additional action is required.
- Trees or structures determined to be maternity roosts shall be left in place until the end of the maternity season (March 1 to September 30). Any structure containing a hibernating colony

shall be left in place until a qualified bat specialist determines the bats are no longer hibernating.

- If bats are not detected, but the bat specialist determines roosting bats may be present at any time of year, trees or structures shall be brought down in a controlled manner using heavy machinery. To ensure the optimum warning for any roosting bats that may still be present, the trees or structures shall be nudged lightly two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active. Trees or structures may then be pushed to the ground slowly under the supervision of a qualified bat specialist. Felled trees shall remain in place until they are inspected by a bat specialist. Trees that are known to be bat roosts shall not be sawed up or mulched immediately. A period of at least 48 hours shall elapse prior to such operations to allow bats to escape.
- The bat specialist shall document all demolition monitoring activities and prepare a summary report for review and approval by PWD upon completion of tree disturbance or structure demolition activities.
- In exceptional circumstances, such as when roosts cannot be avoided and bats cannot be evicted by non-invasive means, it may be necessary to capture and transfer the bats to appropriate natural or artificial bat roosting habitat in the surrounding area. Bats raising young or hibernating shall not be captured and relocated. Capture and relocation shall be performed by a qualified bat specialist in coordination with CDFW requirements and shall be subject to approval by CDFW.
- If confirmed occupied or formerly occupied bat roosting habitat is destroyed during Project component construction, the bat specialist shall determine the need for artificial bat roosts based on the availability and condition of suitable bat roosts in the immediate vicinity of the Project component site. If artificial bat roosts are deemed necessary due to a potential lack of suitable bat roosts in the area, the artificial roosts shall be of comparable size and quality and shall be constructed and maintained at a suitable undisturbed area. The design and location of the artificial bat roosts shall be determined by the bat specialist in consultation with CDFW and pursuant to the following standards:
    - A monitoring plan shall be prepared for the replacement roosts, which shall include performance standards for the use of the replacement roosts by the displaced species, as well as provisions to prevent harassment, predation, and disease of relocated bats. The performance standards shall consider the location and condition of habitat where replacement roosts are placed and shall be sufficient to serve the number of bats estimated to be displaced by Project component impacts to suitable roosting habitat. Annual reports detailing the success of roost replacement and bat relocation shall be prepared and submitted to PWD and CDFW for five years following relocation. If artificial roosts are not in use by the third year of monitoring, PWD shall consult with CDFW as to larger trends in bat populations in the area that may be affecting roost use and/or determine if adjustments to roost location or design are needed.

Mitigation Measure BIO-11: Woodrat Midden Avoidance and Minimization Measures. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for special-status woodrat species is identified within 10 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. PWD shall retain a qualified biologist to conduct a pre-construction survey for

active woodrat middens in and adjacent to areas anticipated for ground disturbance or vegetation removal in the Project component site within 30 days prior to initial site disturbance at each construction site. A report documenting pre-construction survey results, including the location of any active woodrat middens, shall be submitted to PWD for review and approval. If no active woodrat middens are observed during the pre-construction survey, no additional action shall be required.

All occupied woodrat middens shall be mapped and flagged for avoidance to the extent feasible, with a minimum 10-foot buffer surrounding the active midden. If avoidance is not feasible, middens shall be "daylighted" by a qualified biologist one night before anticipated vegetation removal or ground disturbance within each construction site to allow for the rats to escape and passively relocate prior to disturbance of the area. A brief report documenting the passive relocation actions taken shall be submitted to PWD for review and approval prior to commencement of Project component construction activities within 10 feet of the active woodrat middens.

Mitigation Measure BIO-12: Preconstruction Surveys for Special-Status Wildlife Species. PWD shall implement the following preconstruction surveys for special-status wildlife species:

- **All Project Components except Palmdale Ditch Conversion Project:** If suitable habitat for any special-status wildlife species with the potential to occur (e.g., western pond turtle, Northern California legless lizard, California legless lizard, California glossy snake, coast horned lizard, two-striped gartersnake, pallid bat, Townsend's big-eared bat, San Diego desert woodrat) is identified during the habitat assessment conducted pursuant to Mitigation Measure BIO-1, pre-construction surveys shall be required prior to ground-disturbing activities. If any of these species are identified on or near construction areas during the preconstruction survey, Mitigation Measures BIO-13 through BIO-16 shall be implemented. Additional avoidance measures may include establishing a buffer around the species or host plants if a population of a special-status species is observed.
- **Palmdale Ditch Conversion Project:** PWD shall retain a qualified biologist to conduct a pre-activity clearance survey for special-status reptile species no more than seven days prior to commencement of ground or vegetation disturbing activities at each work area within the Palmdale Ditch Conversion project site. The pre-activity survey shall utilize methods to detect special-status reptile species with potential to occur at the site. Prior to commencement of Palmdale Ditch Conversion project construction activities at each work area, the methods and results of the surveys and, if a special-status reptile species is found, recommended species-specific avoidance and/or relocation measures, shall be submitted in a report for review and approval by PWD, and implemented during construction activities. These measures may include, but would not be limited to, the qualified biologist conducting a sweep of the proposed impact areas before the daily start of construction in each work area in the locations where special-status reptile individuals were observed during the pre-construction survey, or have moderate or high potential to occur based on habitat suitability as determined by the qualified biologist, and avoidance of work in the sweep areas until the qualified biologist confirms special-status reptiles are not present, or if present, until they have moved out of harm's on their own, as determined by the qualified biologist, or have been moved out of harm's way to adjacent suitable habitat by the qualified biologist.

Mitigation Measure BIO-13: General Best Management Practices. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which

special-status wildlife species are identified during the pre-construction survey conducted pursuant to Mitigation Measure BIO-12 and/or for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted. PWD shall require construction contractor(s) and their personnel to adhere to the following general BMPs during construction:

- Construction-related vehicles shall observe a 10-mile-per-hour speed limit within the unpaved limits of construction.
- All open trenches or excavations shall be fenced and/or sloped to prevent entrapment of wildlife species.
- All food-related trash items such as wrappers, cans, bottles, and food scraps generated during construction shall be disposed of in closed containers only and removed daily from the construction site.
- No deliberate feeding of wildlife shall be allowed.
- No pets shall be allowed on the construction site.
- No firearms shall be allowed on the construction site.
- Vehicle or equipment maintenance shall be performed in designated staging areas.
- Access to the construction area outside of established work hours for the proposed Palmdale Ditch Conversion project shall be prohibited.
- If construction must occur at night (i.e., between dusk and dawn), all lighting shall be shielded and directed downward to minimize the potential for glare or spillover.
- During construction, heavy equipment shall be operated in accordance with standard BMPs. All equipment used on-site shall be properly maintained to avoid leaks of oil, fuel, or residues. Provisions shall be in place to remediate accidental spills.
- While encounters with special-status species are not anticipated, any worker who inadvertently injures or kills a special-status species or finds one dead, injured, or entrapped shall immediately report the incident to the construction foreman or biological monitor (required under Mitigation Measure BIO-16). The construction foreman or biological monitor shall immediately notify PWD.

Mitigation Measure BIO-14: Work Limit Delineation. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which special-status wildlife species are identified during the pre-construction survey conducted pursuant to Mitigation Measure BIO-12 and/or for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted. PWD shall clearly identify work area limits on design and construction plans and shall require its construction contractor(s) to delineate and clearly mark approved construction work area limits with flagging or temporary orange construction fencing in the field prior to initial ground disturbing activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). The marked boundaries shall be maintained for the duration of construction activities in each work area and shall be clearly visible to personnel on foot and by heavy equipment operators. Fencing or other barriers shall be placed on the impact side of the work area limit (i.e., within the construction site boundaries) to reduce the potential for encroachment and additional vegetation loss within adjacent open space. Fencing shall be installed pursuant to the approved construction and grading

plans. Prior to initial ground disturbing activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation), the biological monitor (if required under Mitigation Measure BIO-16) shall verify the limits of construction have been properly staked and are readily identifiable. Employees shall strictly limit their activities and vehicles to the designated construction area, staging areas, and routes of travel. Intrusion by unauthorized vehicles outside of construction limits shall be prohibited, with control exercised by an on-site foreman. All temporary fencing shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site.

Mitigation Measure BIO-15: Construction Worker Environmental Awareness Program. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which special-status wildlife species are identified during the pre-construction survey conducted pursuant to Mitigation Measure BIO-12 and/or for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted. PWD shall retain a qualified biologist to conduct a preconstruction WEAP training for all personnel working on the Project component. The WEAP shall aid workers in recognizing special-status species and regulated biological resources known to occur (e.g., western Joshua trees, sensitive natural communities, jurisdictional waters or wetlands) or potentially occurring on the Project component site (as determined by the preconstruction survey conducted pursuant to Mitigation Measure BIO-12 and the qualified biological monitor identified in Mitigation Measure BIO-16 and as confirmed by the results of the focused surveys conducted pursuant to Mitigation Measures BIO-2 through BIO-11) and focus on conditions and protocols necessary to avoid and minimize potential impacts to biological resources. All personnel associated with construction of the Project component shall attend the WEAP training prior to initiation of construction activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). The training shall include information about the special-status species potentially occurring within the Project component site, identification of special-status species and habitats, a description of the regulatory status and general ecological characteristics of special-status resources, and a review of the limits of construction and measures required to avoid and minimize impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employees, and other personnel involved with construction. All employees working at the Project component construction site shall sign a form provided by the trainer documenting they have attended the WEAP and understand the information presented to them. The signed form shall be provided to PWD as documentation of training completion. The crew foreman shall be responsible for ensuring crew members adhere to the guidelines and restrictions designed to avoid impacts to special-status species and other regulated biological resources. If new personnel are brought onto the Project component after completion of the initial WEAP training, the training shall be conducted for all new personnel before they can participate in Project component construction activities. Construction personnel shall be instructed to not directly harm any special-status species on site by halting activities until the species can move to off-site areas or contact a qualified biologist to move the species out of harm's way, if appropriate.

Mitigation Measure BIO-16: Qualified Biological Monitor. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which special-status wildlife species are identified during the pre-construction survey conducted pursuant to Mitigation Measure BIO-12 and/or for which protected oak trees, oak woodlands, California juniper, or native

desert vegetation may be impacted. PWD shall retain a qualified biological monitor with relevant experience with the taxa and species in the Antelope Valley desert and mountain foothills for which pre-construction surveys, monitoring, or other support is required during Project component construction (potentially including, but not limited to, special-status plants, Northern California legless lizard, coast horned lizard, raptors, nesting birds, roosting bats, woodrats, and those special-status species with potential to occur based on the results of pre-activity and focused surveys conducted prior to Project component initiation in accordance with Mitigation Measures BIO-2 through BIO-12 and Mitigation Measure BIO-17). The qualified biologist role may be satisfied by one or more individuals depending on qualifications and experience with one or more species and taxa. The qualified biologist shall be present during initial ground disturbance or vegetation removal activities and shall have the authority to temporarily stop work if one or more special-status species are observed that may be impacted by Project component activities. The biologist shall relocate special-status amphibian, reptile, or mammals present within anticipated Project component impact areas to suitable undisturbed habitat outside the areas directly and indirectly affected by construction activities. The biologist shall hold the requisite incidental take permits or authorizations for the capture and handling of the species, if applicable.

The biologist shall recommend measures to ensure compliance with avoidance and minimization measures, applicable permit conditions, and conditions required for observed special-status species. When the biologist is present on site, they shall be responsible for:

- Verifying Project compliance with environmental mitigation measures and requirements;
- Establishing lines of communication and reporting methods in coordination with the construction crew foreman and PWD;
- Conducting pre-construction clearance sweeps for special-status species and nesting birds, as needed;
- Documenting special-status species observations;
- Recommending preventative or protective actions to avoid and minimize potential Project impacts to regulated biological resources where feasible;
- Recommending actions to be taken in the event of non-compliance; and
- Daily and weekly reporting of compliance.
- Monitoring logs documenting the above shall be submitted to PWD for review and approval for the duration of Project component construction.

Mitigation Measure BIO-17: Nesting Bird Surveys and Avoidance and Minimization Measures. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for nesting birds is identified during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. Project component construction activities shall occur outside of the bird breeding season (February 1 to August 31) to the extent practicable. If construction must commence within the bird breeding season, PWD shall retain a qualified biologist to conduct a pre-construction nesting bird survey within the disturbance footprint plus a minimum buffer of 100 feet to a maximum buffer of 500 feet depending on species, work activity, and existing ambient conditions, where feasible, no more than seven days prior to initiation of ground disturbance (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation) in each work area.

If the Project component is phased or construction activities stop for more than one week, a subsequent pre-construction nesting bird survey shall be conducted prior to each phase of construction, if initiated during the bird breeding season.

Pre-construction nesting bird surveys shall be conducted during the time of day when birds are active and shall factor in sufficient time to perform this survey adequately and completely. A brief report of the nesting bird survey results, if applicable, shall be submitted to PWD for review and approval prior to ground disturbance and/or vegetation removal activities.

If no nesting birds are observed during pre-construction surveys, no further action is required. If nests are found, an appropriate avoidance buffer of up to 300 feet for passerine (perching birds) nests and up to 500 feet for active, non-listed raptor nests shall be determined by the qualified biologist and demarcated with bright orange construction fencing or other suitable flagging. Active nests shall be monitored at a minimum of once per week until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or parental care for survival. No construction activity shall occur within this buffer until the qualified biologist confirms the breeding/nesting is completed and all the young have fledged. If Project component activities must occur within the buffer, they shall only be conducted at the discretion of the qualified biologist.

Mitigation Measure BIO-18: Invasive Plant Species Control Measures. For the Palmdale Ditch Conversion project and other Project components for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted, PWD shall require the construction contractor(s) and their construction personnel to ensure equipment is free of invasive plant seeds, propagules, and any material which may contain them (e.g., soil). For purposes of this mitigation measure, invasive plant species shall include all species with a California Invasive Plant Council rating of moderate or high. Prior to entering the construction site, equipment shall be inspected to confirm it is free of mud, dirt, and debris. Tire track stations shall be installed at construction site entrances and exits. Staging areas and access routes shall avoid weed infestations, and infestations within the work area(s) shall be flagged and avoided to the maximum extent feasible. Only certified weed-free materials (e.g., fiber rolls, straw, and fill) shall be used during construction.

Mitigation Measure BIO-19: Sensitive Natural Communities And Jurisdictional Features Avoidance, Minimization Measures. Sensitive natural communities and jurisdictional features identified for avoidance within the Project component site shall be demarcated using brightly colored flagging, as necessary, and avoided to the extent feasible during Project component construction. The marked boundaries shall be maintained for the duration of Project component construction activities in each work area and shall be clearly visible to personnel on foot and by heavy equipment operators. Construction personnel shall be instructed to avoid these areas as much as feasible. All temporary flagging shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site. Compliance with this measure shall be documented in the biological monitoring reporting, if required under Mitigation Measure BIO-16.

In addition, PWD shall require its construction contractor(s) and their personnel to implement the following measures:

- Any material/spoils generated from construction shall be located away from sensitive natural communities and jurisdictional features and protected from stormwater run-off using

temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate.

- Materials, hand-held equipment and other non-heavy or non-vehicle equipment shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from sensitive natural communities and jurisdictional areas.
- Any spillage of material shall be stopped if it can be done safely. The contaminated area shall be cleaned, and any contaminated materials shall be properly disposed of. For all spills, the Project foreman and biological monitor (if required under Mitigation Measure BIO-16) shall be notified.

If impacts to sensitive natural communities cannot be avoided, PWD shall identify compensatory mitigation prior to disturbance of the features. Mitigation may take the form of permittee-responsible, on-site or off-site mitigation or the purchase of credits from an approved mitigation bank or through applicant-sponsored mitigation (e.g., purchase and/or dedication of land for mitigation). If required, compensatory mitigation for unavoidable impacts to sensitive vegetation communities shall be accomplished at a minimum ratio of 1:1; however, the final ratio shall be determined and approved by CDFW if a Lake or Streambed Alteration Agreement pursuant to CFGC Section 1602 or Incidental Take Permit pursuant to CFGC Section 2081 is required for the Project component. If on-site or off-site restoration would occur, PWD shall retain a qualified biologist to develop a Habitat Revegetation, Restoration, and Monitoring Program and submitted for CDFW approval prior to the commencement of Project component construction (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). At a minimum, the program shall include the following:

- A description of the purpose and goals of the restoration
- Identification of success criteria and performance standards
- Methods of site preparation, including topsoil salvage and replacement procedures
- Irrigation plan and schedule
- Best Management Practices (BMPs)
- Maintenance and monitoring program
- Adaptive management strategies
- Key stakeholders and responsible parties
- Funding
- Contingencies

Mitigation Measure BIO-20: Aquatic Resources Delineation and Compensatory Mitigation. An aquatic resources delineation shall be conducted to determine the limits of potential jurisdictional aquatic resources within the vicinity of proposed Project components. The results of the aquatic resources delineation shall be used during proposed Project component design to determine if aquatic resources can be avoided. If aquatic resources can be avoided, then no compensatory measures are necessary. Avoidance of aquatic resources within Project component sites shall be implemented according to Mitigation Measure BIO-19.

If impacts to jurisdictional waters and wetlands cannot be avoided, PWD shall identify compensatory mitigation prior to disturbance of the features. Compensatory mitigation for impacts to the jurisdictional extents of the Palmdale Ditch shall be provided at a minimum 0.5:1 ratio given the Ditch's altered hydrology as a manmade structure constructed entirely in uplands that is artificially lined in a number of areas (concrete, synthetic liner, elevated flume) and its controlled flow that fluctuates in quantity and timing from year to year depending on annual climatic conditions and available water supply in Littlerock Reservoir. Compensatory mitigation for impacts to other jurisdictional waters and wetlands shall be provided at a minimum 1:1 ratio, unless a higher ratio is required by Lahontan RWQCB, CDFW, and/or USACE. Mitigation may take the form of permittee-responsible, on-site or off-site mitigation or the purchase of credits from an approved mitigation bank. If on-site or off-site mitigation is proposed, a Compensatory Mitigation Plan shall be prepared that outlines the compensatory mitigation in coordination with the Lahontan RWQCB, CDFW, and/or USACE. If on-site mitigation is proposed, the Compensatory Mitigation Plan can be integrated with the Habitat Revegetation, Restoration, and Monitoring Program described in Mitigation Measure BIO-19 and shall identify those portions of the site, such as relocated drainage routes, that contain suitable characteristics (e.g., hydrology) for restoration. Determination of mitigation adequacy shall be based on comparison of the restored habitat with similar, undisturbed habitat in the site vicinity. The Compensatory Mitigation Plan shall include remedial measures if performance criteria are not met. If the Compensatory Mitigation Plan is not integrated with the Habitat Revegetation, Restoration, and Monitoring Program described in Mitigation Measure BIO-19, the same reporting requirements shall apply for monitoring and evaluation of Compensatory Mitigation Plan implementation as detailed in Mitigation Measure BIO-19.

If off-site mitigation is proposed, off-site land shall be preserved through a deed restriction or conservation easement and the Compensatory Mitigation Plan shall identify an approach for funding assurance for the long-term management of the conserved land.

Mitigation Measure BIO-21: Groundwater-Dependent Ecosystems. If the proposed Project (particularly rehabilitation of groundwater wells 6A, 15, 18, 19, 30, and/or 33 and/or replacement wells) is in proximity to mapped GDEs, then representative groundwater monitoring stations shall be installed within GDEs to track groundwater levels and vegetation responses over time. Prior to implementation of the proposed Project, the GDEs that may potentially be affected by the proposed Project shall be mapped to identify the baseline conditions, including the extent of vegetation communities (e.g., via vegetation mapping on the ground and via remote sensing) and composition of vegetation (e.g., percent cover via transects on the ground) that comprises each vegetation community. Baseline data shall be collected, and long-term monitoring shall be conducted for areas of potential affect as well as representative control sites with similar conditions (to account for other variables, such as changes in climate, precipitation, etc.). Thresholds for changes in vegetation over time shall be established prior to proposed Project implementation (e.g., greater than 20 percent vegetation decline that correlates with increased pumping and decreased groundwater levels). Monitoring shall be conducted for a minimum 5-year period following any increase in groundwater pumping that is beyond the existing range of pumping currently conducted (i.e., prior to the Project) for the life of the proposed Project. If there is no impact to GDEs, then no further mitigation is necessary.

If GDEs are impacted by the proposed Project, then adaptative management measures shall be implemented to reduce pumping to changes in vegetation to allow for re-establishment of vegetation communities to pre-existing conditions, which will be determined by monitoring for a

minimum of an additional three years or until pre-existing conditions (i.e., both groundwater monitoring well levels and GDE vegetative cover) are obtained. Alternatively, if adaptive management measures cannot be implemented to reduce pumping and re-establish pre-existing conditions, then mitigation for permanent impacts to GDEs would include:

On- and/or off-site creation, restoration, and/or enhancement of in-kind GDE habitat at a ratio no less than 1:1 for permanent impacts. Off-site creation, restoration, and/or enhancement at a ratio no less than 1:1 may include the purchase of mitigation credits at an off-site mitigation bank or in-lieu fee program.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.3), the Board finds that implementation of the proposed Project could potentially result in significant impacts on biological resources. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures BIO-1 through BIO-21 would ensure that the potential Project impacts to special status species would be mitigated to less than significant levels.

Impact BIO-2: The proposed project could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.

Construction: Pure Water Antelope Valley

Because the Pure Water Antelope Valley project would be located within vacant land, it is possible that the construction could impact riparian habitat and jurisdictional aquatic features that are regulated by the CDFW as well as sensitive natural communities. Impacts from construction to riparian habitat, jurisdictional aquatic features, and/or sensitive natural communities would be potentially significant. Implementation of Mitigation Measure BIO-20 would require an aquatic resources delineation be conducted, and siting of proposed Project facilities, injection wells, pipelines, and brine ponds to either avoid impacts to jurisdictional aquatic features and associated riparian habitat or, if such impacts cannot be avoided, require PWD to obtain the appropriate regulatory approvals and provide compensatory mitigation as appropriate. With implementation of this mitigation measure, impacts to jurisdictional aquatic features and riparian habitat would be less than significant.

Implementation of Mitigation Measure BIO-19 would require either avoidance of CDFW sensitive natural communities such Joshua trees and/or California junipers or implementation of compensatory mitigation if avoidance is not feasible. With implementation of these mitigation measures, impacts to sensitive natural communities would be less than significant.

Construction: Existing Well Rehabilitation and/or Replacement

If construction from rehabilitation or replacement wells encroaches on undeveloped land with riparian habitat or regulated aquatic jurisdictional features or other sensitive communities impacts to riparian habitat, jurisdictional aquatic features that are regulated by the CDFW, and/or sensitive natural communities could be potentially significant. Implementation of Mitigation Measure BIO-20 would require an aquatic resources delineation be conducted, and avoiding impacts to jurisdictional aquatic features and associated riparian habitat or, if such impacts cannot be avoided, obtain the appropriate regulatory approvals and

provide compensatory mitigation as appropriate. With implementation of this mitigation measure, impacts to jurisdictional aquatic features and riparian habitat would be less than significant. Implementation of Mitigation Measure BIO-19 would require either avoidance of CDFW sensitive natural communities or compensatory mitigation. With implementation of this mitigation measure, impacts to sensitive natural communities would be less than significant.

Construction: Palmdale Ditch Conversion Project

Construction of Palmdale Ditch Conversion Project would potentially have a substantial adverse effect on riparian habitat vegetation or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS, and impacts would be significant. Implementation of Mitigation Measures BIO-19 and BIO-20, which include avoidance and minimization of potential impacts to sensitive natural communities and riparian habitat vegetation to the extent feasible as well as compensatory mitigation for impact areas at a minimum ratio of 1:1, would be required to reduce proposed Project impacts to sensitive natural communities, riparian habitat vegetation, and Littlerock Wash RCA to less than significant levels. In the ANF, PWD would also be required to comply with the USFS requirements regarding RCAs. With implementation of these mitigation measures, impacts to sensitive natural communities and riparian habitat vegetation would be less than significant.

Operation: Existing Well Rehabilitation and/or Replacement

There could be localized effects from greater groundwater pumping if done in the well locations in proximity to GDEs. Thus, impacts to GDEs would be potentially significant. Implementation of Mitigation Measure BIO-21 would require GDE monitoring to determine impacts and adaptive management and/or mitigation if impacts occur. With implementation of this mitigation measure, impacts to GDEs would be less than significant.

Mitigation Measures

Mitigation Measure BIO-19 through BIO-21: Above, shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.3), the Board finds that implementation of the proposed Project could potentially result in significant impacts on biological resources. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures BIO-19 through BIO-21 would ensure that the potential Project impacts to riparian habitat or other sensitive natural communities would be mitigated to less than significant levels.

Impact BIO-3: The proposed project could have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Impacts to jurisdictional waters of the State and State-protected wetlands would be potentially significant. Implementation of Mitigation Measures BIO-19 and BIO-20 would require an aquatic resources delineation be conducted, and siting of proposed Project facilities, injection wells, pipelines, and brine ponds to either avoid impacts to jurisdictional waters of the State and State-protected wetlands or, if such impacts cannot

be avoided, obtain the appropriate regulatory approvals and provide compensatory mitigation as appropriate. With implementation of these mitigation measures, impacts to jurisdictional waters of the State and State-protected wetlands would be less than significant.

Mitigation Measures

Mitigation Measure BIO-19: Above, shall apply

Mitigation Measure BIO-20: Above, shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.3), the Board finds that implementation of the proposed Project could potentially result in significant impacts on biological resources. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures BIO-19 and 20 would ensure that the potential Project impacts to state or federally protected wetlands would be mitigated to less than significant levels.

Impact BIO-4: Potential to 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.

Impacts may include direct mortality to individuals from crushing or loss of habitat (i.e., vegetation removal). Indirect impacts to active nests may occur due to disturbance from human activities, construction noise, and vibration. Therefore, impacts to nesting birds would be potentially significant. Implementation of Mitigation Measures BIO-1 and BIO-17, which require a habitat assessment, and if suitable habitat is present, requires that pre-construction nesting bird surveys be conducted prior to construction and protection of any active nests found, would reduce impacts to nesting birds to a less than significant level.

Mitigation Measures

Mitigation Measure BIO-1: Above shall apply

Mitigation Measure BIO-17: Above shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.3), the Board finds that implementation of the proposed Project could potentially result in significant impacts on biological resources. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures BIO-1 and BIO-17 would ensure that the potential Project impacts to migratory wildlife or wildlife corridors would be mitigated to less than significant levels.

Impact BIO-5: The proposed project could conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

For any proposed Project components that could result in impacts to oak trees, impacts would be potentially significant. Implementation of Mitigation Measures BIO-13 through BIO-16, BIO-18, and BIO-19, which require implementation of BMPs, work limit delineation, a WEAP, invasive plant species control, biological construction monitoring, and habitat revegetation, restoration, and monitoring, would ensure the proposed Project would not conflict with the ordinance. Thus, the proposed Project is within the goals of the Los Angeles Oak Tree Ordinance, Woodland Management Plan, or Woodland Guide, and the impact would be less than significant with mitigation incorporated.

Trees may be impacted by proposed Project activities including ground disturbance and vegetation removal for Project components, including but not limited to construction equipment/vehicle access and installation of the underground pipeline for the Palmdale Ditch Conversion Project. Implementation of Mitigation Measures BIO-2, BIO-3, BIO-13 through BIO-16, BIO-18, and BIO-19, which require avoidance of special-status plants and western Joshua Tree where feasible, compensatory mitigation, implementation of BMPs, work limit delineation, a WEAP, invasive plant species control, biological construction monitoring, and habitat revegetation, restoration, and monitoring), would ensure the proposed Project would be consistent with the goals of the City's Native Desert Vegetation Ordinance. Thus, the proposed Project would not conflict with any local policies or ordinances protecting biological resources and the impact would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure BIO-2: Above shall apply

Mitigation Measure BIO-3: Above shall apply

Mitigation Measure BIO-13 through BIO-16: Above shall apply

Mitigation Measure BIO-18: Above shall apply

Mitigation Measure BIO-19: Above shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.3), the Board finds that implementation of the proposed Project could potentially result in significant impacts on biological resources. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures BIO-2, Bio-3, BIO-13 through BIO-16, BIO-18, BIO-19 would ensure that the potential Project impacts from conflicts with any local policies or ordinances protecting biological resources would be mitigated to less than significant levels.

Impact BIO-6: The proposed project could conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.

Construction: Palmdale Ditch Conversion Project

Construction of the Palmdale Ditch Conversion project would potentially conflict with the provisions of the Los Angeles County SEA Program and the County's 2035 General Plan, and impacts would be significant. Implementation of Mitigation Measures BIO-2 and BIO-4 through BIO-20, which require implementation of BMPs; work limit delineation; a WEAP; special-status species surveys and avoidance, minimization, and compensatory measures; invasive plant species control; biological monitoring; and habitat revegetation, restoration, and monitoring, would be required to achieve consistency with the goals and policies of the Los Angeles County 2035 General Plan and SEA Program. Impacts would be less than significant with mitigation incorporated.

The Palmdale Ditch Conversion project would potentially conflict with the 2005 ANF Land Management Plan and San Gabriel Mountains National Monument Plan, and impacts would be significant. Implementation of Mitigation Measures BIO-2 and BIO-4 through BIO-20 would be required to reduce potential Project impacts to special-status species, stability of special-status species habitat, control of invasive species, and vegetation restoration to less than significant and to facilitate conformance with the program strategies and tactics outlined for biological resources in the ANF Land Management Plan, including WL-1, WL-2, IS-1, and FH-1, and the relevant desired conditions of the San Gabriel Mountains National Monument Plan. With implementation of these mitigation measures, the Palmdale Ditch Conversion project would not conflict with the 2005 ANF Land Management Plan or the San Gabriel Mountains National Monument Plan. Impacts would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure BIO-2: Above shall apply

Mitigation Measure BIO-4 through BIO-20: Above shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.3), the Board finds that implementation of the proposed Project could potentially result in significant impacts on biological resources. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures BIO-2 and BIO-4 through BIO-20 would ensure that the potential Project impacts from conflicts with any local policies or ordinances protecting biological resources would be mitigated to less than significant levels.

2.4.2.4 Cultural and Tribal Resources

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.

Construction: Pure Water Antelope Valley

Taking into account the components of the Pure Water Antelope Valley project are each underlain by Holocene alluvium, the anticipated excavation depths of the proposed Project (even within existing roads), and the proximity of the Project area within the north wellfield to previously recorded resources, this proposed Project component exhibits the potential to encounter historic architectural resources and intact archaeological deposits that may qualify as a historic resource under CEQA. If such resources are encountered, impacts could be significant. With implementation of Mitigation Measures CUL-1 through

CUL-7, which would involve which would involve the retention of a Qualified Architectural Historian and Archaeologist; the completion of Historic and Archaeological Resources Assessments; WEAP Training; Archaeological monitoring; Native American monitoring; and procedures for unanticipated discovery of cultural resources, impacts would be reduced to a less than significant level.

Construction: Existing Well Rehabilitation and/or Replacement

Taking into account the anticipated excavation depth for the Existing Well Rehabilitation and/or Replacement project, the fact that each of the existing wells in the PWD service area are at locations underlain by Holocene soils, and the proximity of several existing wells in the north well field to previously recorded resources demonstrates this Project component and has potential to encounter historic architectural resources and intact archaeological deposits that may qualify as a historic resource under CEQA. If such resources are encountered, impacts would be significant. With implementation of Mitigation Measures CUL-1 through CUL-7, which would involve the retention of a Qualified Architectural Historian and Archaeologist; the completion of Historic and Archaeological Resources Assessments; WEAP Training; Archaeological monitoring; Native American monitoring; and procedures for unanticipated discovery of cultural resources, impacts to historic resources would be reduced to a less than significant level.

Construction Palmdale Ditch Conversion Project

Implementation of the Palmdale Ditch Conversion project could result in a potentially significant impact to unanticipated discoveries. With implementation of **Mitigation Measures CUL-1** and **CUL-4** through **CUL-7**, which would involve the retention of a qualified Archaeologist, Worker Environmental Awareness Program (WEAP) training, archaeological monitoring, Native American monitoring, and procedures for unanticipated discovery of cultural resources, impacts to historic resources would be reduced to a less than significant level.

Mitigation Measures

Mitigation Measure CUL-1: Cultural Resources Professional Qualifications Standards. PWD shall retain an archaeologist and architectural historian meeting the minimum professional qualifications standards set forth by the Secretary of the Interior (SOI) (codified in 36 Code of Federal Regulations [CFR] Part 61; 48 FR 44738-44739) (Qualified Archaeologist and Qualified Architectural Historian) to oversee the implementation of all mitigation related to cultural resources. All cultural resources documentation resulting from the program shall be filed with the South-Central Coastal Information Center upon document completion.

Mitigation Measure CUL-2: Historic Resources Assessment. Prior to Project-related construction activities involving demolition or alteration of buildings and/or structures or the construction of above ground infrastructure, the Qualified Architectural Historian shall conduct a historic resources assessment of affected properties over 45 years in age. The assessment shall include a records search at the South-Central Coastal Information Center or review of a prior record search conducted within the previous one year; a review of other pertinent archives and sources; a pedestrian field survey; recordation of all identified historic architectural resources on California Department of Parks and Recreation 523 forms; evaluation of resources which may be eligible for listing in the California Register under Criteria 1-4 (i.e., meets the definition for historical resource in CEQA Guidelines subdivision 15064.5[a]), and for local listing; and preparation of a technical report documenting the methods and results of the assessment. If a historic architectural resource is found

eligible, the Qualified Architectural Historian shall coordinate with the PWD to ensure the Project component is constructed in a manner consistent with the Secretary of the Interior's Standards.

Mitigation Measure CUL-3: Archaeological Resources Assessment. Prior to development of previously unevaluated Project components that involve ground disturbance, PWD shall retain a Qualified Archaeologist, defined as meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (codified in 36 CFR Part 61; 48 FR 44738-44739), to conduct an archaeological resources assessment including: a records search update at the South Central Coastal Information Center; a pedestrian field survey, where deemed appropriate by the Qualified Archaeologist; recordation of all identified archaeological resources on California Department of Parks and Recreation 523 forms; and preparation of a technical report documenting the methods and results of the study, and providing an assessment of the Project area's archaeological sensitivity and the potential to encounter subsurface archaeological resources and human remains. All identified archaeological resources shall be assessed for the Project's potential to result in direct and/or indirect effects to those resources and any archaeological resource that cannot be avoided shall be evaluated for its potential significance prior to PWD's approval of Project plans and publication of subsequent CEQA documents. The Qualified Archaeologist shall provide recommendations regarding archaeological monitoring to be conducted in accordance with Mitigation Measure CUL-4, protection of avoided resources and/or recommendations for additional work or treatment of significant resources that will be affected by the Project.

Mitigation Measure CUL-4: Construction Worker Cultural Resources Sensitivity Training. For Project components involving ground disturbance, the Qualified Archaeologist shall implement a cultural resources sensitivity training program. The Qualified Archaeologist, or their designee, shall instruct all construction personnel of the types of archaeological resources cultural materials that may be encountered, cultural sensitivity issues, applicable laws protecting cultural resources, the proper treatment procedures to be enacted in the event of an inadvertent discovery of archaeological cultural resources materials or human remains, applicable laws protecting archaeological resources, and confidentiality of discoveries. Tribal representatives from each of the tribes consulting on the Palmdale Ditch Conversion Project shall be allowed to attend and/or participate in the training should they elect to and shall be given a minimum of ten days' notice prior to the training. In the event that construction crews are phased, additional trainings shall be conducted for new construction personnel. The PWD, or their construction contractor(s), shall ensure construction personnel are made available for and attend the training. PWD shall retain documentation demonstrating attendance.

Mitigation Measure CUL-5: Archaeological Resources Monitoring. Archaeological monitoring shall be required for programmatic Project components and for the Palmdale Ditch Conversion Project as outlines below.

- **Proposed Project Requirements.** Archaeological monitoring shall be determined by the Qualified Archaeologist based on the results of the archaeological resources assessment conducted under CUL-3 and requires the preparation of a Cultural Resources Monitoring Plan (CRMP) prior to the start of Project-related ground disturbance. The CRMP should discuss the monitoring protocols to be carried out during Project construction and should outline the appropriate measures to be followed in the event that cultural resources are encountered and outline requirements for the final monitoring report. In general, for ground- disturbing activities in geologic units/sediments of Higher Sensitivity for encountering subsurface prehistoric archaeological resources or human remains, full time archaeological monitoring shall be

conducted, unless the Qualified Archaeologist has established as part of the archaeological assessment that previous disturbances have reduced the sensitivity for prehistoric archaeological resources to the extent that no or limited archaeological monitoring is warranted. No archaeological monitoring shall be required in geologic units/sediments of Lower Sensitivity for encountering subsurface prehistoric archaeological resources or human remains, or in those areas that have been previously subject to monitoring as part of the Project. If the Qualified Archaeologist determines as a result of the archaeological assessment that areas proposed for ground disturbance may be sensitive for historic-period archaeological resources, those areas shall also be subject to archaeological monitoring at a frequency determined by the Qualified Archaeologist. In all cases, the Qualified Archaeologist shall have the discretion to modify the frequency of monitoring based on soils and stratigraphy observed, the extent of past disturbances, and the type of construction methods employed. Generally, monitoring will not be required of activities employing construction methods such as tunneling and well drilling where soil profiles and spoils are not observable to monitors. The archaeological monitor(s) shall be familiar with the types of resources that could be encountered and shall work under the direct supervision of the Qualified Archaeologist. The number of archaeological monitors required to adequately observe ground-disturbing activities is dependent on the archaeological sensitivity of the area and construction scenario and shall be established by the Qualified Archaeologist. The archaeological monitor(s) shall keep daily logs detailing the types of activities and soils observed, and any discoveries. Archaeological monitor(s) shall have the authority 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 the PWD and the Native American monitor(s) pursuant to TCR-1.

- **Palmdale Ditch Conversion Project Requirements.** Prior to the start of Project-related ground-disturbing activities, a qualified archaeologist shall be retained to prepare a CRMP and provide archaeological monitoring for the Project. The CRMP shall discuss the monitoring protocols to be carried out during Project construction and shall outline the appropriate measures to be followed in the event that cultural resources are encountered. The CRMP shall be submitted to Palmdale Water District (PWD) for dissemination to the tribes consulting on the Project. Once all parties review and agree to the plan, it shall be adopted by PWD – the plan must be adopted prior to permitting for the Project. Any and all findings shall be subject to the protocol detailed within the CRMP. A copy of the final CRMP shall be provided to PWD (and United States Bureau of Reclamation [USBR]/United States Forest Service [USFS], depending on land jurisdiction) and the tribes consulting on the Project upon completion. Archaeological monitoring shall be limited to initial ground disturbance, which is defined as construction-related earthmoving of sediments from their native place of deposition (which includes, but is not limited to, tree/shrub removal and planting, clearing/grubbing, grading, leveling, excavation, trenching, compaction, plowing, fence/gate removal and installation, drainage and irrigation removal and installation, hardscape installation [boulders, walls, etc.], and archaeological work) and does not include any secondary movement of sediment that might be required for the Project (e.g., backfilling). Archaeological monitoring shall be performed under the direction of an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (National Park Service 1983). The archaeological monitor shall have the authority to halt and redirect work should any archaeological resources be identified during monitoring. If archaeological resources are encountered during ground-

disturbing activities, work within 60 feet of the find shall halt, and the find shall be evaluated for listing in the California Register of Historic Resources (CRHR)/National Register of Historic Places (NRHP). A sufficient number of archaeological monitors shall be present each workday to ensure simultaneously-occurring ground-disturbing activities receive thorough levels of monitoring coverage. Archaeological monitoring may be reduced or halted at the discretion of PWD (and USBR/USFS, depending on land jurisdiction), in consultation with the qualified archaeologist and the tribes consulting on the Project, as warranted by conditions such as encountering bedrock, sediments being excavated are fill, or negative findings during the first 50 percent of ground disturbance. If monitoring is reduced to spot-checking, spot-checking shall occur when ground disturbance moves to a new location within the Project site and/or when ground disturbance extends to depths not previously reached (unless those depths are within bedrock). Furthermore, monitoring may be terminated if it is determined the soils within the Area of Potential Effects do not have the potential to contain cultural resources.

Mitigation Measure CUL-6: **Archaeological Resources Discoveries.** In the event that archaeological cultural resources are unexpectedly encountered during ground-disturbing activities, work within 60 feet of the find shall halt, an Environmentally Sensitive Area physical demarcation/barrier installed, and a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) contacted immediately to evaluate the resource. If the resource is determined by the qualified archaeologist to be prehistoric Native American in origin, then a Native American representative from the tribes consulting on the Project shall also be contacted to participate in the evaluation of the resource. If the qualified archaeologist and/or Native American representative from the tribes consulting on the Project determines it to be appropriate, archaeological testing for CRHR/NRHP eligibility shall be completed. If the resource proves to be eligible for the CRHR/NRHP and significant impacts to the resource cannot be avoided via Project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, pursuant to the requirements of CEQA Guidelines Section 15126.4(b)(3)(C). Should the find be prehistoric deemed Native American in origin, all plans for analysis shall be reviewed and approved by PWD (and USBR/USFS, depending on land jurisdiction) and the tribes consulting on the Project prior to implementation, and all removed material shall be temporarily curated on site. The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative(s) from the tribes consulting on the Project, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. PWD shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, pursuant to CEQA Guidelines Section 15126.4(b)(3)(C). PWD shall work with the tribes consulting on the Project to determine the final disposition of any cultural materials removed. However, if the tribes consulting on the Project are not in agreement on the final disposition, PWD shall rebury the artifacts within the Project site in a location free from future disturbance and share the location with the tribes consulting on the Project. Items recovered from USFS lands must be curated in accordance with 36 CFR 79 and cannot be reburied. All draft records/reports containing the significance and treatment findings and data recovery results shall be prepared by the qualified archaeologist and submitted to PWD (and USBR/USFS, depending on land jurisdiction) and the tribes consulting on the Project for their review and comment. A copy of the final report and all site/isolate records shall be submitted to PWD (and

USBR/USFS, depending on land jurisdiction), the tribes consulting on the Project, and the South Central Coastal Information Center.

Mitigation Measure CUL-7: Curation and Disposition of Cultural Materials. PWD shall arrange curation for all Native American archaeological materials, with the exception of funerary objects or grave goods (i.e., artifacts associated with Native American human remains). For eligible Native American archaeological materials, the PWD shall first consider repositories that are accredited by the American Association of Museums and that meet the standards outlined in 36 CFR 79.9. If a suitable accredited repository is not identified, then the PWD shall consider non-accredited repositories as long as they meet the minimum standards set forth by 36 CFR 79.9. If a suitable non-accredited repository is not identified, then the PWD shall donate the collection to a local California Native American Tribe(s). Ineligible archeological materials shall also be donated to a local California Native American Tribe(s). If neither an accredited or non-accredited repository or Tribe accepts the collection, then the PWD may offer the collection to a public, non-profit institution with a research interest in the materials, or to a local school or historical society in the area for educational purposes. Disposition of Native American human remains and associated funerary objects or grave goods shall be determined by the landowner in consultation with the PWD and the Most Likely Descendant (MLD).

The PWD shall curate all eligible historic-period archaeological material, or portions thereof at the discretion of the Qualified Archaeologist, at a repository accredited by the American Association of Museums that meets the standards outlined in 36 CFR 79.9. If no accredited repository accepts the collection, then the PWD may curate it at a non-accredited repository as long as it meets the minimum standards set forth by 36 CFR 79.9. If neither an accredited nor a non-accredited repository accepts the collection, then the PW may offer the collection to a public, non-profit institution with a research interest in the materials, or to a local school or historical society in the area for educational purposes.

Mitigation Measure CUL-8: Historic American Engineering Survey-Like Documentation Package. Prior to the demolition of the Palmdale Ditch (CA-LAN-1534H), PWD should document the structure in a Historic American Engineering Record -like documentation package. The report shall generally comply with the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation (68 Federal Register 43159), Level III. At a minimum, the Historic American Engineering Record Historical Report should include digital photographs of views of Palmdale Ditch and a short-form narrative historical report. Digital copies of the Historic American Engineering Record-like documentation package should be made available to the Los Angeles County Library Acton Agua Dulce Branch and the Palmdale City Library.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.4), the Board finds that implementation of the proposed Project could potentially result in significant impacts on cultural resources. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures CUL-1 and CUL-8 would ensure that the potential Project impacts to historical resources would be mitigated to less than significant levels.

Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5.

Construction: Pure Water Antelope Valley

Taking into account the components of the Pure Water Antelope Valley project are each underlain by Holocene alluvium, the anticipated excavation depths of the Project (even within existing roads), and the proximity of the Project site within the north well field to previously recorded resources, this Project component exhibits the potential to encounter intact archaeological deposits that may qualify as a unique archaeological resource under CEQA. If such resources are encountered, implementation of Mitigation Measures CUL-1 and CUL-3 through CUL-7, which would involve the retention of a Qualified Archaeologist; the completion of an Archaeological Resources Assessment; WEAP Training; Archaeological monitoring; Native American monitoring; and procedures for unanticipated discovery of cultural resources, would reduce impacts to archaeological resources to a less than significant level.

Construction: Existing Wells Rehabilitation and/or Replacement

Taking into account the anticipated excavation depth for the Existing Well rehabilitation and/or Replacement project, the fact that each of the existing wells in the PWD service area are at locations underlain by Holocene soils, and the proximity of several existing wells in the north well field to previously recorded resources, demonstrates this Project component and has potential to encounter intact archaeological deposits that may qualify as a unique archaeological resource under CEQA. If such resources are encountered, significant impacts would result. With implementation of Mitigation Measures CUL-1 and CUL-3 through CUL-7, which would involve the retention of a Qualified Archaeologist; the completion of an Archaeological Resources Assessment; WEAP Training; Archaeological monitoring; Native American monitoring; and procedures for unanticipated discovery of cultural resources, impacts would be reduced to a less than significant level.

Construction: Palmdale Ditch Conversion Project

Given that the Conversion Project is sited in proximity to Barrell Springs and Little Rock Creek and underlain by Holocene alluvium which is known to be conducive to the preservation of buried archaeological deposits, it has the potential to potential to encounter and significantly impact intact archaeological deposits that may qualify as a unique archaeological resource under CEQA and historic property pursuant to Section 106 of the NHPA. If such resources are encountered, impacts would be significant. With implementation of Mitigation Measures CUL-1 and CUL-4 through CUL-7, which would involve the retention of a Qualified Archaeologist; WEAP Training; Archaeological monitoring; Native American monitoring; and procedures for unanticipated discovery of cultural resources, impacts to archaeological resources would be reduced to a less than significant level.

Mitigation

Mitigation Measure CUL-1: Above shall apply

Mitigation Measure CUL-3 through CUL-7: Above shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.4), the Board finds that implementation of the proposed Project could potentially result in significant impacts on cultural resources. Pursuant to CEQA

Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures CUL-1 and CUL-3 through CUL-7 would ensure that the potential Project impacts to archaeological resources would be mitigated to less than significant levels.

Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries.

Given that construction includes ground-disturbing activities that will penetrate to depths of up to 48 inches below ground surface, there is a potential to encounter human remains, resulting in a significant impact. Implementation of Mitigation Measure CUL-9, which includes provisions for the unanticipated discovery of human remains, would reduce impacts to a less than significant level.

Mitigation

> **Mitigation Measure Cul-9 Mitigation Measure Cul-9: Inadvertent Discovery Of Human Remains.** If human remains are encountered, then PWD shall halt work in the vicinity (within 100 feet) of the discovery and contact the County Coroner in accordance with Public Resources Code section 5097.98 and Health and Safety Code section 7050.5. If the County Coroner determines the remains are Native American, then the Coroner shall notify the California Native American Heritage Commission in accordance with Health and Safety Code subdivision 7050.5(c), and Public Resources Code section 5097.98. The California Native American Heritage Commission shall designate a Most Likely Descendant for the remains per Public Resources Code section 5097.98. Until the landowner has conferred with the Most Likely Descendant, the construction contractor(s) shall ensure the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.4), the Board finds that implementation of the proposed Project could potentially result in significant impacts on cultural resources. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures CUL-9 would ensure that the potential Project impacts to human remains would be mitigated to less than significant levels.

Impact TCR-1: Result in a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074.

Construction: Palmdale Ditch Conversion Project

During the AB 52 consultation process, all three tribes indicated the Palmdale Ditch Conversion project site was sensitive for known tribal cultural resources and provided mitigation recommendations. Because construction of the Palmdale Ditch Conversion project would involve ground-disturbing activities within and near known tribal cultural resources, impacts would be potentially significant. The Tribes' recommended mitigation language was incorporated into Mitigation Measures CUL-4, CUL-5, CUL-6 and TCR-1, and

consultation with SFBMI was concluded with consensus. Consultation with FTBMI and YSMN is still ongoing. Implementation of Mitigation Measures CUL-4, CUL-5, CUL-6 and TCR-1 would be required to reduce impacts to tribal cultural resources to a less-than-significant level.

Mitigation Measures

Mitigation Measures CUL-4, CUL-5, and CUL-6: Above, shall apply

Mitigation Measure TRC-1: Native American Resources Monitoring. Native American monitoring shall be implemented for the proposed Project and applied specifically for the Palmdale Ditch Conversion project as identified below.

Proposed Project Requirements. For ground-disturbing activities in geologic units/sediments of *Higher Sensitivity* for encountering subsurface prehistoric archaeological resources or human remains as determined by the archaeological resources assessment conducted under CUL-3, full time Native American monitoring shall be conducted unless the Qualified Archaeologist has established as part of the archaeological assessment that previous disturbances have reduced the sensitivity to the extent that Native American monitoring is not warranted. No Native American monitoring shall be required in geologic units/sediments of *Lower Sensitivity* for encountering subsurface prehistoric archaeological resources or in areas that have been previously subject to monitoring as part of the program.

The PWD shall retain a Native American monitor(s) to conduct the monitoring from a California Native American Tribe that is culturally and geographically affiliated (according to the NAHC) in the area within which the particular Program component is located. If more than one Tribe is interested in monitoring a Program component, the PWD shall prepare a monitoring rotation schedule. The PWD shall rotate monitors on an equal and regular basis to ensure that each Tribal group has the same opportunity to participate in the monitoring program. If a Tribe cannot participate in a given rotation assignment, they shall forfeit that rotation unless the PWD can make other arrangements to accommodate their schedule. The number of Native American monitors required to adequately observe ground-disturbing activities is dependent on the archaeological sensitivity of the area and construction scenario and shall be established by the Qualified Archaeologist. Native American monitors shall have the authority 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 the PWD and the Native American monitor(s).

Palmdale Ditch Conversion Project Requirements. Prior to Project initiation, a Native American monitor from one of the tribes consulting on the Project shall be retained. In general, Native American monitoring shall be limited to initial ground disturbance, which is defined as construction-related earthmoving of sediments from their native place of deposition (which includes, but is not limited to, tree/shrub removal and planting, clearing/grubbing, grading, leveling, excavation, trenching, compaction, plowing, fence/gate removal and installation, drainage and irrigation removal and installation, hardscape installation [boulders, walls, etc.], and archaeological work) and does not include any secondary movement of sediment that might be required for the Project (e.g., backfilling). If more than one Consulting Tribe wishes to be present for monitoring, they shall be present on a rotating basis. The Native American monitor(s) shall have the authority to halt and redirect work should any potential cultural resources be identified during monitoring. If potential cultural resources are encountered during ground-disturbing activities, work within 60 feet of the

find shall halt, and the find shall be evaluated for listing in the CRHR/NRHP. PWD shall retain at least one Tribal monitor to be present at each distinct work area during each workday when initial ground disturbance is conducted. The tribes consulting on the Project may voluntarily provide additional Tribal monitors beyond those retained by PWD for increased monitoring coverage. Native American monitoring may be reduced or halted at the discretion of PWD (and USBR/USFS, depending on land jurisdiction), in consultation with the tribes consulting on the Project, as warranted by conditions such as encountering bedrock, sediments being excavated are fill, or negative findings during the first 50 percent of ground disturbance. If monitoring is reduced to spot-checking, spot-checking shall occur when ground disturbance moves to a new location within the Project site and/or when ground disturbance extends to depths not previously reached (unless those depths are within bedrock). Furthermore, monitoring may be terminated if it is determined the soils within the Area of Potential Effects do not have the potential to contain cultural resources.

Findings

For the reasons stated in the Draft EIR (see Draft EIR Section 3.4), the Board finds that implementation of the proposed Project could potentially result in significant impacts on cultural resources. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures CUL-4 through CUL-6 and TCR-1 would ensure that the potential Project impacts to Tribal cultural resources would be mitigated to less than significant levels.

2.4.2.5 Energy

Impact ENE-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Operation: Pure Water Antelope Valley Project

The Pure Water Antelope Valley project would involve a net increase in PWD's electricity usage to operate, resulting in a potentially significant impact. It is estimated that the proposed advanced water purification facility would require approximately 4.2 Gigawatt hours per year of power, corresponding to an approximately 27% net increase in PWD's current usage.

Implementation of Mitigation Measure ENE-1 would require the installation of energy efficient equipment and off-peak operation of the PWD system. Additionally, PWD intends to seek opportunities to find clean energy options, such as solar, to offset the Pure Water Antelope Valley project's electrical needs. Likewise, implementation of Mitigation Measure ENE-2 would reduce the overall energy requirements associated with the proposed Project by requiring PWD to promote and encourage the use of recycled water as a more energy-efficient potable offset to importing water. With implementation of Mitigation Measures ENE-1 and ENE-2, the operational impacts associated with the operation of the Pure Water Antelope Valley project would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and impacts would be less than significant.

Mitigation Measures

ENE-1: Energy Efficient Equipment. PWD shall require the use of energy efficient equipment, including pumps and lighting in new water facilities. The PWD system should be designed and operated to shift energy demands to off-peak periods whenever possible.

ENE-2: Promotion of Recycled Water. PWD shall promote and encourage the use of recycled water to offset imported water requirements.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.5), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures ENE-1 and ENE-2 would ensure that the potential Project impacts resulting in wasteful, inefficient, or unnecessary consumption of energy resources would be mitigated to less than significant levels.

Impact ENE-2: Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Operation: Pure Water Antelope Valley Project

The projected net energy increases associated with operation of the Pure Water Antelope Valley project present the potential for a significant impact. However, Mitigation Measure ENE-1 would require both energy efficient equipment and off-peak operation of the PWD system. The production and use of recycled water is more energy efficient than imported water. Thus, the greater the use of recycled water to offset the need for imported water, the lower the demand on local and regional energy supplies and the greater the energy efficiency of the proposed Project. Mitigation Measure ENE-2 would require PWD to promote and encourage the use of recycled water as a potable offset to importing water. Such energy efficiency measures, in addition to any clean energy PWD may install, such as solar, to offset the Pure Water Antelope Valley project's electrical needs, would reduce the overall energy requirements associated with the proposed Project. With implementation of Mitigation Measure ENE-1 and ENE-2, it is reasonably anticipated that the operational impacts associated with the proposed Project actions would not conflict with or obstruct applicable renewable energy or energy efficiency plans. Therefore, impacts would be less than significant with mitigation incorporated.

Mitigation Measures

ENE-1: Energy Efficient Equipment. PWD shall require the use of energy efficient equipment, including pumps and lighting in new water facilities. The PWD system should be designed and operated to shift energy demands to off-peak periods whenever possible.

ENE-2: Promotion of Recycled Water. PWD shall promote and encourage the use of recycled water to offset imported water requirements

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.5), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures ENE-1 and ENE-2 would ensure that the potential Project impacts to any State or local plan for renewable energy or energy efficiency would be mitigated to less than significant levels.

2.4.2.6 Geology, Soils, and Mineral Resources

Impact GEO-1a: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving a rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42.

Construction: Pure Water Antelope Valley Project and Existing Wells Rehabilitation and/or Replacement

Implementation of Mitigation Measure GEO-1 would require the preparation of a geotechnical report that would include design features to incorporate into the proposed Project design to mitigate adverse impact of fault ruptures to people or structures. Therefore, construction impacts would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death. Impacts are less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure GEO-1: Geotechnical Investigation Report. Implementation of Mitigation Measure GEO-1 would require a licensed geologist or engineer to perform a design-level geotechnical investigation prior to construction, which shall include evaluation of fault ruptures and soil and slope stability hazards such as strong seismic ground-shaking, liquefaction, landslides, and soil expansion. Based on the results of the geotechnical investigations, appropriate support and protection measures shall be designed and implemented to maintain the stability of soils and slopes adjacent to work areas during and after construction. Therefore, impacts would be less than significant with mitigation incorporated.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.6), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure GEO-1 would ensure that the potential Project impacts with the potential to cause substantial adverse effects involving a rupture of a known earthquake fault would be mitigated to less than significant levels.

Impact GEO-1b: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground-shaking.

Construction: Pure Water Antelope Valley Project and Existing Wells Rehabilitation and/or Replacement and Operation: Pure Water Antelope Valley Project

Implementation of Mitigation Measure GEO-1 would require the preparation of a geotechnical report that would include design features to incorporate into the proposed Project's design to minimize adverse effects of ground shaking. Thus, the proposed Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Impacts would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure GEO-1: Above shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.6), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure GEO-1 would ensure that the potential Project impacts with the potential to cause substantial adverse effects involving strong seismic ground shaking would be mitigated to less than significant levels.

Impact GEO-1c: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.

Construction: Existing Wells Rehabilitation and/or Replacement

The north and eastern parts of the Antelope Valley Groundwater Basin are not within a liquefaction zone and only one existing well is within a liquefaction zone. Per Mitigation Measure GEO-1, a geotechnical report would assess liquefaction potential and provide structural mitigation recommendations. Additionally, existing wells would be rehabilitated or replaced in accordance with DWR's well standards, which would ensure structural resiliency. Therefore, impacts would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure GEO-1: Above shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.6), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure GEO-1 would ensure that the potential Project

impacts with the potential to cause substantial adverse effects involving seismic-related ground failure, including liquefaction would be mitigated to less than significant levels.

Impact GEO-1d: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.

Construction: Existing Wells Rehabilitation and/or Replacement

Construction of replacement wells would be in accordance with DWR well standards and recommendations of a site-specific geotechnical investigation as required Mitigation Measure GEO-1. Therefore, impacts would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure GEO-1: Above shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.6), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure GEO-1 would ensure that the potential Project impacts with the potential to cause substantial adverse effects involving landslides would be mitigated to less than significant levels.

Impact GEO-2: Result in substantial soil erosion or the loss of topsoil.

Construction: Pure Water Antelope Valley Project and Existing Wells Rehabilitation and/or Replacement

Earthwork that disturbs undeveloped soils has a greater potential to be exposed to wind or water erosion due to the unconsolidated soils. Mitigation Measure GEO-2 would ensure topsoil materials excavated during construction are reused and maintained onsite to the extent feasible, and that all topsoil stockpiles are wetted, thereby minimizing topsoil loss. Because construction would disturb more than one acre, preparation of a SWPPP, which includes stormwater Best Management Practices (BMPs), would be required. BMPs would include measures that would reduce potential erosion impacts. Additionally, all disturbed areas for construction of recycled water pipelines would be restored to pre-existing conditions. Therefore, impacts would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure GEO-2: Topsoil Materials. Implementation would require excavated topsoil materials to be reused and maintained on site to the extent possible, and that all topsoil stockpiles are wetted, thereby minimizing topsoil loss.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.6), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project

which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure GEO-2 would ensure that the potential Project impacts with the potential to result in substantial soil erosion or the loss of topsoil would be mitigated to less than significant levels.

Impact GEO-3: Be located on a geological 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.

Construction: Pure Water Antelope Valley Project and Existing Wells Rehabilitation and/or Replacement

Mitigation Measure GEO-1 requires completion of a geotechnical report that includes an assessment of subsidence risk and recommendations to mitigate subsidence, or liquefaction and lateral spreading risks. Therefore, impacts would be less than significant with mitigation incorporated.

Operation: Existing Wells Rehabilitation and/or Replacement

Per Mitigation Measure HYD-1, PWD would coordinate with the Antelope Valley Watermaster Engineer and ensure operational criteria for the wells do not result in a new deficit in aquifer volume or lowering of the local groundwater table. Therefore, operational impacts would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure GEO-1: Above shall apply

Mitigation Measure HYD-1: Material Harm Review. Conduct a material harm review of the proposed groundwater wells and groundwater rights. The Antelope Valley Watermaster Engineer would ensure operational criteria for the wells do not result in a net deficit in aquifer volume or a lowering of the local groundwater table such that 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.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.6), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure GEO-1 and HYD-1 would ensure that the potential Project impacts with the potential to be located on a geologic unit or soil that is unstable or would become unstable would be mitigated to less than significant levels.

Impact GEO-4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.

Construction: Pure Water Antelope Valley Project and Existing Wells Rehabilitation and/or Replacement and Operation: Pure Water Valley Antelope Valley

Per Mitigation Measure GEO-1, all facilities would be designed in accordance with the recommendations of a site specific geotechnical investigation. The geotechnical reports would include preliminary evaluations for each site-specific project and the identification of expansive soils in the area. The geotechnical reports will provide recommendations to mitigate impacts associated with expansive soils, if necessary. Therefore, impacts related to risks associated with expansive soils would be reduced to a less than significant level.

Mitigation Measures

Mitigation Measure GEO-1: Above shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.6), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure GEO-1 would ensure that the potential Project impacts with the potential to be located on expansive soil creating substantial direct or indirect risks to life or property would be mitigated to less than significant levels.

Impact GEO-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Construction: Pure Water Antelope Valley Project

If excavation for the water purification facility extends below artificial fill or recent alluvium, there may be the potential for impacting significant paleontological resources. Implementation of Mitigation Measures PALEO-1 and PALEO-2 would reduce the impact to a less than significant level.

Construction: Existing Wells Rehabilitation and/or Replacement

Construction of replacement wells in the Project footprint is likely to intersect sediments older than 10,000 years and may impact significant paleontological resources. Implementation of Mitigation Measures PALEO-1 and PALEO-2 would reduce the impact to a less than significant level.

Construction: Palmdale Ditch Conversion Project

Active alluvial valley deposits have high paleontological sensitivity greater than four feet below the surface. Therefore, proposed Project construction in these areas has the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature directly or indirectly. Impacts would be potentially significant, and implementation of Mitigation Measure PALEO-2 would be required.

Mitigation Measures

Mitigation Measure PALEO-1: Paleontological Study. For all proposed Project components that involve ground disturbance below the modern alluvium, PWD shall retain a Federally qualified paleontologist to determine the necessity of conducting a study of the Project area(s) based on the potential sensitivity of the Project site for paleontological resources. The qualified paleontologist should conduct a paleontological resources inventory designed to identify potentially significant resources consisting of: a thorough review of publicly available geological maps and literature pertaining to the sedimentology and paleontology of the Project area(s); a paleontological resources records search from the Natural History Museum of Los Angeles County; and a field survey of those geological units demonstrated to have either a high or unknown potential for containing significant paleontological resources as defined by the Society for Vertebrate Paleontology (2010). The paleontologist shall provide recommendations regarding monitoring of ground disturbance for the proposed Project.

Mitigation Measure PALEO-2: Paleontological Resources Avoidance and Monitoring. PWD should avoid impacts, if feasible, on areas identified as having a high potential to contain significant paleontological resources. Methods of avoidance may include, but not be limited to, Project re-route or re-design, or identification of protection measures such as capping or fencing. For those high sensitivity paleontological areas identified by the qualified paleontologist that are planned for excavation, PWD should retain paleontological monitors during construction and follow the guidelines established in the City of Palmdale General Plan.

- PWD shall implement the following measures during ground-disturbing construction activities in previously undisturbed sediments within the Palmdale Ditch Conversion project:
- **Qualified Professional Paleontologist.** Prior to the start of proposed Project construction activities, PWD shall retain a Qualified Professional Paleontologist, as defined by the Society of Vertebrate Paleontology (SVP; 2010). The Qualified Professional Paleontologist shall draft a Paleontological Resources Mitigation and Monitoring Plan, which shall direct all mitigation measures related to paleontological resources.
- **Paleontological Worker Environmental Awareness Program.** Prior to the start of ground-disturbing construction activities, the Qualified Professional Paleontologist or their designee shall conduct a paleontological Worker Environmental Awareness Program (WEAP) training for all construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction personnel.
- **Paleontological Monitoring.** Full-time paleontological monitoring shall be conducted during open-cut trenching and excavations within previously undisturbed geologic units assigned high paleontological sensitivity. This includes all excavations within Quaternary old alluvial fan deposits, Quaternary old alluvium, Harold Formation, Anaverde Formation, and Punchbowl Formation, and excavations reaching greater than four feet below the surface in areas mapped as active wash deposits, active alluvial valley deposits, active alluvial fan deposits, and Quaternary young alluvial valley deposits.
    - Initial part-time monitoring (i.e., spot-checking) shall be conducted for all ground-disturbing activities that impact geologic units assigned undetermined sensitivity. For excavations exceeding four feet in depth within areas mapped as artificial fill, the purpose of these spot checks shall be to determine whether previously undisturbed (i.e., non-fill) sediments with high paleontological sensitivity are (or will be) impacted by proposed

Project excavations, in which case, full-time paleontological monitoring shall occur. For excavations within the boulder gravel of Littlerock Creek or the Ritter Formation, the goal of the spot checks shall be to determine whether these geologic units are conducive to fossil preservation, in which case full-time monitoring shall occur, or if they are not conducive to fossil preservation, in which case monitoring within these geologic units shall cease or continue as periodic spot checks.

- Bulk matrix sampling may be necessary to recover microfossils (i.e., fossils too small to be easily recognized within the sediment matrix) from the Project area. If indicators of potential microfossils are encountered (e.g., fossil debris, carbonate-rich paleosols, or very fine-grained sedimentary deposits), then 'test samples' or 'standard samples' shall be collected and processed in accordance with SVP (2010) standards, as directed by the Qualified Professional Paleontologist.
- Paleontological monitoring shall be conducted by a paleontological monitor with experience with collection and salvage of paleontological resources and who meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor. The Qualified Professional Paleontologist may recommend monitoring be reduced in frequency or ceased entirely based on geologic observations. Such decisions shall be subject to review and approval by PWD.
- In the event of a fossil discovery by the paleontological monitor or construction personnel, all construction activity within 50 feet of the find shall cease, and the Qualified Professional Paleontologist shall evaluate the find. If the fossil(s) is (are) not scientifically significant, then construction activity may resume. If it is determined the fossil(s) is (are) scientifically significant, the following shall be completed:
    - **Fossil Salvage.** The paleontological monitor shall salvage (i.e., excavate and recover) the fossil to protect it from damage/destruction. Bulk matrix sampling may be necessary to recover small invertebrates or microvertebrates from within paleontologically sensitive deposits. After the fossil(s) is (are) salvaged, construction activity may resume.
    - **Fossil Preparation and Curation.** Fossils shall be identified to the lowest (i.e., most-specific) possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Professional Paleontologist.
    - **Final Paleontological Mitigation Report.** Upon completion of ground-disturbing activities (or laboratory preparation and curation of fossils, if necessary), the Qualified Professional Paleontologist shall prepare a final report describing the results of the paleontological monitoring efforts. The report shall include a summary of the field and laboratory methods employed; an overview of Project geology; and, if fossils were discovered, an analysis of the fossils, including physical description, taxonomic identification, and scientific significance. The report shall be submitted to PWD and, if fossil curation occurred, the designated scientific institution.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.6), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure PALEO-1 and PALEO-2 would ensure that the potential Project impacts with the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature would be mitigated to less than significant levels.

Impact MIN-1: Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state.

Construction: Existing Wells Rehabilitation and/or Replacement

Palmdale lies within the Palmdale Production Consumption MRZ (Joseph et al. 1984) and the PWD service area is underlain by mineral deposits, including at the Littlerock Fan and the Big Rock Fan (City of Palmdale 2022); sand and gravel mining widely occurs throughout Littlerock Wash. If well replacement occurs in a different location, than the existing well, construction activities could not disrupt mining activities. Implementation of Mitigation Measure MIN-1 would require the construction of any facilities or structures to comply with the City policies associated with the continued access to known mineral resources. Mitigation Measure MIN-1 would require development occurring in the vicinity of mining operations to be adequately buffered to ensure the potential impacts to existing or future mining operations would be less than significant. Pipelines associated with the replacement wells may pass through the Littlerock Wash MRZ-2; however, pipelines would be constructed in existing roadways such that there would be no impact on known mineral resources.

Mitigation Measures

> **Mitigation Measure MIN-1: Mineral Resources.** Implementation of Mitigation Measure MIN-1 would require construction of any facilities or structures to comply with City of Palmdale policies associated with the continued access to known mineral resources. Mitigation Measure MIN-1 would require development occurring in the vicinity of mining operations to adequately buffered to ensure the potential impacts to existing or future mining operations. Therefore, impacts would be less than significant with mitigation incorporated.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.6), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure MIN-1 would ensure that the potential Project impacts with the potential to result in the loss of availability of a known mineral resource that would be a value to the region and residents of the state would be mitigated to less than significant levels.

Impact MIN-2: 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.

Construction: Existing Wells Rehabilitation and/or Replacement

Construction activities for well rehabilitation or replacement could disrupt access to these zones or disrupt mining activities. Per Mitigation Measure MIN-1, PWD would be required to cite any replacement wells and structures to comply with the City policies associated with the continued access to known mineral resources. Mitigation Measure MIN-1 would also require construction occurring in the vicinity of mining operations to be adequately buffered to ensure the potential impacts to existing or future mining operations would be less than significant.

Mitigation Measures

Mitigation Measure MIN-1: Above shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.6), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure MIN-1 would ensure that the potential Project impacts with the potential to 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 would be mitigated to less than significant levels.

2.4.2.7 Hazards, Hazardous Materials, and Wildfire

Impact HAZ-2: 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.

Construction: Pure Water Antelope Valley Project

Construction of the Pure Water Antelope Valley project could potentially create hazards to the public or the environment through accident conditions involving the release of hazardous materials. The construction activities would involve the use of adhesives, solvents, paints, thinners, and other chemicals as well as construction equipment that would require the use of fuels and lubricants. If not properly handled, accidental release of these substances could expose construction workers, degrade soils, or become entrained in stormwater runoff, resulting in adverse effects on the public or the environment. PWD is required to comply with all relevant and applicable federal, State, and local laws and regulations that pertain to the accidental release of hazardous materials during construction of proposed facilities. Additionally, PWD would implement Mitigation Measure HAZ-1, which would develop a Hazardous Materials Management and Spill Prevention and Control Plan to limit the risk of hazardous material through material use and accidents. Compliance with all applicable federal, state, and local regulations and implementation of the Hazardous Materials Management and Spill Prevention and Control Plan would reduce potential impacts to the public or the environment regarding accidental release of hazardous materials to less than significant.

Construction: Existing Wells Rehabilitation and/or Replacement

Both the rehabilitation of existing wells and construction of new wells would involve the use of adhesives, solvents, paints, thinners, and other chemicals that could create a hazard through leaks or if not properly handled. Additionally, construction activities would require the use of machinery, equipment, and other chemicals that could create a hazard through leaks if not properly handled. PWD would implement Mitigation Measure HAZ-1, which would develop a Hazardous Materials Management and Spill Prevention and Control Plan, and would comply with all applicable federal, State, and local laws and regulations pertaining to the avoidance and, if necessary, mitigation of the accidental release of hazardous materials during construction. Therefore, impacts would be less than significant with mitigation incorporated.

Mitigation Measure

HAZ-1: Hazardous Materials Management Spill Prevention and Control Plan. Before commencement of construction, PWD shall require its construction contractor(s) to prepare a Hazardous Materials Management Spill Prevention and Control Plan that includes a Project-specific contingency plan for hazardous materials and waste operations. The Plan shall be applicable to all construction activities and shall establish policies and procedures according to federal and California OSHA regulations for hazardous materials. Elements of the Plan shall include, but not be limited to the following:

- A discussion of hazardous materials management, including delineation of hazardous material storage areas, access and egress routes, waterways, emergency assembly areas, and temporary hazardous waste storage areas;
- Notification and documentation of procedures; and
- Spill control and countermeasures, including employee spill prevention/response training.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.7), the Board finds that implementation of the proposed Project could potentially result in significant impacts on hazards, hazardous materials, and wildfire. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure HAZ-1 would ensure that the potential Project impacts to create a significant hazard to the public would be mitigated to less than significant levels.

Impact HAZ-3: Emit hazardous emissions or handle hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Construction: Pure Water Antelope Valley Project

During construction of proposed Project facilities, there may be emissions of toxic air pollutants, such as diesel, within close proximity of nearby schools, as well as a risk of accidental release of other hazardous materials. The closest school to the proposed Project is Palmdale SOAR High School, which is about 0.20 miles away from the proposed Project site. Implementation of Mitigation Measure HAZ-1 would develop a Hazardous Materials Management and Spill Prevention and Control Plan to reduce the risk of accidental

hazardous material releases at the Project site. Similarly, implementation of Mitigation Measure HAZ-2 would minimize the impact of construction near schools by coordinating with schools to schedule construction activity when school is not in session. Therefore, impacts would be less than significant with mitigation incorporated.

Construction: Existing Wells Rehabilitation and/or Replacement

Several existing well sites are located within 0.25 mile of schools and, since they have not been officially sited, there is a possibility that some replacement wells may be constructed within 0.25 mile of a school. During construction of the proposed Project, there could be emissions of toxic air pollutants, such as diesel particulate matter, or the accidental release of hazardous materials within 0.25 mile of schools. Mitigation Measure HAZ-1 would implement a Hazardous Materials Management and Spill Prevention and Control Plan to reduce the risk of accidental hazardous material releases within 0.25 miles of schools. Mitigation Measure HAZ-2 would reduce impacts of well construction near schools by requiring coordination with schools to schedule construction activity when school is not in session. Thus, construction of the proposed Project would have a less than significant impact.

Mitigation Measures

HAZ-1: Hazardous Materials Management Spill Prevention and Control Plan. Before commencement of construction, PWD shall require its construction contractor(s) to prepare a Hazardous Materials Management Spill Prevention and Control Plan that includes a Project-specific contingency plan for hazardous materials and waste operations. The Plan shall be applicable to all construction activities and shall establish policies and procedures according to federal and California OSHA regulations for hazardous materials. Elements of the Plan shall include, but not be limited to the following:

- A discussion of hazardous materials management, including delineation of hazardous material storage areas, access and egress routes, waterways, emergency assembly areas, and temporary hazardous waste storage areas;
- Notification and documentation of procedures; and
- Spill control and countermeasures, including employee spill prevention/response training.

HAZ-2: Construction and Chemical Deliveries at Schools. PWD will coordinate with school officials for proposed Project areas located near schools to schedule construction when school is not in session.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.7), the Board finds that implementation of the proposed Project could potentially result in significant impacts on hazards, hazardous materials, and wildfire. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measures HAZ-1 and HAZ-2 would ensure that the potential Project impacts resulting in hazardous emissions within one-quarter mile of a school would be mitigated to less than significant levels.

Impact HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 65962.5 and, as a result, create a significant hazard to the public or the environment.

Operation: Existing Wells Rehabilitation and/or Replacement

While the potential exists to site replacement wells active hazardous sites, implementation of Mitigation Measure HAZ-3 ensures that replacement wells would not be located within any active hazardous sites. Therefore, impacts would be less than significant with mitigation.

Mitigation Measure

> **HAZ-3: Environmental Site Assessment and Remediation or Well Relocation.** After exploratory drilling and before construction begins, a Phase 1 Environmental Site Assessment will be conducted for each proposed municipal well site to identify contaminated sites at or near each proposed well site that poses a hazard for construction or to PWD's potable water supply. In the event that a recognized environmental concern exists, additional investigation would be conducted, typically under a Phase II Environmental Site Assessment, to identify the presence and extent of any contamination that would need remediation, or a Well Relocation Plan would be developed to determine if the well location could be moved to a location that is not affected by contaminant releases. Remediation, if needed, would be conducted in accordance with federal and State requirements for remediation of soil and/or groundwater contamination with oversight by the appropriate local and/or State agency, such as the County of Los Angeles, Regional Water Quality Control Board, and/or DTSC.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.7), the Board finds that implementation of the proposed Project could potentially result in significant impacts on hazards, hazardous materials, and wildfire. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure HAZ-3 would ensure that the potential Project impacts resulting from location on a listed hazardous materials site would be mitigated to less than significant levels.

Impact HAZ-5: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Construction: Pure Water Antelope Valley Project

Construction of the Pure Water Antelope Valey project, including recycled water injection wells and associated pipelines, would temporarily block access to roadways and driveways for emergency vehicles, which could conflict with both the Los Angeles County and City of Palmdale Emergency Operations Plans (EOPs) and be potentially significant. Mitigation Measure TRA-1 would require PWD to prepare and implement a Traffic Control Plan that would establish appropriate traffic control measures and preserve emergency access within the Project area. Impacts would be reduced to less than significant levels with mitigation incorporated.

Construction: Existing Wells Rehabilitation and/or Replacement

Construction of replacement wells may result in the temporary closures of roads, which would impact emergency response vehicles. With the implementation of Mitigation Measure TRA-1, PWD would prepare and implement a Traffic Control Plan that would establish appropriate traffic control measures and preserve emergency access within the Project area. Potential significant impacts would be reduced to a less than significant level.

Construction: Palmdale Ditch Conversion Project

Construction of the proposed Project may require partial lane or full road closures during activities such as the demolition of culverts, headwalls at bridges and tunnels, and stormwater overcrossings. Trenchless installation methods would be utilized for the crossing of Pearblossom Highway to minimize disruption to traffic; however, the proposed pipeline may be installed via open-cut excavation through other existing roadways, which would also require lane or road closures. In the area of the Palmdale Ditch Conversion project, the County's EOP recognizes State Route 14 and Mt. Emma Road as disaster evacuation routes. However, through the implementation of Mitigation Measure TRA-1, a Traffic Control Plan would be prepared and would establish appropriate traffic control measures to preserve emergency access within the Project area. Therefore, construction impacts to emergency response or evacuation plans would be less than significant with mitigation incorporated.

Mitigation Measure

TRA-1: Traffic Control Plan. Prior to construction, PWD shall require its construction contractor(s) to prepare and implement a Traffic Control Plan, to be approved by the City and/or the County of Los Angeles, based on jurisdiction. The plan shall include traffic counts at intersections near the proposed Project facilities to determine existing traffic conditions. Based on these traffic counts, the plan shall recommend mitigation to minimize impacts to existing traffic conditions. These mitigation measures shall include but shall not be limited to:

- Identification of hours of construction and hours for deliveries, potentially avoiding the A.M. and P.M. peak hours to minimize disturbance to traffic flow
- Specification of both construction-related vehicle and oversize haul routes; alternative routes shall be proposed to avoid traffic disruption
- Identification of limits on the length of open trench, work area delineation, traffic control, flagging, and signage requirements
- Identification of all access and parking restrictions
- Identification of staging locations to be used during construction
- Identification of potential road or lane closures
- Establishment of haul routes for construction-related vehicle traffic
- Identification of alternative safe routes to maintain pedestrian bicyclist safety during construction

At least three days prior to initiation of construction activities, PWD shall coordinate with emergency services (police, fire, and others) to notify these entities regarding construction schedule, proposed Project alignment and siting, and potential delays due to construction. PWD shall identify roadways and access points for emergency services and minimize disruptions to or closures of these locations.

The plan shall include provisions for traffic control measures including barricades, warning signs, cones, lights, and flag persons, to allow safe circulation of vehicle, bicycle, pedestrian, and emergency response traffic.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.7), the Board finds that implementation of the proposed Project could potentially result in significant impacts on hazards, hazardous materials, and wildfire. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure TRA-1 would ensure that the potential Project impacts to an adopted emergency response plan or emergency evacuation plan would be mitigated to less than significant levels.

Impact WILD-1: Substantially impair an adopted emergency response plan or emergency evacuation plan.

Construction: Pure Water Antelope Valley Project

The Pure Water Antelope Valley project is not anticipated to be located in or near State responsibility areas or lands classified as very high fire hazard severity zones. However, construction of the Pure Water Antelope Valley project could temporarily result in road closures, which would disrupt emergency vehicle access and could impair an adopted emergency response plan or an emergency evacuation plan. Adoption of Mitigation Measure TRA-1 would implement a Traffic Control Plan to reduce potential significant impacts to less than significant levels.

Construction: Existing Wells Rehabilitation and/or Replacement

Construction of replacement wells would occur within the south and eastern parts of the Antelope Valley Groundwater Basin. Construction of replacement wells, and associated conveyance pipelines would temporarily result in road closures, which could disrupt emergency vehicle access, and thus, impair on an adopted emergency response plan or an emergency evacuation plan. The Traffic Control Plan implemented by Mitigation Measure TRA-1 would reduce this potential significant impact to a less than significant level with mitigation.

Construction: Palmdale Ditch Conversion Project

In the area of the Palmdale Ditch Conversion project, the County's EOP recognizes State Route 14 and Mt. Emma Road as disaster evacuation routes (County of Los Angeles 2023). Proposed Project construction may require partial lane or full road closures during activities such as the demolition of culverts, headwalls at bridges and tunnels, and stormwater overcrossings. Additionally, although trenchless installation methods would be utilized for the crossing of Pearblossom Highway to minimize disruption to traffic, the proposed pipeline would be installed via open-cut excavation through existing roadways for the remaining road crossings (unless otherwise required by the City/County), which would also require lane or road closures. Traffic control plans (Mitigation Measure TRA-1) would be prepared for work within the City, County, and Los Angeles County Metropolitan Transportation Authority/ Metrolink/ Southern California Regional Rail Authority rights-of-way as well as within Angeles National Forest. These traffic control plans would establish appropriate traffic control measures and preserve emergency access within the Project area. Therefore, the

Project would not substantially impair an emergency response plan or emergency evacuation plan. Impacts would be less than significant.

Mitigation Measure

TRA-1: Traffic Control Plan. Prior to construction, PWD shall require its construction contractor(s) to prepare and implement a Traffic Control Plan, to be approved by the City and/or the County of Los Angeles, based on jurisdiction. The plan shall include traffic counts at intersections near the proposed Project facilities to determine existing traffic conditions. Based on these traffic counts, the plan shall recommend mitigation to minimize impacts to existing traffic conditions. These mitigation measures shall include but shall not be limited to:

- Identification of hours of construction and hours for deliveries, potentially avoiding the A.M. and P.M. peak hours to minimize disturbance to traffic flow
- Specification of both construction-related vehicle and oversize haul routes; alternative routes shall be proposed to avoid traffic disruption
- Identification of limits on the length of open trench, work area delineation, traffic control, flagging, and signage requirements
- Identification of all access and parking restrictions
- Identification of staging locations to be used during construction
- Identification of potential road or lane closures
- Establishment of haul routes for construction-related vehicle traffic
- Identification of alternative safe routes to maintain pedestrian bicyclist safety during construction

At least three days prior to initiation of construction activities, PWD shall coordinate with emergency services (police, fire, and others) to notify these entities regarding construction schedule, proposed Project alignment and siting, and potential delays due to construction. PWD shall identify roadways and access points for emergency services and minimize disruptions to or closures of these locations.

The plan shall include provisions for traffic control measures including barricades, warning signs, cones, lights, and flag persons, to allow safe circulation of vehicle, bicycle, pedestrian, and emergency response traffic.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.7), the Board finds that implementation of the proposed Project could potentially result in significant impacts on hazards, hazardous materials, and wildfire. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure TRA-1 would ensure that the potential Project impacts to an adopted emergency response plan or emergency evacuation plan would be mitigated to less than significant levels.

Impact WILD-2: Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the

uncontrolled spread of a wildfire if located in or near State responsibility areas or lands classified as very high fire hazard severity zones.

Construction: Existing Wells Rehabilitation and/or Replacement

Although replacement wells and associated conveyance pipelines are not anticipated to be constructed within designated fire hazard severity zones (HFSZs), because the exact locations have not yet been sited, these wells may be constructed within or near State responsibility areas or lands classified as a very high FHSZ. Therefore, Mitigation Measure WILD-1 would ensure fire hazard reduction measures are conducted during construction in areas designated as very high FHSZs to reduce the potential for wildfire impacts to less than significant levels.

Construction: Palmdale Ditch Conversion Project

During construction, the use of spark-producing construction equipment along the Ditch alignment within high FHSZs or adjacent to very high FHSZs could potentially create hazardous fire conditions and wildfire risks. However, pursuant to California Public Resources Code Section 4442, earthmoving and portable equipment with internal combustion engines would be equipped with a spark arrestor to reduce the potential for igniting a wildfire, which would minimize this risk. Additionally, Mitigation Measure WILD-1 would ensure fire hazard reduction measures are conducted during construction in areas designated as very high FHSZs to reduce the potential for wildfire impacts on people or structures. Therefore, impacts would be less than significant levels with mitigation incorporated.

Mitigation Measure

> **WILD-1: Fire Hazard Reduction Measures.** During construction of Project facilities located in areas designated as moderate, high, or very high fire hazard severity zones by CAL FIRE, PWD shall require that all staging areas and welding areas intended for use of 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 construction of Project facilities, construction contractor(s) 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.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.7), the Board finds that implementation of the proposed Project could potentially result in significant impacts on hazards, hazardous materials, and wildfire. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure WILD-1 would ensure that the potential Project impacts resulting in wildfire would be mitigated to less than significant levels.

2.4.2.8 Hydrology, Groundwater, and Water Quality

Impact HYD-2: Substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Construction: Existing Wells Rehabilitation and/or Replacement

Prior to well rehabilitation and/or replacement, PWD would be required to obtain a Los Angeles County Health permit and submit a well application to the Antelope Valley Watermaster Engineer. PWD would implement Mitigation Measure HYD-1, which would involve conducting a material harm review of the proposed groundwater wells as well as the available groundwater rights. The Antelope Valley Watermaster Engineer would ensure operational criteria for the wells do not result in a net deficit in aquifer volume or a lowering of the local groundwater table such that 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. Thus, the proposed Project would not have an impact on decreasing groundwater supplies or interfering with groundwater recharge.

Mitigation Measures

Mitigation Measure HYD-1: Above shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.8), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure HYD-1 would ensure that the potential Project impacts with the potential to substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin would be mitigated to less than significant levels.

Impact HYD-3b: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.

Construction: Pure Water Antelope Valley Project

The Pure Water Antelope Valley project could incorporate infrastructure that would capture, which would reduce surface water runoff and flooding. Implementation of Mitigation Measure HYD-2 would require PWD to complete a drainage study and develop a drainage plan that would be submitted as necessary to the appropriate jurisdiction, to verify that drainage would not contribute to runoff that would result in flooding. Mitigation Measure HYD-2 would ensure that any alteration to site drainage would not result in onsite or offsite flooding. Therefore, impacts would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure HYD-2: Drainage Plan. PWD shall complete drainage assessment and design in accordance with all applicable laws, regulations, and best management practices. The assessment and design shall be submitted as a drainage plan to appropriate jurisdiction to verify that drainage would not contribute to runoff that would result in flooding.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.8), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure HYD-2 would ensure that the potential Project impacts with the potential to substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite would be mitigated to less than significant levels.

Impact HYD-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Construction: Existing Wells Rehabilitation and/or Replacement

Prior to well rehabilitation and/or replacement, PWD would be required to obtain a Los Angeles County Health permit and submit a well application to the Antelope Valley Watermaster Engineer. PWD would implement Mitigation Measure HYD-1, which would involve conducting a material harm review of the proposed groundwater wells as well as the available groundwater rights. The Antelope Valley Watermaster Engineer would ensure operational criteria for the wells do not result in a net deficit in aquifer volume or a lowering of the local groundwater table such that 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. Impacts would be less than significant with mitigation.

Mitigation Measures

Mitigation Measure HYD-1: Above shall apply

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.8), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure HYD-1 would ensure that the potential Project impacts with the potential to conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan would be mitigated to less than significant levels.

2.4.2.9 Noise and Vibration

Impact NOI-1: Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards of the City of Palmdale and Los Angeles County, or applicable standards of other agencies.

Construction: Pure Water Antelope Valley Project and Existing Wells Rehabilitation and/or Replacement

If construction activities within 4,500 feet of a sensitive receptor in the County or 500 feet of a sensitive receptor in the City were to occur outside of 7 am to 7 pm Monday through Saturday, sensitive receptors could be exposed to increased noise levels in excess of the County or Municipal Code, which could result in a significant impact. However, implementation of Mitigation Measure NOISE-1 and NOISE-2 would impose measures to reduce construction noise activities adjacent to sensitive receptors, and excessive noise impacts to sensitive receptors would be reduced to less than significant.

Mitigation Measures

Mitigation Measure NOISE-1: Noise Measures. PWD shall require the construction contractor(s) to implement the following measures, as applicable, during construction of the proposed Project:

- Construction activities shall meet municipal, or County code requirements related to noise. Construction activities shall be limited to between 7:00 am and 7:00 pm Monday through Saturday to avoid noise-sensitive hours of the day, when applicable. Construction activities shall be prohibited on Sunday and holidays.
- Sensitive receptors of the proposed Project construction activities shall be identified and mapped.
- Construction equipment noise shall be minimized by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools.
- Construction contractor(s) shall locate fixed construction equipment and construction staging areas as far as possible from nearby sensitive receptors.
- Where feasible, construct barriers between noise sources and noise-sensitive land uses to block sound transmission. Enclose construction equipment where practicable.
- If construction were to occur near a school, the construction contractor(s) shall coordinate the most noise producing construction activities with school administration in order to limit disturbance to the campus.

Mitigation Measure NOISE-2: Noise Coordinator. PWD shall require the construction contractor(s) to notify in writing all landowners and occupants of properties within 500 feet of the construction area of the construction schedule at least two weeks prior to groundbreaking. The construction contractor(s) shall designate a Noise Compliant Coordinator who will be responsible for responding to complaints regarding construction noise. The Noise Coordinator shall ensure that reasonable measures are implemented to correct any problems. A contact telephone number for the Noise Coordinator shall be conspicuously posted at the construction site and included in the written notification of the construction schedule sent to surrounding properties.

Findings

For the reasons stated in the Draft EIR (see Draft EIR Section 3.10), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure NOISE-1 and NOISE-2 would ensure that the potential Project impacts with the potential to generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards of the City of Palmdale and Los Angeles County, or applicable standards of other agencies would be mitigated to less than significant levels.

Impact NOI-2: Generate excessive groundborne vibration in the project vicinity above levels existing without the Project.

Construction: Pure Water Antelope Valley Project

if construction activities within 43 feet of a sensitive receptor were to occur, sensitive receptors could be exposed to ground-borne vibration of ground-borne noise in excess of FTA standards, which would be a significant impact. Implementation of Mitigation Measure NOISE-3 would reduce ground-borne vibration and noise levels when construction activities occur adjacent to sensitive receptors and would result in less than significant impacts.

Construction: Palmdale Ditch Conversion Project

Vibration levels generated by a vibratory roller necessary for the ditch conversion project would exceed the Los Angeles County Code's threshold of 0.01 in/sec (the level of perception) at 150 feet. Therefore, proposed Project construction may generate excessive groundborne vibration or groundborne noise, and impacts would be potentially significant. Implementation of **Mitigation Measure Noise-4** would be required.

Mitigation Measures

Mitigation Measure NOISE-3: Vibration Measures. PWD shall require the construction contractor(s) to implement the following measures, as applicable, during construction of proposed facilities:

- Sensitive receptors shall be identified and mapped.
- Limit construction activities that cause excessive groundborne vibrations to at least 43 feet from sensitive receptors and 15 feet from any structures.

Mitigation Measure NOISE-4: Alternative Construction Equipment PWD shall require its construction contractor(s) to avoid utilizing vibratory rollers within 190 feet of residences. If paving work is necessary within 190 feet of residences, alternative offroad construction equipment, such as equipment limited to 100 horsepower or less or a static/pneumatic roller, shall be utilized instead.

Findings

For the reasons stated in the Draft EIR (see Draft EIR Section 3.10), the Board finds that implementation of the proposed Project could potentially result in significant impacts on energy. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR.

Specifically, the implementation of Mitigation Measure NOISE-3 and NOISE-4 would ensure that the potential Project impacts with the potential to generate excessive groundborne vibration in the project vicinity above levels existing without the Project would be mitigated to less than significant levels.

2.4.2.10 Recreation

Impact REC-1: 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.

Construction: Pure Water Antelope Valley Project

If recycled water pipelines are installed on Avenue S, construction may temporarily disrupt public access to William J. McAdam Park and cyclist use of the existing Class I bikeway. Mitigation Measure REC-1 would be implemented to ensure that potential impacts associated with temporary disruptions to bikeways would be avoided by establishing bike route detours to ensure no temporary impacts to recreational facilities would occur. Impacts would be less than significant with mitigation incorporated.

Construction: Existing Well Rehabilitation and/or Replacement

If any pipelines associated with groundwater extraction wells were to be located in a street with a bikeway, construction may temporarily disrupt public access to the park and cyclists utilizing these paths. Mitigation Measure REC-1 would be implemented to ensure that potential impacts associated with temporary disruptions to bikeways would be avoided by establishing bike route detours to ensure no temporary impacts to recreational facilities would occur. Impacts would be less than significant with mitigation incorporated.

Mitigation Measure

> **REC-1: Coordination for Bikeways.** For Project facilities that would include pipelines or other new facilities within designated bikeways, PWD shall coordinate with the applicable jurisdiction to determine whether circulation and detour plans are required to minimize impacts to access local bikeways. Circulation and detour plans may include the use of signage and flagging of cyclists through and/or around the construction zone.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.11), the Board finds that implementation of the proposed Project could potentially result in significant impacts on recreation. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure REC-1 would ensure that the potential Project impacts to the use of existing neighborhood and regional parks or other recreational facilities would be mitigated to less than significant levels.

2.4.2.11 Transportation

Impact TRA-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Construction: Pure Water Antelope Valley Project

Construction of the Pure Water Antelope Valley project would generate vehicle trips per day associated with both construction worker commutes and material and equipment hauling. These increases in trips per day on local and regional roadways could affect roadway capacity and circulation; slower movements and larger turning radii of construction trucks compared to passenger vehicles could also lessen roadway capacities.

The number and type of equipment and worker vehicles required for construction of the advanced water purification facility, recycled water injection wells, and pipelines would depend on the facility type. Currently, the associated number of vehicle trips and types of vehicles required for the construction of the proposed project is unknown. The definitive construction schedules, workforce details, equipment lists, and material lists will be specified in the future as the proposed Project continues to be designed.

Construction of pipeline would impede traffic flow and disrupt AVTA bus routes because a large portion of the pipelines would be installed in existing roadways to the extent feasible and could temporarily require partial or complete road closures, which would conflict with the goals of the General Plan. Per Mitigation Measure TRA-1, PWD would develop and implement a Traffic Control Plan that would perform traffic counts to understand existing traffic conditions on roadways near proposed Project facilities at the time they are constructed. Using these traffic counts, the Traffic Control Plan would recommend various mitigation measures, including minimizing deliveries during the A.M. and P.M. peak travel hours, as well as alternative haul routes to avoid traffic disruption to minimize disturbance on traffic flow. Implementation of Mitigation Measure TRA-1 would reduce impacts to less than significant level.

Construction: Existing Well Rehabilitation and/or Replacement

It is anticipated that rehabilitation of existing wells would involve a relatively small number of trips as construction of replacement well structures is not required. Impacts would be less than significant.

Construction of replacement would be located within the south and eastern parts of the Antelope Valley Groundwater Basin. Construction of wells would generate vehicle trips associated with both construction worker commutes and material and equipment hauling. Construction of conveyance pipelines would also impede traffic and result in temporary lane closures as pipelines would be installed in existing roadways as much as possible, disrupting AVTA bus routes within the Project area. Implementation of Mitigation Measure TRA-1 would delineate work areas, provide control, flagging, and signage. Therefore, impacts would be less than significant with mitigation incorporated.

Mitigation Measure

> **TRA-1: Traffic Control Plan.** Prior to construction, PWD shall require its construction contractor(s) to prepare and implement a Traffic Control Plan, to be approved by the City and/or the County of Los Angeles, based on jurisdiction. The plan shall include traffic counts at intersections near the proposed Project facilities to determine existing traffic conditions. Based on these traffic counts,

the plan shall recommend mitigation to minimize impacts to existing traffic conditions. These mitigation measures shall include but shall not be limited to:

- Identification of hours of construction and hours for deliveries, potentially avoiding the A.M. and P.M. peak hours to minimize disturbance to traffic flow
- Specification of both construction-related vehicle and oversize haul routes; alternative routes shall be proposed to avoid traffic disruption
- Identification of limits on the length of open trench, work area delineation, traffic control, flagging, and signage requirements
- Identification of all access and parking restrictions
- Identification of staging locations to be used during construction
- Identification of potential road or lane closures
- Establishment of haul routes for construction-related vehicle traffic
- Identification of alternative safe routes to maintain pedestrian bicyclist safety during construction

At least three days prior to initiation of construction activities, PWD shall coordinate with emergency services (police, fire, and others) to notify these entities regarding construction schedule, proposed Project alignment and siting, and potential delays due to construction. PWD shall identify roadways and access points for emergency services and minimize disruptions to or closures of these locations.

The plan shall include provisions for traffic control measures including barricades, warning signs, cones, lights, and flag persons, to allow safe circulation of vehicle, bicycle, pedestrian, and emergency response traffic.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.12), the Board finds that implementation of the proposed Project could potentially result in significant impacts on transportation. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure TRA-1 would ensure that the potential Project impacts to existing circulation plans would be mitigated to less than significant levels.

Impact TRA-3: Substantially increase hazards due to a geometric design feature.

Construction: Pure Water Antelope Valley Project

Construction of the Pure Water Antelope Valley project would not involve any roadway improvements or alterations, and thus, would not increase hazards due to a design feature like a sharp curve or dangerous intersections. However, the proposed Project would involve the hauling of heavy construction equipment. The use of oversize vehicles during construction could be an incompatible use and can create a hazard to the public by limiting motorists' views on roadways by obstruction of space. However, oversize loads associated with construction of the proposed Project would be required to comply with applicable CVC and Caltrans requirements applicable to licensing, size, weight, and roadway encroachment of construction vehicles. Further, Mitigation Measure TRA-1 would require the use of traffic counts to recommend

construction-related oversize haul routes in the Traffic Control Plan prepared for the proposed Project. Compliance with regulatory requirements to reduce hazards caused by incompatible roadways uses during construction and compliance with Mitigation Measure TRA-1 would minimize the potential for hazards to other vehicles to less than significant levels.

Construction: Existing Well Rehabilitation and/or Replacement

Rehabilitation of existing wells/ construction of replacement wells do not include any changes in roadway design but would entail short periods of construction within roadways to construct pipeline connections between the wells and existing water lines. Pipeline construction would require lane closure that would temporarily change the configuration of the existing right-of-way along public roads; however, once installation is complete, the road would be restored to pre-construction conditions. Lane closures could present a hazard to traffic. Implementation of Mitigation Measure TRA-1 would limit potential hazards from construction activities by identifying construction staging locations and establishing alternative routes in the event of a road closure, and traffic controls in the event of a lane closure. With implementation of Mitigation Measure TRA-1, construction of the proposed Project would have a less than significant impact.

Mitigation Measure

TRA-1: Traffic Control Plan. Prior to construction, PWD shall require its construction contractor(s) to prepare and implement a Traffic Control Plan, to be approved by the City and/or the County of Los Angeles, based on jurisdiction. The plan shall include traffic counts at intersections near the proposed Project facilities to determine existing traffic conditions. Based on these traffic counts, the plan shall recommend mitigation to minimize impacts to existing traffic conditions. These mitigation measures shall include but shall not be limited to:

- Identification of hours of construction and hours for deliveries, potentially avoiding the A.M. and P.M. peak hours to minimize disturbance to traffic flow
- Specification of both construction-related vehicle and oversize haul routes; alternative routes shall be proposed to avoid traffic disruption
- Identification of limits on the length of open trench, work area delineation, traffic control, flagging, and signage requirements
- Identification of all access and parking restrictions
- Identification of staging locations to be used during construction
- Identification of potential road or lane closures
- Establishment of haul routes for construction-related vehicle traffic
- Identification of alternative safe routes to maintain pedestrian bicyclist safety during construction

At least three days prior to initiation of construction activities, PWD shall coordinate with emergency services (police, fire, and others) to notify these entities regarding construction schedule, proposed Project alignment and siting, and potential delays due to construction. PWD shall identify roadways and access points for emergency services and minimize disruptions to or closures of these locations.

The plan shall include provisions for traffic control measures including barricades, warning signs, cones, lights, and flag persons, to allow safe circulation of vehicle, bicycle, pedestrian, and emergency response traffic.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.12), the Board finds that implementation of the proposed Project could potentially result in significant impacts on transportation. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure TRA-1 would ensure that the potential Project impacts to a geometric design feature would be mitigated to less than significant levels.

Impact TRA-4: Result in inadequate emergency access.

Construction: Pure Water Antelope Valley Project

Fire protection and police services within the Project area are provided by the Los Angeles County Fire Department and Los Angeles County Sheriff's Department. Depending upon the timing, location, and duration of construction activities. Construction of the proposed facilities could delay emergency vehicle response times or otherwise disrupt delivery of emergency services. Implementation of Mitigation TRA-1 requires coordination with emergency service providers at least one month prior to construction. Adherence to this mitigation measure would reduce any potential impacts regarding emergency services to less than significant levels.

Construction: Existing Well Rehabilitation and/or Replacement

During construction, temporary closures of roads could occur during installation of pipelines, which could interfere with emergency service access and emergency access, creating a potentially significant impact. Implementation of Mitigation Measure TRA-1 would require PWD to coordinate with local emergency responders in the event of a lane closure and ensure the access is maintained for emergency response traffic. Mitigation Measure TRA-1 would reduce the potential for impairing or physically interfering with emergency response, evacuation, and emergency access. Thus, construction of the proposed Project would have a less than significant impact.

Operation: Existing Well Rehabilitation and/or Replacement

Operational activities would generally occur on proposed Project areas and not in public rights-of-way with the potential to restrict emergency access. If maintenance work is required within roadways that restrict emergency access it would be considered a construction activity and would follow Mitigation Measure TRA-1, which requires coordination with emergency management services. Thus, operation of the proposed Project would have a less than significant impact.

Mitigation Measure

TRA-1: Traffic Control Plan. Prior to construction, PWD shall require its construction contractor(s) to prepare and implement a Traffic Control Plan, to be approved by the City and/or the County of Los Angeles, based on jurisdiction. The plan shall include traffic counts at intersections near the proposed Project facilities to determine existing traffic conditions. Based on these traffic counts, the plan shall recommend mitigation to minimize impacts to existing traffic conditions. These mitigation measures shall include but shall not be limited to:

- Identification of hours of construction and hours for deliveries, potentially avoiding the A.M. and P.M. peak hours to minimize disturbance to traffic flow

- Specification of both construction-related vehicle and oversize haul routes; alternative routes shall be proposed to avoid traffic disruption
- Identification of limits on the length of open trench, work area delineation, traffic control, flagging, and signage requirements
- Identification of all access and parking restrictions
- Identification of staging locations to be used during construction
- Identification of potential road or lane closures
- Establishment of haul routes for construction-related vehicle traffic
- Identification of alternative safe routes to maintain pedestrian bicyclist safety during construction

At least three days prior to initiation of construction activities, PWD shall coordinate with emergency services (police, fire, and others) to notify these entities regarding construction schedule, proposed Project alignment and siting, and potential delays due to construction. PWD shall identify roadways and access points for emergency services and minimize disruptions to or closures of these locations.

The plan shall include provisions for traffic control measures including barricades, warning signs, cones, lights, and flag persons, to allow safe circulation of vehicle, bicycle, pedestrian, and emergency response traffic.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.12), the Board finds that implementation of the proposed Project could potentially result in significant impacts on transportation. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure TRA-1 would ensure that the potential Project impacts to emergency access would be mitigated to less than significant levels.

2.4.2.12 Utilities

Impact UTL-4: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Operation: Pure Water Antelope Valley Project

Operation of the Pure Water Antelope Valley project would generate solid waste, such as debris, grit, or large particles removed from wastewater through screening, which need to be collected and disposed of properly. Although PWD would dispose of the solid waste in accordance with local and state regulations and would transfer it to the Antelope Valley Public Landfill, which has available capacity and will remain open until 2044, new waste generation could potentially result in a significant impact if Antelope Valley Public Landfill reaches capacity or ceases operations. Mitigation Measure UTL-1 would require PWD to conduct a thorough site selection process to identify an appropriate location for siting a landfill facility for the disposal of solid waste generated by the proposed Project. Therefore, impacts would be less than significant after mitigation is incorporated.

Mitigation Measure

UTL-1: Site Selection Process. In the event the Antelope Valley Public Landfill does not have remaining capacity or has ceased operations, PWD would conduct a thorough site selection process to identify an appropriate location to dispose of solid waste generated by the Project.

Findings

For the reasons stated in the Draft EIR (see Draft EIR section 3.13), the Board finds that implementation of the proposed Project could potentially result in significant impacts on utilities. Pursuant to CEQA Guidelines, section 15091(a)(1), changes or alterations have been required or incorporated into the proposed Project which avoid or substantially lessen the significant environmental impact identified in the Draft EIR. Specifically, the implementation of Mitigation Measure UTL-1 would ensure that the potential Project impacts to solid waste generation and disposal would be mitigated to less than significant levels.

2.5 Cumulative Impacts and Mitigation Measures

Section 15130(a) of the State CEQA Guidelines requires that an EIR discusses the cumulative impacts of the Project when the Project's incremental effect is determined to be cumulatively considerable. The discussion of cumulative impacts must evaluate whether the impacts of the project will be significant when considered in combination with past, present, and future reasonably foreseeable projects, and whether the Project would make a cumulatively considerable contribution to those impacts. As described in the Draft EIR, the proposed Project could generate potentially significant environmental impacts, however, with mitigation measures incorporated, these impacts would not incrementally increase or be exacerbated by future conditions and become cumulatively considerable.

For reasons stated in the Draft EIR, the Board finds that implementation of the proposed Project would result in less than significant cumulative effects to Aesthetics (see Draft EIR Section 3.1), Air Quality and Greenhouse Gas Emissions (see Draft EIR Section 3.2), Biological Resources (see Draft EIR Section 3.3), Cultural and Tribal Resources (see Draft EIR Section 3.4), Energy (see Draft EIR Section 3.5), Geology, Soils, and Mineral Resources (see Draft EIR Section 3.6), Hazards, Hazardous Materials, and Wildfire (see Draft EIR Section 3.7), Hydrology, Groundwater, and Water Quality (see Draft EIR Section 3.8), Land Use, Agriculture, and Forestry Resources (see Draft EIR Section 3.9), Noise and Vibration (see Draft EIR Section 3.10), Recreation (see Draft EIR Section 3.11), Transportation (see Draft EIR Section 3.12), and Utilities, Service Systems, and Public Services (see Draft EIR Section 3.13). Environmental commitments and mitigation measures have been required and incorporated into the proposed Project which avoid or substantially lessen the contribution to significant cumulative impacts, as identified in the Draft EIR.

FINDING. For the reasons stated in the Draft and Final EIR, the Board finds that implementation of the proposed Project would result in less than significant cumulative effects to the resources evaluated in Chapter 3 of the Draft EIR. Mitigation measures have been required and incorporated into the proposed project which avoid or substantially lessen the contribution to significant cumulative environmental effects, as identified in the Draft EIR.

3. ADDITIONAL FINDINGS

These Findings incorporate by reference the text of the Draft and Final EIR prepared for the Strategic Water Resources Plan Update Project in its entirety. Without limitation, this incorporation is intended to elaborate on the scope and nature of project and cumulative development impacts, related mitigation measures and the basis for determining the significance of such impacts. CEQA requires the Lead Agency approving a project to adopt a monitoring program for changes to the project that it adopts or makes a condition of project approval in order to mitigate or avoid significant effects on the environment and ensure compliance during project implementation. The Mitigation Monitoring and Reporting Program for the project has been prepared to serve this purpose, and is hereby adopted by the Board. The adopted Mitigation Monitoring and Reporting Program is included as Exhibit B, a supporting document to Board Resolution No. 24-15 and to these Findings.

4. STATEMENT OF OVERRIDING CONSIDERATIONS

In approving the proposed Project, which is evaluated in the Draft and Final EIR, Palmdale Water District (PWD) makes the following Statement of Overriding Considerations in support of its findings on the EIR. After review of the entire administrative record, the PWD Board of Directors finds that specific economic, legal, social, technological, and other anticipated benefits of the proposed Project outweigh its significant and unavoidable adverse environmental impacts and therefore justify the approval of the Project. The PWD Board of Directors finds the Project has eliminated or substantially lessened all significant effects on the environment where feasible, and finds that, on balance, the remaining significant and unavoidable impact of the Project to historical resources is acceptable because the benefits of the Project outweigh it. The PWD Board of Directors finds that each of the overriding considerations set forth below constitutes a separate and independent ground for such a finding.

Significant and Unavoidable Environmental Effects

The proposed Project will result in a significant and unavoidable impact to historic resources, specifically the Palmdale Ditch, as set forth under Section 2.3, because the Project will require the near-total demolition of the Palmdale Ditch. This significant and unavoidable impact is only associated with the Palmdale Ditch Conversion Project included in the Draft EIR. No other Project components (i.e., Imported Water, Recycled Water, Groundwater, Littlerock Sediment Removal, Conservation) would result in significant and unavoidable impacts.

The PWD Board of Directors has balanced this significant unavoidable impact of the proposed Project against the Project's benefits and, based on the entire record before it, hereby determines the identified impacts are acceptable. In addition, PWD will mitigate this significant and unavoidable impact to the greatest extent feasible by implementing Mitigation Measure CUL-8, which involves documenting the Palmdale Ditch in a Historic American Engineering Record-like documentation package that will include digital photographs of views of Palmdale Ditch and a short-form narrative historical report. Digital copies of this documentation package will be made available to the Los Angeles County Library Acton Agua Dulce Branch and the Palmdale City Library. Furthermore, PWD will be subject to the requirements of a Memorandum of Agreement that is being negotiated between the United States Bureau of Reclamation and California State Historic Preservation Officer to address impacts to the Palmdale Ditch as a historic resource. Lastly, some segments of the Palmdale Ditch may be left in place, which would partially preserve elements of this historic resource, although it is unlikely to remain eligible for listing in the National Register of Historic Places or California Register of Historical Resources.

Significant Irreversible Environmental Effects

CEQA Guidelines Section 15126.2(d) requires a discussion of any significant irreversible environmental changes that would be caused by the proposed Project should it be implemented. Such significant irreversible environmental changes may include the following:

- Use of non-renewable resources during the initial and continued phases of the project that would be irreversible because a large commitment of such resources makes removal or non-use unlikely
- Primary impacts and, particularly secondary impacts (such as highway improvements that provide access to a previously inaccessible area) that generally commit future generations to similar uses

- Irreversible damage which may result from environmental accidents associated with the project

As discussed in Section 5.3, Significant Irreversible Changes, of the Draft EIR, full implementation of the proposed Project may result in the irreversible consumption of construction materials such as concrete, lumber, steel, and polyvinyl chloride. Furthermore, labor and energy would be irreversibly spent on some parts of the proposed Project, including fossil fuels to power heavy machinery. The proposed Project involves purchasing additional groundwater rights to diversify PWD's supply portfolio, which may result in the consumption of groundwater resources. However, the proposed Project also includes recharge of the groundwater basin with PWD's maximum allotment of State Water Project Table A water, making the increased consumption therefore reversible. None of these uses would cause undue strain on the environment or the ecological and human communities in the Project area. The proposed Project strives for efficient resource use and aims to increase the reliability and sustainability of water supply and use within PWD's service area.

The impacts described above are further articulated under Sections 2.3 through 2.3. The PWD Board of Directors has balanced these significant but mitigable irreversible impacts of the project against the Project's benefits and, based on the entire record before it, hereby determines the identified impacts are acceptable.

Specific Findings

Project Benefits Outweigh Unavoidable Impacts

The PWD Board of Directors hereby finds the one significant and unavoidable impact of the Palmdale Ditch Conversion project (as a component of the proposed Project) to historical resources is acceptable in light of the following substantial benefits of the Palmdale Ditch Conversion project, which constitute the specific economic, legal, social, technological and other considerations that justify the approval of the proposed Project.

1. **Meets Current and Future Water Supply Needs for PWD's Service Area**

   Under the California Water Code, PWD's primary functions are to acquire, control, conserve, store, and distribute water for the beneficial use of inhabitants and water users within the PWD service area.[1] PWD's 2020 Urban Water Management Plan (UWMP) indicates that 2020 water demand was 20,511 acre-feet per year (AFY). PWD's overall water demands are expected to reach 24,250 AFY in 2045, a nearly 20 percent increase from 2020. Depending on climatic conditions in the next 20 years, PWD's 2045 potable water supply could range from 22,225 to 35,375 AFY. Under normal climatic conditions, the projected water supply well exceeds expected demands for the next two decades. However, under drought conditions, excess water supply will be small or non-existent, depending on the length and intensity of the drought.[2] The Palmdale Ditch Conversion project is in direct furtherance of meeting the existing and future water supply needs in PWD's service area, as outlined in PWD's 2020 UWMP, which indicates the 2020 UWMP indicates local surface water supply from Littlerock Reservoir accounts for approximately 10 percent of PWD's raw water supply. The Palmdale Ditch Conversion project is intended to reduce water loss during conveyance of water from

[1] PWD. 2019. Rules and Regulations. Last updated: April 2019. Available at: https://www.palmdalewater.org/wp-content/uploads/2021/10/Rules_Regs_April2019_opt.pdf

[2] PWD. 2021. 2020 Urban Water Management Plan. June 25, 2021. Available at: https://www.palmdalewater.org/wp-content/uploads/2021/10/PWD_Final_2020_UWMP.pdf

Littlerock Reservoir to Lake Palmdale, which is essential to achieving the volume of local surface water supplies projected in the 2020 UWMP to meet current and future demand in the PWD service area. The Palmdale Ditch Conversion project would achieve average water savings of approximately 800 acre-feet per year (approximately 20 percent of total annual local surface water supplies) and maximum water savings of approximately 1,450 acre-feet per year.

2. **Increases Water Supply Reliability through Feasible and Reliable Sources of Water**

   The Palmdale Ditch Conversion project would increase water supply reliability for PWD's service area via feasible and reliable sources of water by improving the reliability of PWD's local surface water supply. This Project component is essential to optimizing PWD's use of its existing water right at Littlerock Reservoir, which is a known, feasible, and reliable water source for PWD.

3. **Maximizes Cost Savings by Optimizing Existing Water Rights and Facilities**

   Pursuant to Article 1 of PWD's Regulations and Regulations, the overall objective of PWD is to make available the highest quality water at the lowest possible cost, which includes operating water supply, treatment, storage and distribution facilities in a manner to provide the most economical and dependable service possible.[1] The Palmdale Ditch Conversion project is intended to reduce water loss during conveyance of water from Littlerock Reservoir to Lake Palmdale, which is essential to optimizing PWD's use of its existing water right at Littlerock Reservoir. The Palmdale Ditch Conversion project would achieve average water savings of approximately 800 acre-feet per year (approximately 20 percent of annual local surface water supplies) and maximum water savings of approximately 1,450 acre-feet per year, depending on weather/climate conditions.

4. **Maximizes Economic Benefits to PWD Service Area by Selecting Water Supply Sources that Are Aligned with Existing Funding Programs**

   The Palmdale Ditch Conversion Project is proposed with the intent of maximizing potential funding opportunities and reducing costs to PWD ratepayers. This Project component has already been awarded $17.5 million from the California Department of Water Resources' Urban Community Drought Relief Program and $5 million by the USBR WaterSMART Water and Energy Efficiency Grants Program for planning, design, and construction, which would significant reduce the cost of this Project component to PWD ratepayers.

5. **Enhances Performance, Safety, and Resiliency of Existing PWD Infrastructure and Water Supply Portfolio**

   The Palmdale Ditch Conversion project would result in numerous benefits to the performance, reliability, safety, and resiliency of this conveyance system. The project would significantly increase the conveyance system capacity from 20 cubic feet per second to approximately 60 cubic feet per second, which would increase the speed at which water can be delivered from Littlerock Reservoir to Lake Palmdale. In addition, the project would improve the quality of water transported to Lake Palmdale by converting the open-channel Ditch to an underground pipeline and thereby reducing the amount of trash and debris that currently enters the Ditch. Doing so would also reduce the frequency of operations and maintenance activities associated with the existing Ditch, including clearing debris and cleaning screens, which currently require approximately 400 hours of PWD staff time per year. The project would also decrease the potential for water conveyance from Littlerock

[1] PWD. 2019. Rules and Regulations. Last updated: April 2019. Available at: https://www.palmdalewater.org/wp-content/uploads/2021/10/Rules_Regs_April2019_opt.pdf

Reservoir to Lake Palmdale to be interrupted due to obstructions in the Ditch, such as trash, felled trees, and off-highway vehicles. Furthermore, the project would improve the safety of staff conducting operations and maintenance activities associated with this conveyance system, which are currently difficult due to the location of much of the Ditch in remote areas away from well-established roadways and through private properties as well as the challenging terrain that hinders access to many portions of the Ditch. The project would instead enable PWD staff to conduct regular operations and maintenance activities for the conveyance pipeline via manholes placed in more accessible and safe locations.

The PWD Board of Directors also finds the remaining Project components (i.e., Imported Water, Recycled Water, Groundwater, Littlerock Sediment Removal, Conservation), which would not result in significant and unavoidable environmental impacts and would result in the following substantial benefits:

1. Meets Current and Future Water Supply Needs for PWD's Service Area

The Project proposes a number of other actions that would increase water supply and reliability by recharging and augmenting groundwater supplies while maximizing the use of imported, recycled, and stormwater surface water supplies, thereby accommodating future growth estimates and increasing storage of water in the Antelope Valley Groundwater Basin to provide reliable water supply even during times of imported water shortage. The remaining Project components are in direct furtherance of meeting the existing and future water supply needs in PWD's service area, as outlined in PWD's 2020 UWMP, as follows:

- **Imported Water.** The 2020 UWMP identifies imported water supplies, including supply from the Butte Transfer Agreement, as a vital element of PWD's water supply portfolio. The proposed Project would enable PWD to maximize the use of its existing transfer agreements with Butte County and Littlerock Creek Irrigation District and the storage of those imported water supplies in Lake Palmdale as well as in the Antelope Valley Groundwater Basin via the Upper Amargosa Creek Water Recharge Project.
- **Pure Water Antelope Valley Project and Recycled Water Injection.** The 2020 UWMP indicates PWD is actively working to develop recycled water supplies for its service area and projects a 300 percent increase in recycled water supplies between 2025 and 2040 as part of its water supply portfolio. The 2020 UWMP specifically calls out the Pure Water Antelope Valley project and recycled water injection (previously called "Palmdale Regional Water Augmentation Project") as part of PWD's planned water supplies. The proposed Project includes implementation of the Pure Water Antelope Valley project as well as injection of purified recycled water to the Antelope Valley Groundwater Basin for storage, which would be essential elements of increasing PWD's use of recycled water to meet current and future demand.
- **Existing Wells Rehabilitation or Replacement and New Groundwater Production Wells.** The 2020 UWMP identifies groundwater from the Antelope Valley Groundwater Basin as another critical component of PWD's water supply portfolio. By rehabilitating and/or replacing existing PWD wells to maintain existing pumping capacity and enable greater pumping during dry years, implementation of this Project component would allow the production wells to maintain baseline groundwater pumping capacity. In addition, by installing new production wells, the proposed Project would enable PWD to maximize its access to banked water as well as future groundwater rights proposed to be purchased from other pumpers.

- **Littlerock Reservoir Sediment Removal Project.** The 2020 UWMP indicates local surface water supply from Littlerock Reservoir accounts for approximately 10 percent of PWD's raw water supply. The proposed Project includes implementation of the Littlerock Reservoir Sediment Removal project, which is intended to increase the reservoir's storage capacity.
- **Conservation.** The 2020 UWMP indicates PWD has uniquely low water use for a high desert area and has implemented a variety of initiatives to manage water demand as part of its water conservation program. The 2020 UWMP also notes PWD plans to expand the program in future years as part of its dedication to water conservation as a vital component of the water supply portfolio. The proposed Project includes continued implementation and expansion of PWD's water conservation program and therefore is integral to PWD's ability to maintain its relatively low water demand for years to come.

2. Increases Water Supply Reliability through Feasible and Reliable Sources of Water

The proposed Project would increase water supply reliability for PWD's service area via feasible and reliable sources of water as follows:

- **Imported Water.** The proposed Project would enable PWD to maximize the use of its transfer agreements with Butte County and Littlerock Creek Irrigation District and the storage of those imported water supplies in Lake Palmdale as well as in the Antelope Valley Groundwater Basin. These transfer agreements are already in place, and the storage of imported water supplies in the Antelope Valley Groundwater Basin would be accomplished via the Upper Amargosa Creek Water Recharge Project, which is already constructed. Therefore, this Project component relies on known, feasible, and reliable sources of water for PWD.
- **Pure Water Antelope Valley Project and Recycled Water Injection.** The proposed Project includes implementation of the Pure Water Antelope Valley project, and recycled water injection, which would maximize the beneficial reuse of PWD's recycled water entitlement from the Palmdale Water Reclamation Plant in the Antelope Valley Groundwater Basin. This entitlement has already been granted to PWD; therefore, this Project component relies on a known, feasible, and reliable source of water.
- **Existing Wells Rehabilitation or Replacement and New Groundwater Production Wells.** By rehabilitating and/or replacing existing PWD wells to maintain existing pumping capacity and enable greater pumping during dry years, implementation of this Project component would allow the production wells to maintain baseline groundwater pumping capacity. In addition, by installing new production wells, the proposed Project would enable PWD to maximize its access to banked water as well as future groundwater rights proposed to be purchased from other pumpers. Groundwater from the Antelope Valley Groundwater Basin is a known, feasible, and reliable source of water for PWD.
- **Littlerock Reservoir Sediment Removal Project.** The proposed Project includes implementation of the Littlerock Reservoir Sediment Removal project, which would improve the reliability of PWD's local surface water supply and optimize PWD's use of its existing water right at Littlerock Reservoir, which is a known, feasible, and reliable water source for PWD.
- **Conservation.** The proposed Project includes continued implementation and future expansion of PWD's existing water conservation program to help PWD maintain the relatively low water demand of its service area. Therefore, conservation is a known, feasible, and reliable source of water for PWD.

3. **Maximizes Cost Savings by Optimizing Existing Water Rights and Facilities**

   The proposed Project is mainly comprised of actions that would optimize PWD's existing water rights and facilities in an effort maximize cost savings and minimize the amount of capital investments necessary to secure new water supply sources, with the goal of lessening the cost burden to PWD ratepayers, as follows:

   - **Imported Water.** The proposed Project would enable PWD to maximize the use of its existing transfer agreements with Butte County and Littlerock Creek Irrigation District and the storage of those imported water supplies in Lake Palmdale as well as in the Antelope Valley Groundwater Basin. The storage of imported water supplies in the Antelope Valley Groundwater Basin would be accomplished via the Upper Amargosa Creek Water Recharge Project, which is an existing facility.
   - **Pure Water Antelope Valley Project and Recycled Water Injection.** The proposed Project includes treatment and storage of PWD's existing recycled water entitlement from the Palmdale Water Reclamation Plant in the Antelope Valley Groundwater Basin by injecting it after purification. The injection wells would be installed as part of the Pure Water Antelope Valley project and would enable PWD to maximize the use of its existing recycled water entitlement.
   - **Existing Wells Rehabilitation or Replacement.** By rehabilitating and/or replacing existing PWD wells to maintain existing pumping capacity and enable greater pumping during dry years, implementation of this Project component would improve the ability of the existing production wells to maintain baseline groundwater pumping capacity under PWD's existing groundwater rights.
   - **Littlerock Reservoir Sediment Removal Project.** The proposed Project includes implementation of the Littlerock Reservoir Sediment Removal project, which is intended to increase the existing Littlerock Reservoir's storage capacity and optimize PWD's use of its existing water right at Littlerock Reservoir.
   - **Conservation.** The proposed Project includes continued implementation and future expansion of PWD's existing water conservation program to help PWD maintain the relatively low water demand of its service area and avoid the need to acquire new water rights or build additional new water supply/conveyance/treatment facilities.

4. **Maximizes Economic Benefits to PWD Service Area by Selecting Water Supply Sources that Are Aligned with Existing Funding Programs**

   The proposed Project includes several Project components that are proposed with the intent of maximizing potential funding opportunities and reducing costs to PWD ratepayers. The Pure Water Antelope Valley project has already been awarded a $14 million loan from the United States Environmental Protection Agency's (USEPA) Water Infrastructure Finance and Innovation Act (WIFIA) program, a $750,000 grant from the United States Bureau of Reclamation's (USBR) Title XVI Water Infrastructure Improvement for the Nation (WIIN) program, and a $8.5 million grant from the California Energy Commission for pilot testing of the carbon capture technology associated with the project. The full-scale Pure Water Antelope Valley project is also intended to align with State and federal funding priorities for recycled water and water reuse projects, such as the USBR's Title XVI WIIN and WaterSMART Drought Resiliency grant programs, USEPA's WIFIA low-cost financing program, and the State Water Resources Control Board's Water Recycling Funding Program. In

addition, the proposed conservation efforts are designed to attract external funding to help expand programs and reduce water demand within the PWD service area.

5. **Enhances Performance, Safety, and Resiliency of Existing PWD Infrastructure and Water Supply Portfolio**

   In general, the proposed Project includes a variety of water supply projects/actions that would contribute to maintaining a diverse water supply portfolio for PWD, which would increase resiliency and adaptability during normal, dry, and wet years by reducing dependence on a single source. The proposed Project would also result in critical enhancements to the performance, safety, and resilience of existing PWD infrastructure as follows:

   - **Imported Water.** The proposed Project would enable PWD to increase the resilience of its imported water supplies by storing such supplies in the Antelope Valley Groundwater Basin via the Upper Amargosa Creek Water Recharge Project. In doing so, imported water supplies would be less susceptible to loss via evaporation, which would occur if they were otherwise stored in surface water facilities.
   - **Pure Water Antelope Valley Project and Recycled Water Injection.** The proposed Project includes implementation of the Pure Water Antelope Valley project as well as injection of purified recycled water to the Antelope Valley Groundwater Basin for storage. Recycled water is often considered a sustainable, drought-resistant source of water because it relies on purifying wastewater generated by indoor uses, which does not vary significantly in volume year over year, as opposed to local surface and imported water supplies, the volumes of which are largely correlated to precipitation, runoff, and snowmelt, which can vary dramatically depending on weather and climate conditions.
   - **Existing Wells Rehabilitation or Replacement.** The 2020 Well Rehabilitation Prioritization Program found that seven wells were structurally unsound and require replacement because they are nearing the end of their useful lives. The 2020 Well Rehabilitation Prioritization Program also identified 15 other wells in need of rehabilitation to optimize performance. By rehabilitating and/or replacing existing PWD wells to maintain existing pumping capacity and enable greater pumping during dry years, implementation of this Project component would improve the performance and resilience of the production wells to maintain baseline groundwater pumping capacity.
   - **Littlerock Reservoir Sediment Removal Project.** The proposed Project includes implementation of the Littlerock Reservoir Sediment Removal project, which would improve the reliability of PWD's local surface water supply. This project would restore the capacity of Littlerock Reservoir that has been lost over the years due to sediment accumulation, thereby improving the reservoir's performance and ensuring it can continue to play a crucial role in PWD's water supply portfolio.
   - **Conservation.** The proposed Project includes continued implementation and future expansion of PWD's existing water conservation program to help PWD reduce water waste and preserve its ability to achieve sufficient conservation savings in the event of a water shortage emergency, thereby enhancing PWD's resiliency to drought and climate change.

Balance of Competing Goals

The PWD Board of Directors hereby finds it is imperative to balance competing goals in approving the proposed Project and the environmental documentation of the Project. Not every environmental concern has been fully satisfied because of the need to satisfy competing concerns to a certain extent. The PWD Board of Directors has chosen to accept certain environmental impacts because of the many benefits inherent in the attainment of water supply and reliability goals as described above, as well as the implementation of required mitigation measures, which would balance the potential for environmental impacts to occur.

The PWD Board of Directors hereby finds and determines the proposed Project and its supporting environmental documentation provide for a positive balance of the competing goals and that the economic, legal, social, technological, and other benefits to be obtained by the Project outweigh any remaining environmental and related potential detriment of the Project.

Overriding Considerations

Based on the objectives identified for the project, the PWD Board of Directors has determined the proposed Project should be approved and that the sole significant and unavoidable environmental impact attributable to the Project is outweighed by the specific economic, legal, social, technological, and other overriding considerations as described above.

The PWD Board of Directors has determined any environmental detriment caused by the proposed Project has been minimized to the extent feasible through mitigation measures identified herein, and, where not feasible, has been outweighed and counterbalanced by the significant economic, legal, social, technological, and other benefits to be generated to the PWD service area.

5. RECORD OF PROCEEDINGS

The record of proceedings upon which the Board has based these Findings consists of all the documents and evidence relied upon by the District in preparing the Strategic Water Resources Plan Update Project. The custodian of the record of proceedings is the Palmdale Water District, 2029 East Avenue Q, Palmdale, CA 93550.

6. SUMMARY

Based on the foregoing Findings and the information contained in the record, the Board has made the following findings with respect to the significant environmental effects of the Strategic Water Resources Plan Update Projectand described in the EIR:

1. Mitigation have been incorporated into the proposed project for the Strategic Water Resources Plan Project which avoid or substantially lessen the significant environmental effects on the environment.

Based on the foregoing Findings and the information contained in the record, it is hereby determined that all significant effects on the environment due to approval of the project have been eliminated or substantially lessened to the extent feasible.

Exhibit B:
Strategic Water Resources Plan Project
Mitigation Monitoring and Reporting Program

STRATEGIC WATER RESOURCES PLAN UPDATE

MITIGATION MONITORING AND REPORTING PROGRAM

December 2024

Prepared by:

Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550

With Assistance From:

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SCH#: 2023080290

1. MITIGATION MONITORING AND REPORTING PROGRAM

The California Environmental Quality Act (CEQA) requires that when a lead agency adopts an Environmental Impact Report (EIR), it shall prepare a monitoring or reporting program for all required mitigation measures (CEQA Guidelines Section 15097). This Mitigation Monitoring and Reporting Program (MMRP) describes the monitoring and reporting program for mitigation measures adopted by Palmdale Water District (District) to avoid or substantially reduce impacts related to the Strategic Water Resources Plan Update (Project) to less than significant levels and has been prepared in accordance with Public Resources Code Section 21081.6 and State CEQA Guidelines Section 15097. Palmdale Water District and its contractors are required to implement the adopted mitigation measures for the proposed Project in accordance with the EIR. This MMRP will be used by the District to ensure that the mitigation measures identified in the EIR are implemented.

1.1 Program Administration

The MMRP shall be administered by Palmdale Water District and mitigation measures shall be incorporated into design and construction contracts, as appropriate, to ensure full implementation. The MMRP shall be maintained by the designated Palmdale Water District Project Manager and be available for inspection upon request at the District's offices.

1.2 Project Description

The SWRP identified a Preferred Strategy that optimizes PWD's mix of water sources up to the year 2050. The Preferred Strategy, referred to as the 'proposed Project' in this EIR, would maximize local supplies and facilities to meet future growth and increase storage of water in the Antelope Valley Groundwater Basin. The proposed Project consists of the following implementation actions.

1.2.1 Imported Supplies

Under the proposed Project, PWD would maximize its existing Table A allocations by recharging unused and untreated imported water to meet potable water demands. Up to 1,200 AF of imported supplies would be recharged to the Antelope Valley Groundwater Basin each year via the Upper Amargosa Creek Water Recharge Project. The Upper Amargosa Creek Water Recharge Project was completed in 2019 and consists of recharge basins constructed on a 75-acre site near 25th Street West and Lake Elizabeth Road in the City of Palmdale. Existing turnouts, conveyance, recharge, and treatment would be used to maximize current Table A water allocations. No new facilities would be constructed.

While included in the Preferred Strategy, the environmental impacts of the Upper Amargosa Creek Water Recharge Project and environmental impacts of SWP facilities are not further analyzed in the EIR because both facilities have been previously evaluated under CEQA.

1.2.2 Recycled Water

Under the proposed Project, PWD would maximize beneficial use of recycled water through construction and implementation of the Pure Water Antelope Valley project. PWD would construct a 5 million gallon per day advanced water purification facility near the Palmdale Water Reclamation Plant. The Pure Water Antelope Valley project is anticipated to be located between East Avenue Q and 25th Street East. PWD would also store purified recycled water in the Antelope Valley Groundwater Basin by injecting it into the groundwater basin. PWD would install injection wells to be used for the injection of purified water from the Pure Water Antelope Valley advanced water purification facility. New recycled water conveyance would be constructed. The location of these pipelines would be near Palmdale Water Reclamation Plant and would be constructed within existing roadways whenever possible. CEQA evaluation would be conducted in the future for the Pure Water Antelope Valley project, including its associated recycled water conveyance and injection facilities.

1.2.3 Groundwater

Under the proposed Project, PWD would rehabilitate and/or replace existing PWD wells as recommended in the 2020 Well Rehabilitation Prioritization Program. The Project includes replacement or rehabilitation of five existing wells in the near term. Rehabilitated wells would be located at existing well sites, while replacement wells may be located in areas with higher rates of groundwater production or near existing wells.

1.2.4 Local Supplies

Littlerock Reservoir is a man-made feature formed by the impoundment of water by the Littlerock Dam. The initial design capacity of Littlerock Reservoir was 4,300 AF; however, this capacity was substantially reduced to approximately 2,800 AF because of the deposition of sediment behind Littlerock Dam. The proposed Project includes sediment removal at Littlerock Reservoir in order to maintain storage capacity. While included in the Preferred Strategy, environmental impacts of the Littlerock Reservoir Sediment Removal project are not analyzed further in the EIR as they have been previously evaluated under CEQA.

The Palmdale Ditch is a 7.2 mile long part earthen and part concrete-lined open ditch that conveys water from Littlerock Dam Reservoir to Lake Palmdale. It is estimated that up to 25 percent of water supplies are lost due to evaporation and seepage from the Ditch. Under the proposed Project, PWD would enclose the Ditch by constructing a pipeline within and near the existing Ditch.

1.2.5 Conservation

Under the proposed Project, PWD would continue to monitor and report on effectiveness of conservation programs; regularly review and coordinate PWD and City Ordinances and Policies; coordinate its conservation efforts with other Antelope Valley water purveyors; and achieve conservation objectives set by the State as part of Assembly Bill (AB) 1668 and Senate Bill (SB) 606. No activities that meet the definition of a "Project" under CEQA are planned for conservation activities and therefore no CEQA documentation is required.

2. MITIGATION MONITORING REQUIREMENTS

2.1 Mitigation Measures

A mitigation monitoring and reporting checklist has been developed for the proposed project evaluated in the EIR and is intended for use by Palmdale Water District, as lead agency and designated monitoring entity. The checklist is presented in **Table MMRP-1**, which summarizes the mitigation requirements for the proposed project. The table identifies anticipated timing and responsible parties for ensuring implementation of each mitigation measure.

Table MMRP-1: Mitigation Monitoring and Reporting Checklist

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Aesthetics							
Mitigation Measure AES-1: Landscape Plan During project design, a landscape plan shall be prepared for proposed Project features that may affect scenic vistas and/or are visible from scenic roadways. The landscape plan shall include measures to restore disturbed areas by replanting trees and/or reseeding with a native seed mix typical of the surrounding area. Vegetation screening shall also be included in order to assist in shielding the proposed aboveground facilities from public vantage points.	**Impact 3.1a (AES-1) –** Potential to have a substantial adverse effect on a scenic vista. **Impact 3.1b (AES-2) –** Potential to, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Confirm a landscape plan shall be prepared for proposed Project features that may affect scenic vistas and/or are visible from scenic roadways. 3. Retain a copy of the landscape plan in project file.	1. Contracting 2. Design 3. Post-construction	1._____ 2._____ 3._____
Mitigation Measure AES-2: Pre-Construction Aesthetic Design Aboveground buildings/structures shall be designed to have similar aesthetic qualities to existing structures in the vicinity to minimize contrasting features in the visual landscape.	**Impact 3.1a (AES-1) –** Potential to have a substantial adverse effect on a scenic vista. **Impact 3.1b (AES-2) –** Potential to, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Confirm design of all new aboveground buildings/structures incorporates similar aesthetic qualities to existing structures in the vicinity. 3. Verify that facilities are constructed as specified.	1. Contracting 2. Design 3. Post-construction	1._____ 2._____ 3._____
Mitigation Measure AES-3: Aboveground Building/Structure Design Aboveground buildings/structures shall be designed to have color palettes and vegetation screening as necessary to blend with the surrounding character of the site and to minimize contrasting features in the visual landscape.	**Impact 3.1a (AES-1) –** Potential to have a substantial adverse effect on a scenic vista. **Impact 3.1b (AES-2) –** Potential to, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Confirm design includes appropriate color palettes and vegetation screening as necessary to blend with the surrounding character of the site. 3. Verify that facilities are constructed as specified.	1. Contracting 2. Design 3. Post-construction	1._____ 2._____ 3._____
Mitigation Measure AES-4: Permanent Exterior Lighting All new permanent exterior lighting associated with proposed Project components shall be shielded and directed downward to avoid any light intrusion to surrounding uses.	**Impact 3.1d (AES-4) –** Potential to create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure.	1. Contracting 2. Design	1._____ 2._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
		and/or Replacement			2. Confirm design includes shielded and downward facing positioning for all new permanent exterior lighting. 3. Verify that facilities are constructed as specified.	 3. Post-construction	 3._____
Mitigation Measure AES-5: Nighttime Construction Lighting Lighting used during nighttime construction, including any associated 24-hour well drilling, shall be shielded and pointed away from surrounding light-sensitive land uses.	**Impact 3.1d (AES-4) –** Potential to create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with light shielding and positioning. 3. Retain copies of inspection records in project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____
Mitigation Measure AES-6: Non-Glare Design The proposed advanced water purification facility shall be designed to include non-glare exterior materials and coatings to minimize glare or reflection.	**Impact 3.1d (AES-4) –** Potential to create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	**Construction:** Pure Water Antelope Valley	Palmdale Water District	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Confirm advanced water purification facility design includes non-glare exterior materials and coatings. 3. Verify that facilities are constructed as specified.	1. Contracting 2. Design 3. Post-construction	1._____ 2._____ 3._____
Air Quality							
Mitigation Measure AIR-1: Basic Construction Fugitive Dust Emissions Control Practices The following Basic Construction Emissions Control Practices for controlling fugitive dust from a construction site shall be implemented during construction. • Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. • Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.	**Impact 3.2b (AIR-2) –** Potential to 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.	**Construction:** Pure Water Antelope Valley	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with Basic Construction Emissions Control Practices.	1. Contracting 2. Construction	1._____ 2._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
• Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. • Limit vehicle speeds on unpaved roads to 15 miles per hour (mph). • All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. • PWD shall ensure construction contractor(s) implement measure to comply with AVAQMD Rule 403, and enforced by AVAQMD staff, including a Dust Control Plan.					3. Retain copies of inspection records in project file.	3. Post-construction	3._____
Mitigation Measure AIR-2: Construction Diesel Exhaust Emission Control The following practices, which describe exhaust emission control from diesel powered fleets, shall be implemented at the construction site. California regulations limit idling from both on-road and off-road diesel-powered equipment. The California Air Resources Board (CARB) enforces idling limitations and compliance with diesel fleet regulations. • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. • Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1]. • Construction activities shall minimize use of diesel-powered generators and rely on the electricity infrastructure where appropriate power requirements are available without the need to construct additional infrastructure. • Construction trucks shall be routed along haul routes that minimize travel adjacent to sensitive receptor areas where feasible.	**Impact 3.2b (AIR-2) –** Potential to 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. **Impact 3.2c (AIR-3) –** Potential to expose sensitive receptors to substantial pollutant concentrations.	**Construction:** Pure Water Antelope Valley	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with Construction Diesel Exhaust Emission Control practices. 3. Retain copies of inspection records in project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____
Mitigation Measure AIR-3: Tier 4 Engines To minimize emissions of NO_X from construction activities, PWD shall ensure the construction contractor(s) uses off-road equipment that meets the U.S EPA certified Tier 4 final engines or engines that are certified to meet or exceed the emission ratings for U.S EPA Tier 4 final or interim engines such that average daily NO_X emissions are lower than AVAQMD Mass Emissions Thresholds of 137 pounds per day.	**Impact 3.2b (AIR-2) –** Potential to 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. **Impact 3.2c (AIR-3) –** Potential to expose sensitive receptors to substantial pollutant concentrations.	**Construction:** Pure Water Antelope Valley	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with certified Tier 4 engines. 3. Retain copies of inspection records in the project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Biological Resources							
Mitigation Measure BIO-1: Habitat Assessment This mitigation measure is applicable to all Project components except the Palmdale Ditch Conversion project. A habitat assessment shall be conducted prior to ground-disturbing activities within 500 feet of each proposed Project component footprint. If no suitable habitat occurs to support special-status plant species, special-status wildlife species, nesting bird species, sensitive plant communities, and/or native desert vegetation, then no further mitigation is necessary. If suitable habitat occurs, implementation of **Mitigation Measures BIO-2** through **BIO-19** shall be required based on the resources identified.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3d (BIO-4) –** Potential to 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.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District; Qualified Biologist	Palmdale Water District	1. Retain Qualified Biologist to conduct a habitat assessment to confirm if additional mitigation measures apply. 2. Retain copies of habitat assessment results in project file.	1. Pre-construction 2. Pre-construction	1._____ 2._____
Mitigation Measure BIO-2: Special-Status Plant Surveys, Avoidance Measures, Mitigation, and Monitoring Plan This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for special-status plant species is identified within the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. PWD shall retain a qualified biologist to conduct surveys for special-status plants prior to any vegetation removal, grubbing, or other construction activity within each proposed Project component footprint. The surveys shall be floristic in nature and seasonally timed to coincide with the blooming periods of the following special-status species with potential to occur: • **All Project Components except Palmdale Ditch Conversion Project:** Horn's milk-vetch, Palmer's mariposa-lily, alkali mariposa-lily, white pygmy-poppy, Mojave paintbrush, short-joint beavertail, Greata's aster, Peirson's morning-glory, sagebrush loeflingia, and Robbins' nemacladus. • **Palmdale Ditch Conversion Project:** Horn's milk-vetch, Palmer's mariposa-lily, alkali mariposa-lily, white pygmy-poppy, Mojave paintbrush, short-joint beavertail, and Greata's aster. The surveys shall be conducted during the relevant target species' blooming periods no more than two years prior to construction. Special-status plant species identified on site shall be mapped onto a site-specific aerial photograph. Surveys shall be conducted in accordance with the most current California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) protocols. A report of the survey results shall be submitted to PWD for review and approval.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3e (BIO-5) –** Potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Biologist; Construction Contractor; Qualified Restoration Specialist	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain Qualified Biologist to conduct surveys for special-status plant species listed in the measure and prepare report of survey results. Review and approve survey report. 3. If special-status plant species are identified, perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with avoidance buffer. 4. If avoidance is not feasible, retain a Qualified Restoration Specialist to develop and implement a Special-Status Plant Mitigation and Monitoring Plan. Review and approve Special-Status Plant Mitigation and	1. Contracting 2. Pre-construction 3. Construction 4. Pre-construction, Construction, and Post-construction	1._____ 2._____ 3._____ 4._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
If special-status plants other than western Joshua trees are detected during special-status plant surveys, the observed special-status plants shall be avoided through Project component design where feasible, and vegetation clearing within 50 feet (15 meters) of any identified special-status plant shall be conducted by hand by the construction contractor(s), if practicable. An avoidance buffer of at least 50 feet (15 meters), or other distance as approved by a qualified biologist, shall be established around any identified special-status plants that can be feasibly avoided, and the avoidance buffer shall be delineated with bright orange protective fencing. The avoidance buffers shall be maintained for the duration of construction activities at each construction site and shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site. If special-status plants other than western Joshua tree are detected during special-status plant surveys and would be impacted by Project component construction, PWD shall retain a qualified restoration specialist to develop a Special-Status Plant Mitigation and Monitoring Plan that provides for the on-site or off-site replacement of the species impacted by the Project component. The Special-Status Plant Mitigation and Monitoring Plan shall specify the following: • A summary of impacts; • The location of the mitigation site; • Methods for harvesting seeds or salvaging and transplanting individuals to be impacted; • Measures for propagating plants or transferring living plants from the salvage site to the mitigation site; • Site preparation procedures for the mitigation site; • A schedule and action plan to maintain and monitor the mitigation site; • Criteria and performance standards by which to measure the success of the mitigation, including replacement of impacted plants at a minimum 1:1 ratio, to be determined in consultation with CDFW if a Lake or Streambed Alteration Agreement pursuant to CFGC Section 1602 or Incidental Take Permit pursuant to CFGC Section 2081 is otherwise required for the Project component; • Measures to exclude unauthorized entry into the mitigation areas; and • Contingency measures such as replanting or weeding if mitigation efforts are not successful. • The performance standards for the Special-Status Plant Mitigation and Monitoring Plan shall be, at a minimum, the following: o Within five years after introducing the plants to the mitigation site, the number of established, reproductive plants shall equal the number impacted during Project component construction; and o Restoration shall be considered successful after the success criteria have been met for a period of at least two years without any maintenance or remediation activities other than invasive species control.					Monitoring Plan, annual reports, and final report. 5. Retain copies of survey report, inspection records, Special-Status Plant Mitigation and Monitoring Plan, annual reports, and final report in project file.	5. Post-construction	5._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
The Special-Status Plant Mitigation and Monitoring Plan shall be initiated prior to Project component construction (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation) and shall be implemented over a five-year period. The plan may also be combined with the Habitat Revegetation, Restoration, and Monitoring Program described under **Mitigation Measure BIO-19.** Annual reports discussing the implementation and management of the Special-Status Plant Mitigation and Monitoring Plan shall be submitted to PWD for review and approval. Five years after the start of the mitigation for the Project component, a final report shall be submitted to PWD for review and approval and shall, at a minimum, discuss the implementation and management of the Special-Status Plant Mitigation and Monitoring Plan over the five-year period and indicate whether the Special-Status Plant Mitigation and Monitoring Plan has been successful based on the established performance standards. Should the success criteria be met before Year Five, the mitigation effort can be deemed complete.							

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials

Mitigation Measure BIO-3: Joshua Tree Census Survey, Avoidance, Minimization, and Compensation Measures
This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for western Joshua tree is identified within 50 feet of the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. A western Joshua tree census survey shall be conducted for that component by a qualified arborist in accordance with CDFW's Western Joshua Tree Census Instructions, which requires a census of all western Joshua trees within the Project component area and a 50-foot buffer.
 	
Impacts to western Joshua trees and within a minimum 50-foot buffer shall be avoided to the extent feasible. An avoidance buffer of at least 50 feet shall be established around western Joshua tree individuals that can be feasibly avoided. If a 50-foot buffer is not feasible, a reduced buffer can be established if a qualified desert native plant specialist and CDFW determine the reduced buffer would avoid direct impacts to individual western Joshua tree(s). No activities shall occur within the buffer. The avoidance buffers shall be maintained for the duration of construction activities in each work area and shall be removed only after the conclusion of all grading, clearing, and construction activities at each Project component construction site.
 	
For each dead or live western Joshua tree individual that cannot be avoided through Project component design, PWD shall implement one of the following measures:
• The western Joshua tree individual shall be trimmed or relocated under the guidance of a desert native plant specialist. Tree relocation shall be implemented in accordance with the following measures and CDFW-provided guidelines and relocation protocols, if made available prior to Project component construction, to assist the survival of the relocated tree:
  ○ The relocated western Joshua tree shall be placed in a suitable location and with proper orientation to improve its survival.
  ○ The western Joshua tree shall be relocated at a time that maximizes its survival, when feasible.
  ○ A desert native plant specialist shall be on site to oversee relocation of the tree.
• PWD shall submit payment of an in-lieu fee to CDFW pursuant to CDFW's standard mitigation fee structure for western Joshua tree in effect at the time of application for an Incidental Take Permit.
	Impact 3.3a (BIO-1) – Potential to have a substantial adverse effect, 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 Service.
	
	Impact 3.3e (BIO-5) – Potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
		Construction: Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Arborist; Construction Contractor; Desert Native Plant Specialist	Palmdale Water District	1. Confirm that contract documents include mitigation measure.
					
					2. Retain Qualified Arborist to conduct western Joshua tree census survey.
					
					3. If western Joshua trees are identified, perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with avoidance buffer.
					
					4. If avoidance is infeasible, retain a desert native plant specialist to oversee relocation of the tree or submit payment of in-lieu fee to CDFW.
					
					5. Retain inspection records and records of relocation or fee payment in project file.
						1. Contracting
						
						2. Pre-construction
						
						3. Construction
						
						4. Pre-construction and Construction
						
						5. Post-construction
							1._____
							
							2._____
							
							3._____
							
							4._____
							
							5._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure BIO-4: Arroyo Toad, Desert Tortoise, Tricolored Blackbird, and Least Bell's Vireo Avoidance, Minimization, and Compensation Measures This mitigation measure is applicable to the Project components for which suitable habitat for arroyo toad, desert tortoise, tricolored blackbird, and/or least Bell's vireo is identified within 500 feet of the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1** and does not apply to the Palmdale Ditch Conversion project. Focused protocol surveys shall be conducted by a qualified biologist following the protocol outlined in the most recent USFWS and/or CDFW protocol guidelines. These currently include: 1999 Survey Protocol for the Arroyo Toad; 2018 Preparing for Any Action That May Occur Within the Range of the Mojave Desert Tortoise (*Gopherus agassizii*); 2015 Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015; and 2001 Least Bell's Vireo Survey Guidelines). If any special-status wildlife species are observed during the focused surveys, these species and their habitat shall be avoided by the proposed Project. If avoidance of the special-status wildlife species is not feasible, and special-status wildlife may be potentially impacted by the proposed Project, additional avoidance and mitigation measures will be required, such as constructing proposed Project facilities outside the breeding season, establishing a suitable buffer around known territories, and restricting activities around certain times of year. If the proposed Project results in permanent impacts to habitat occupied by special-status wildlife species, USFWS and CDFW shall be consulted to ensure compliance with the Endangered Species Act and/or requirements for avoidance, minimization, or mitigation measures (e.g., replacement of impacted occupied habitat at a minimum 1:1 ratio, to be determined in consultation with USFWS and/or CDFW, as applicable). If species are identified and cannot be avoided, species-specific mitigation measures included in this section shall apply as applicable.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Biologist; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain a Qualified Biologist to conduct focused protocol surveys for applicable species. 3. If arroyo toad, desert tortoise, tricolored blackbird, and/or least Bell's vireo are identified, verify project design avoids these species and their habitat, if feasible. 4. If permanent impacts are expected to occur to habitat occupied by special-status wildlife species, consult with USFWS and CDFW. 5. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with avoidance and minimization measures. 6. Retain copies of focused survey results, inspection records, and consultation efforts in project file.	1. Contracting 2. Pre-construction 3. Pre-construction 4. Pre-construction 5. Construction 6. Post-construction	1._____ 2._____ 3._____ 4._____ 5._____ 6._____

Mitigation Measure BIO-5: Crotch's Bumble Bee Avoidance, Minimization, and Compensation Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for Crotch's bumblebee is identified within 50 feet of the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1.** If Crotch's bumble bee is still considered a CESA candidate species or has been listed as threatened or endangered under CESA at the time construction of Project components commences, PWD shall implement the following avoidance, minimization, and compensation measures for this species: • A qualified biologist shall conduct a protocol-level presence/absence survey for Crotch's bumble bee in areas of the Project component site with suitable habitat during the peak active period for Crotch's bumble bee (highest detection probability) that occurs prior to the start of the Project component's initial ground disturbing activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). The peak active period for Crotch's bumble bee in the Project area is anticipated to be April through June given the expected desiccation of Crotch's bumble bee floral resources within the Project area by mid-summer, though this timing could depend on annual climatic factors. Survey methodology shall be based on Section 4.1.1 of CDFW's Survey Considerations for CESA Candidate Bumble Bee Species (CDFW 2023b), or the most current CDFW guidance in effect at the time. Inaccessible areas outside of the Project component site can be surveyed using binoculars from the Project component edge or from public roads. The timing of the presence/absence survey can be phased with Project component build-out, if feasible. • If construction starts one year or more after the conclusion of the surveys described above, PWD shall consult with CDFW as to whether additional surveys are required and shall retain a qualified biologist to conduct additional surveys if recommended by CDFW. • If Crotch's bumble bee is present, the qualified biologist shall identify the location of nests in or adjacent to the Project component site to the extent feasible. Inaccessible land adjacent to the Project component site shall be observed using binoculars. If nests are identified within the Project component site or immediately adjacent to the site, a qualified biologist shall determine the need to establish a no-disturbance buffer around the nest, where feasible, to reduce the risk of disturbance or accidental take. The buffer shall provide at least 50 feet (15 meters) of clearance around active nest entrances. If Project component activities may result in disturbance or potential take, the qualified biologist, in coordination with CDFW, shall expand the buffer zone as necessary to prevent disturbance or take. If establishment of a no-disturbance buffer is feasible, construction activities shall not occur within the buffer until a qualified biologist determines the colony is no longer active (i.e., no Crotch's bumble bees are seen flying in or out of the nest for three consecutive days, indicating the colony has completed its nesting season and the next season's queens have dispersed from the colony). Once the nest has been determined to be inactive, construction activities within the no-disturbance buffer(s) shall be allowed to	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Biologist; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain Qualified Biologist to conduct protocol-level surveys for Crotch's bumble bee. 3. If avoidance of any identified Crotch's bumble bee nests is infeasible, consult CDFW. 4. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with avoidance buffer. 5. If Crotch's bumble bee are present, replace impacted floral resources at a 1:1 ratio. 6. Retain copies of survey results, consultation efforts, inspection records, and/or compensatory mitigation for floral resources in project file.	1. Contracting 2. Pre-construction 3. Pre-construction 4. Construction 5. Post-construction 6. Post-construction	1._____ 2._____ 3._____ 4._____ 5._____ 6._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
resume. Otherwise, the no-disturbance buffer shall be maintained for the duration of Project component construction activities in each work area and shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site. • If establishment of a no-disturbance buffer and/or avoidance of the nest is not feasible, the qualified biologist shall consult with CDFW regarding potential encroachment into the no-disturbance buffer and for Project component activities that may result in take of Crotch's bumble bee. • If Crotch's bumble bee is determined to be present on the Project component site, floral resources associated with the species that will be removed or damaged by Project component activities in the areas of the Project component site where Crotch's bumble bee is detected and documented shall be replaced at a minimum 1:1 ratio, to be determined in consultation with CDFW as part of the Incidental Take Permit process pursuant to CFGC Section 2081 for the Project component. Planning and implementation of suitable habitat replacement may be integrated into the Habitat Revegetation, Restoration, and Monitoring Program described under **Mitigation Measure BIO-19**.							

Mitigation Measure BIO-6: Burrowing Owl Breeding Season Survey and Foraging Habitat Mitigation This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for burrowing owl is identified within 500 feet of the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. PWD shall retain a qualified biologist to conduct focused breeding season surveys for burrowing owl in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012), or the most current CDFW guidance in effect at the time. Surveys shall be conducted during the burrowing owl breeding season immediately prior to the start of Project component construction. The focused surveys shall be conducted by a qualified biologist in the portions of the Project component site with suitable burrowing owl habitat plus a 500-foot buffer (burrowing owl survey area). The surveys shall be conducted in the morning or evening to evaluate the presence/absence of burrowing owl during the nesting season. All potential burrowing owls and burrows with burrowing owl sign shall be recorded using a GPS unit capable of submeter accuracy. Observations shall be conducted to determine if individual owls and/or nesting pairs are present and their status/disposition (e.g., late winter migrant, actively nesting, single individual not nesting). Representative photos of the habitat, potential and occupied burrows, and vegetation within the burrowing owl survey area shall be taken and included as an appendix to the survey report. All vertebrate fauna detected in the burrowing owl survey area shall be recorded in field notes. Inaccessible areas of the burrowing owl survey area outside the Project component site shall be surveyed using binoculars and/or spotting scopes to determine if owls are present. A survey report shall be prepared that includes survey methodology, survey results, an analysis of potential Project component impacts to actively nesting pairs, and a calculation of the compensatory mitigation for foraging habitat, if impacted. Late winter migrants and non-nesting individuals located outside of the Project component impact area shall not require habitat mitigation unless passive relocation is necessary. Maps showing burrow locations, a delineation of suitable habitat areas, and burrowing owls observed shall be included in the survey report. If actively breeding owls are observed within 500 feet of Project component activities, PWD shall implement compensatory mitigation for impacts to foraging habitat based on the following methodology: • A 500-foot buffer shall be established around each active nest burrow to indicate the primary foraging habitat area for each nesting pair. • Permanent Project component disturbance areas shall be overlain onto the foraging buffer zone(s) to calculate the area(s) of habitat loss. • Permanent foraging habitat loss shall be mitigated at a 1:1 ratio. Compensatory mitigation for loss of foraging habitat shall be implemented on- or off-site and may include purchase of Conservation Bank credits, payment of an in-lieu fee to benefit burrowing owl, or permanent conservation and management of burrowing owl habitat through the recordation of a conservation easement, funding of a non-wasting endowment, and/or	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Biologist	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain a Qualified Biologist to conduct focused breeding season surveys for burrowing owl foraging habitat. 3. If actively breeding owls are observed within 500 feet of Project component activities, determine extent of impacts and implement on- or off-site compensatory mitigation for impacts to foraging habitat. 4. Retain copies of survey report and documentation of compensatory mitigation efforts in project file.	1. Contracting 2. Pre-construction 3. Pre-construction 4. Post-construction	1._____ 2._____ 3._____ 4._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
implementation of a Mitigation Land Management Plan based on the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Mitigation lands shall be identified through coordination with CDFW on, adjacent, or proximate to the impact site where practicable and where habitat is suitable to support burrowing owl.							

Mitigation Measure BIO-7: Burrowing Owl Pre-Construction Clearance Survey and Occupied Burrow Avoidance and Minimization Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for burrowing owl is identified within 500 feet of the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1.** PWD shall retain a qualified biologist to conduct a pre-construction burrowing owl clearance survey of areas within the Project component site and a 500-foot buffer that contain suitable burrowing owl habitat to confirm presence/absence of burrowing owl individuals no more than 14 days prior to start of construction in each work area. The survey methodology shall be consistent with the methods outlined in the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). If no active breeding or wintering owls or evidence of occupied habitat is identified, then Project component construction in the work area may begin, and no further action is required. If active breeding or wintering owls or evidence of occupied habitat is detected in the Project component work area or within a 500-foot buffer, PWD shall implement the following measures for mitigation of potential burrowing owl presence in the Project area in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012): • A qualified biologist shall be present on site during initial ground disturbing activities in potential burrowing owl habitat identified in the habitat assessment. • Occupied burrows shall not be disturbed during the nesting season (February 1 to August 31). • No ground disturbing activities shall be permitted within a buffer no less than 656 feet (200 meters) from an active burrowing owl burrow during the breeding season, depending on the level of disturbance, unless the qualified biologist determines a reduced buffer would not adversely affect the burrowing owl(s). • During the nonbreeding (winter) season (September 1 to January 31), ground disturbing work can proceed near active burrowing owl burrows at the discretion of the qualified biologist as long as the work occurs no closer than 165 feet (50 meters) from the burrow, depending on whether the level of disturbance is low and if the active burrow is not directly affected by the Project component activity. A smaller/larger buffer may be established by the qualified biologist following monitoring and assessment of the Project component's effects on the burrowing owl(s). • If active winter burrows are found that would be directly affected by ground disturbing activities, owls can be excluded from winter burrows according to recommendations in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). The qualified biologist shall prepare a passive relocation program in accordance with Appendix E (Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012) and submit the passive relocation program to PWD and CDFW for review and approval prior to the commencement of ground disturbance activities. If required, a compensatory mitigation agreement shall be developed in coordination with CDFW prior to passive relocation of owls.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Biologist; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain a Qualified Biologist to conduct pre-construction burrowing owl clearance surveys. 3. If actively breeding owls are observed within 500 feet of Project component activities, retain a Qualified Biologist to be present on site during initial ground disturbing activities. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with avoidance buffer. 4. If active winter burrows are found that would be directly affected by ground disturbing activities, retain a Qualified Biologist to prepare and implement a passive relocation program. Review and approve passive relocation program and submit to CDFW for review and approval. If necessary, develop a compensatory mitigation agreement with CDFW. Review and approve final passive relocation report. 5. Retain copies of survey results, inspection records, the passive relocation program and final report, and compensatory mitigation agreement in project file.	1. Contracting 2. Pre-construction 3. Construction 4. Construction 5. Pre-construction	1._____ 2._____ 3._____ 4._____ 5._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
• Smaller non-disturbance buffers may be permitted in the winter (and sometimes breeding season) for the burrowing owl individuals if a noise and visual barrier, such as hay bale walls, is installed between the occupied burrowing owl burrow and construction activities, as long as the qualified biologist determines the reduced buffer will provide adequate protection. • When a qualified biologist determines burrowing owls are no longer occupying the Project component site and passive relocation is complete, ground disturbing activities may begin. A final letter shall be prepared by a qualified biologist documenting the results of the passive relocation. The letter shall be submitted to CDFW.							

Mitigation Measure BIO-8: Swainson's Hawk Avoidance and Minimization Measures
This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for Swainson's hawk is identified within 0.5-mile of the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. Construction activities shall be limited to the period between September 16 and February 28 to the extent feasible. If construction activities cannot be completed within this timeframe, PWD shall retain a qualified biologist(s) with Swainson's hawk survey experience to conduct a Swainson's hawk nest survey within the Project component site and a 0.5-mile buffer during the nesting season immediately prior to the commencement of Project component construction. While the proposed Project does not propose to construct renewable energy facilities, nest survey methods and timing shall follow those outlined in the CEC and CDFW protocol for the Antelope Valley (CDFW 2010) with the exception that the nest survey shall occur within a 0.5-mile buffer of the Project component site. A report documenting results of the survey shall be prepared and submitted to PWD for review and approval prior to commencement of Project component activities. If no Swainson's hawk nests are documented within 0.5 mile of the Project area, no additional action shall be required.
 	
If an active Swainson's hawk nest is detected within 0.5 mile of the Project component site, PWD shall implement the following measures:
 	
• Retain a qualified biologist to prepare a Swainson's Hawk Nest Monitoring and Mitigation Plan that incorporates the following measures to avoid and minimize impacts to Swainson's hawk nests in and near the construction areas during the breeding season (March 1 to September 15):
  ○ If nesting Swainson's hawks are detected within 0.5 mile of Project component activities during the breeding season, CDFW shall be consulted regarding the establishment of a no-disturbance buffer to avoid impacts to the active nest. Construction activities shall maintain a 0.25-mile no-disturbance buffer around an active nest unless a reduced buffer is approved in consultation with the qualified biologist and CDFW.
  ○ If construction activities are necessary within the buffer zone, PWD shall consult with CDFW as to the potential for take. Monitoring of the nest site by a qualified biologist and funding of Swainson's hawk recovery efforts may be necessary.
  ○ If a hawk is found injured during Project component activities on the Project component site, the injured hawk shall be immediately relocated to a raptor recovery center approved by CDFW. The qualified biologist shall notify CDFW personnel via telephone or email, followed by a written report that includes the date, time, location, and circumstances of the incident.
 	
PWD and its construction contractor(s) shall implement the provisions of the Swainson's Hawk Nest Monitoring and Mitigation Plan. A report documenting measures taken to avoid and minimize impacts to Swainson's hawk nests shall be prepared by the qualified biologist following the completion of Project component construction and submitted to PWD for review and approval.
	Impact 3.3a (BIO-1) – Potential to have a substantial adverse effect, 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 Service.
	
	Impact 3.3f (BIO-6) – Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.
		Construction: Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Biologist; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure.
					
					2. If construction activities cannot be completed within the designated timeframe, retain a Qualified Biologist to conduct a Swainson's hawk nest survey. Review and approve survey report.
					
					3. If an active Swainson's hawk nest is detected during surveys, retain a Qualified Biologist to prepare a Swainson's Hawk Nest Monitoring and Mitigation Plan. Review and approve plan.
					
					4. Implement Swainson's Hawk Nest Monitoring and Mitigation Plan.
					
					5. Review and approve final report of mitigation efforts.
					
					6. Retain copies of survey report, Swainson's Hawk Nest Monitoring and Mitigation Plan, any consultations with CDFW, and mitigation report in project file.
						1. Contracting
						
						2. Pre-construction
						
						3. Pre-construction
						
						4. Construction
						
						5. Post-construction
						
						6. Post-construction
							1._____
							
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							6._____

Mitigation Measure BIO-9: Mohave Ground Squirrel Avoidance and Minimization Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for Mohave ground squirrel is identified within 50 feet of the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. PWD shall retain a qualified biologist to conduct a focused habitat assessment (visual survey) of the Project component site following the CDFW's Mohave Ground Squirrel Survey Guidelines (CDFW 2023c) to assess the potential habitat suitability for the species. If suitable habitat is identified, protocol live-trapping surveys shall be conducted in areas of suitable habitat to assess the potential presence and relative abundance of Mohave ground squirrel within the Project component site. Pursuant to the protocol outlined in the Mohave Ground Squirrel Survey Guidelines, trapping surveys shall take place over three terms in specific timing windows in the period of March 15 and July 15 immediately prior to commencement of Project component activities. If construction starts one year or more after the conclusion of surveys, PWD shall consult with CDFW as to whether additional surveys are required and shall retain a qualified biologist to conduct additional surveys if recommended by CDFW. Findings of the habitat assessment and live-trapping surveys shall be documented in a report that also details survey methodology, timing, and surveyor qualifications. If no Mohave ground squirrels are discovered during the protocol surveys, no further action is required. If Mohave ground squirrels are observed during the surveys, PWD shall retain a qualified biologist to develop a Mohave ground squirrel biological monitoring plan, in coordination with CDFW, that includes measures to avoid, minimize, and/or mitigate potential impacts as a result of Project component activities, including, but not limited to: • A qualified biologist shall conduct pre-construction clearance surveys for Mohave ground squirrel no more than 30 days prior to the start of any ground-disturbing activities in areas of the Project component site that contain suitable habitat for the species, as documented in the Mohave ground squirrel habitat assessment and survey report. The survey shall cover 100 percent of the anticipated impact area intersecting suitable Mohave ground squirrel habitat and a 50-foot buffer (survey area). A qualified biologist shall document locations of potential Mohave ground squirrel burrows. A 50-foot no-disturbance buffer shall be established around suspected or known Mohave ground squirrel burrows. Project component activities shall not be conducted within the no-disturbance buffer unless at the discretion of the qualified biologist. A report documenting the results of the survey, locations of suspected or known Mohave ground squirrel burrows, and recommended no-disturbance buffers shall be submitted to PWD for review and approval prior to commencement of Project component activities in the survey area. • If burrows are identified during the survey that are suspected or known to be occupied by Mohave ground squirrel and cannot be avoided, the qualified biologist shall prepare a Mohave Ground Squirrel Relocation Plan outlining measures to relocate individual Mohave ground squirrels prior to construction start. The plan shall be submitted to PWD and	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Biologist; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain a qualified biologist to conduct a focused habitat assessment for Mohave ground squirrel and protocol live-trapping surveys if suitable habitat is identified. Review and approve survey report. 3. If Mohave ground squirrels are observed, retain a Qualified Biologist to develop a Mohave ground squirrel biological monitoring plan. Review and approve plan. 4. Implement provisions of Mohave ground squirrel biological monitoring plan. Review and approve pre-construction clearance survey report and relocation report. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with stockpiling restrictions. 5. Retain copies of survey reports, Mohave ground squirrel biological monitoring plan, relocation report, and site inspection records in project file.	1. Contracting 2. Pre-construction 3. Pre-construction 4. Pre-construction and Construction 5. Post-construction	1._____ 2._____ 3._____ 4._____ 5._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
CDFW for review and approval and shall be implemented prior to commencement of Project component activities in work areas with suspected or known Mohave ground squirrel burrows. The Plan shall outline measures for burrow excavation, handling of individuals, identification of proposed relocation areas, and release of relocated individuals after the conclusion of all grading, clearing, and construction activities. A report documenting relocation activities and outcomes shall be prepared by the qualified biologist and submitted to PWD and CDFW for review and approval after completion of relocation activities. The Plan shall also detail restoration of and/or compensatory mitigation, at a minimum 1:1 ratio, of occupied Mohave ground squirrel habitat that is temporarily or permanently impacted by the Project activities if required by CDFW as part of the Incidental Take Permit process pursuant to CFGC Section 2081 for the Project component. • Within occupied Mohave ground squirrel habitat (as determined by the results of the focused habitat assessment and live trapping survey results as well as the pre-construction clearance survey results), the area of disturbance of vegetation and soils shall be the minimum required for the Project component. Clearing of vegetation and grading shall be minimized. Wherever practicable, rather than clearing vegetation and grading access routes, equipment and vehicles shall use existing surfaces or previously disturbed areas. Where grading is necessary, surface soils shall be stockpiled and replaced following construction. To the extent practicable, disturbance of shrubs and surface soils due to stockpiling shall be minimized. A qualified biologist shall monitor Project component activities during initial ground disturbance in suitable Mohave ground squirrel habitat. The qualified biologist shall work with the construction foreman and crew to implement and achieve compliance with the Mohave ground squirrel biological monitoring plan prepared for the Project component.							

Mitigation Measure BIO-10: Roosting Bats Avoidance and Minimization Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for special-status bats is identified within the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. PWD shall implement the following measures for special-status roosting bats: • To the extent feasible, demolition or disturbance of suitable bat roosting habitat (e.g., live and dead trees, rock outcrops) shall be scheduled between October 1 and February 28, outside of the maternity roosting season. • If suitable roost trees must be encroached during the maternity season (March 1 to September 30) or structures must be removed at any time of the year, PWD shall retain a qualified bat specialist to conduct a pre-construction survey no more than seven days prior to the start of Project component construction in a given work area to identify those trees or structures proposed for disturbance that could provide hibernacula or nursery colony roosting habitat for bats. The trees or structures shall be closely inspected by the bat specialist to determine the presence or absence of roosting bats. If potentially suitable hibernacula or nursery colony roosting habitat for bats is not present in areas anticipated to be directly impacted by Project component activities, no additional action is required. • Trees or structures determined to be maternity roosts shall be left in place until the end of the maternity season (March 1 to September 30). Any structure containing a hibernating colony shall be left in place until a qualified bat specialist determines the bats are no longer hibernating. • If bats are not detected, but the bat specialist determines roosting bats may be present at any time of year, trees or structures shall be brought down in a controlled manner using heavy machinery. To ensure the optimum warning for any roosting bats that may still be present, the trees or structures shall be nudged lightly two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active. Trees or structures may then be pushed to the ground slowly under the supervision of a qualified bat specialist. Felled trees shall remain in place until they are inspected by a bat specialist. Trees that are known to be bat roosts shall not be sawed up or mulched immediately. A period of at least 48 hours shall elapse prior to such operations to allow bats to escape. • The bat specialist shall document all demolition monitoring activities and prepare a summary report for review and approval by PWD upon completion of tree disturbance or structure demolition activities. • In exceptional circumstances, such as when roosts cannot be avoided and bats cannot be evicted by non-invasive means, it may be necessary to capture and transfer the bats to appropriate natural or artificial bat roosting habitat in the surrounding area. Bats raising young or hibernating shall not be captured and relocated. Capture and relocation shall be performed by a qualified bat specialist in coordination with CDFW requirements and shall be subject to approval by CDFW. • If confirmed occupied or formerly occupied bat roosting habitat is destroyed during Project component construction, the bat specialist	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Bat Specialist	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. If suitable roost trees must be encroached during the maternity season (March 1 to September 30) or structures must be removed at any time of the year , retain a Qualified Bat Specialist to conduct a pre-construction survey for roosting bats. 3. If roosts cannot be avoided and bats cannot be evicted by non-invasive means, retain a Qualified Bat Specialist to relocate in coordination with and subject to approval of CDFW. 4. If confirmed occupied or formerly occupied bat roosting habitat will be destroyed during Project component construction, retain a Qualified Bat Specialist to determine the need for and design/location of artificial bat roots and to prepare and implement a monitoring plan for bat roosts. 5. Review and approve summary report of demolition monitoring activities. 6. Review and approve annual reports and final report. 7. Retain copies of survey summary report, relocation report, monitoring plan, and annual/final monitoring reports in project file.	1. Contracting 2. Pre-construction 3. Pre-construction 4. Pre-construction 5. Post-construction 6. Post-construction 7. Post-construction	1._____ 2._____ 3._____ 4._____ 5._____ 6._____ 7._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
shall determine the need for artificial bat roosts based on the availability and condition of suitable bat roosts in the immediate vicinity of the Project component site. If artificial bat roosts are deemed necessary due to a potential lack of suitable bat roosts in the area, the artificial roosts shall be of comparable size and quality and shall be constructed and maintained at a suitable undisturbed area. The design and location of the artificial bat roosts shall be determined by the bat specialist in consultation with CDFW and pursuant to the following standards: ○ A monitoring plan shall be prepared for the replacement roosts, which shall include performance standards for the use of the replacement roosts by the displaced species, as well as provisions to prevent harassment, predation, and disease of relocated bats. The performance standards shall consider the location and condition of habitat where replacement roosts are placed and shall be sufficient to serve the number of bats estimated to be displaced by Project component impacts to suitable roosting habitat. Annual reports detailing the success of roost replacement and bat relocation shall be prepared and submitted to PWD and CDFW for five years following relocation. If artificial roosts are not in use by the third year of monitoring, PWD shall consult with CDFW as to larger trends in bat populations in the area that may be affecting roost use and/or determine if adjustments to roost location or design are needed.							

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure BIO-11: Woodrat Midden Avoidance and Minimization Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for special-status woodrat species is identified within 10 feet of the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. PWD shall retain a qualified biologist to conduct a pre-construction survey for active woodrat middens in and adjacent to areas anticipated for ground disturbance or vegetation removal in the Project component site within 30 days prior to initial site disturbance at each construction site. A report documenting pre-construction survey results, including the location of any active woodrat middens, shall be submitted to PWD for review and approval. If no active woodrat middens are observed during the pre-construction survey, no additional action shall be required. All occupied woodrat middens shall be mapped and flagged for avoidance to the extent feasible, with a minimum 10-foot buffer surrounding the active midden. If avoidance is not feasible, middens shall be "daylighted" by a qualified biologist one night before anticipated vegetation removal or ground disturbance within each construction site to allow for the rats to escape and passively relocate prior to disturbance of the area. A brief report documenting the passive relocation actions taken shall be submitted to PWD for review and approval prior to commencement of Project component construction activities within 10 feet of the active woodrat middens.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Biologist; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain a Qualified Biologist to conduct a pre-construction survey for active woodrat middens. Review and approve survey report. 3. If avoidance of occupied woodrat middens is not feasible, retain a Qualified Biologist to "daylight" middens. Review and approve passive relocation report. 4. If occupied woodrat middens are observed, perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with avoidance buffer. 5. Retain copies of survey report, inspection record, and passive relocation report in project file.	1. Contracting 2. Pre-construction 3. Pre-construction 4. Construction 5. Post-construction	1._____ 2._____ 3._____ 4._____ 5._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure BIO-12: Pre-construction Surveys for Special-Status Wildlife Species PWD shall implement the following preconstruction surveys for special-status wildlife species: • **All Project Components except Palmdale Ditch Conversion Project:** If suitable habitat for any special-status wildlife species with the potential to occur (e.g., western pond turtle, Northern California legless lizard, California legless lizard, California glossy snake, coast horned lizard, two-striped gartersnake, pallid bat, Townsend's big-eared bat, San Diego desert woodrat) is identified during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**, pre-construction surveys shall be required prior to ground-disturbing activities. If any of these species are identified on or near construction areas during the preconstruction survey, **Mitigation Measures BIO-13 through BIO-16** shall be implemented. Additional avoidance measures may include establishing a buffer around the species or host plants if a population of a special-status species is observed. • **Palmdale Ditch Conversion Project:** PWD shall retain a qualified biologist to conduct a pre-activity clearance survey for special-status reptile species no more than seven days prior to commencement of ground or vegetation disturbing activities at each work area within the Palmdale Ditch Conversion project site. The pre-activity survey shall utilize methods to detect special-status reptile species with potential to occur at the site. Prior to commencement of Palmdale Ditch Conversion project construction activities at each work area, the methods and results of the surveys and, if a special-status reptile species is found, recommended species-specific avoidance and/or relocation measures, shall be submitted in a report for review and approval by PWD, and implemented during construction activities. These measures may include, but would not be limited to, the qualified biologist conducting a sweep of the proposed impact areas before the daily start of construction in each work area in the locations where special-status reptile individuals were observed during the pre-construction survey, or have moderate or high potential to occur based on habitat suitability as determined by the qualified biologist, and avoidance of work in the sweep areas until the qualified biologist confirms special-status reptiles are not present, or if present, until they have moved out of harm's on their own, as determined by the qualified biologist, or have been moved out of harm's way to adjacent suitable habitat by the qualified biologist.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Biologist; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain a Qualified Biologist to conduct pre-construction special-status wildlife surveys. 3. If species are identified for all Project components except the Palmdale Ditch Conversion Project, implement Mitigation Measures BIO-13 through BIO-16. 4. For the Palmdale Ditch Conversion project, implement species-specific avoidance or relocation measures recommended by the Qualified Biologist. 5. Retain copies of survey report and mitigation efforts in project file.	1. Contracting 2. Pre-construction 3. Pre-construction and Construction 4. Pre-construction and Construction 5. Post-construction	1._____ 2._____ 3._____ 4._____ 5._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure BIO-13: General Best Management Practices This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which special-status wildlife species are identified during the pre-construction survey conducted pursuant to **Mitigation Measure BIO-12** and/or for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted. PWD shall require construction contractor(s) and their personnel to adhere to the following general BMPs during construction: • Construction-related vehicles shall observe a 10-mile-per-hour speed limit within the unpaved limits of construction. • All open trenches or excavations shall be fenced and/or sloped to prevent entrapment of wildlife species. • All food-related trash items such as wrappers, cans, bottles, and food scraps generated during construction shall be disposed of in closed containers only and removed daily from the construction site. • No deliberate feeding of wildlife shall be allowed. • No pets shall be allowed on the construction site. • No firearms shall be allowed on the construction site. • Vehicle or equipment maintenance shall be performed in designated staging areas. • Access to the construction area outside of established work hours for the proposed Palmdale Ditch Conversion project shall be prohibited. • If construction must occur at night (i.e., between dusk and dawn), all lighting shall be shielded and directed downward to minimize the potential for glare or spillover. • During construction, heavy equipment shall be operated in accordance with standard BMPs. All equipment used on-site shall be properly maintained to avoid leaks of oil, fuel, or residues. Provisions shall be in place to remediate accidental spills. • While encounters with special-status species are not anticipated, any worker who inadvertently injures or kills a special-status species or finds one dead, injured, or entrapped shall immediately report the incident to the construction foreman or biological monitor (required under **Mitigation Measure BIO-16**). The construction foreman or biological monitor shall immediately notify PWD.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3e (BIO-5) –** Potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-12	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with best management practices. 3. Retain copies of inspection records in project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure BIO-14: Work Limit Delineation This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which special-status wildlife species are identified during the pre-construction survey conducted pursuant to **Mitigation Measure BIO-12** and/or for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted. PWD shall clearly identify work area limits on design and construction plans and shall require its construction contractor(s) to delineate and clearly mark approved construction work area limits with flagging or temporary orange construction fencing in the field prior to initial ground disturbing activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). The marked boundaries shall be maintained for the duration of construction activities in each work area and shall be clearly visible to personnel on foot and by heavy equipment operators. Fencing or other barriers shall be placed on the impact side of the work area limit (i.e., within the construction site boundaries) to reduce the potential for encroachment and additional vegetation loss within adjacent open space. Fencing shall be installed pursuant to the approved construction and grading plans. Prior to initial ground disturbing activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation), the biological monitor (if required under **Mitigation Measure BIO-16**) shall verify the limits of construction have been properly staked and are readily identifiable. Employees shall strictly limit their activities and vehicles to the designated construction area, staging areas, and routes of travel. Intrusion by unauthorized vehicles outside of construction limits shall be prohibited, with control exercised by an on-site foreman. All temporary fencing shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3e (BIO-5) –** Potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-12	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with work limit delineations. 3. Retain copies of inspection records in project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure BIO-15: Construction Worker Environmental Awareness Program This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which special-status wildlife species are identified during the pre-construction survey conducted pursuant to **Mitigation Measure BIO-12** and/or for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted. PWD shall retain a qualified biologist to conduct a preconstruction WEAP training for all personnel working on the Project component. The WEAP shall aid workers in recognizing special-status species and regulated biological resources known to occur (e.g., western Joshua trees, sensitive natural communities, jurisdictional waters or wetlands) or potentially occurring on the Project component site (as determined by the preconstruction survey conducted pursuant to **Mitigation Measure BIO-12** and the qualified biological monitor identified in **Mitigation Measure BIO-16** and as confirmed by the results of the focused surveys conducted pursuant to **Mitigation Measures BIO-2 through BIO-11**) and focus on conditions and protocols necessary to avoid and minimize potential impacts to biological resources. All personnel associated with construction of the Project component shall attend the WEAP training prior to initiation of construction activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). The training shall include information about the special-status species potentially occurring within the Project component site, identification of special-status species and habitats, a description of the regulatory status and general ecological characteristics of special-status resources, and a review of the limits of construction and measures required to avoid and minimize impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employees, and other personnel involved with construction. All employees working at the Project component construction site shall sign a form provided by the trainer documenting they have attended the WEAP and understand the information presented to them. The signed form shall be provided to PWD as documentation of training completion. The crew foreman shall be responsible for ensuring crew members adhere to the guidelines and restrictions designed to avoid impacts to special-status species and other regulated biological resources. If new personnel are brought onto the Project component after completion of the initial WEAP training, the training shall be conducted for all new personnel before they can participate in Project component construction activities. Construction personnel shall be instructed to not directly harm any special-status species on site by halting activities until the species can move to off-site areas or contact a qualified biologist to move the species out of harm's way, if appropriate.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3e (BIO-5) –** Potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-12	Palmdale Water District; Qualified Biologist; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain a Qualified Biologist to conduct WEAP training. Review and approve WEAP training materials. 3. Retain copies of WEAP training materials and attendance records in project file.	1. Contracting 2. Pre-construction 3. Post-construction	1._____ 2._____ 3._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure BIO-16: Qualified Biological Monitor This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which special-status wildlife species are identified during the pre-construction survey conducted pursuant to **Mitigation Measure BIO-12** and/or for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted. PWD shall retain a qualified biological monitor with relevant experience with the taxa and species in the Antelope Valley desert and mountain foothills for which pre-construction surveys, monitoring, or other support is required during Project component construction (potentially including, but not limited to, special-status plants, Northern California legless lizard, coast horned lizard, raptors, nesting birds, roosting bats, woodrats, and those special-status species with potential to occur based on the results of pre-activity and focused surveys conducted prior to Project component initiation in accordance with **Mitigation Measures BIO-2 through BIO-12** and **Mitigation Measure BIO-17**). The qualified biologist role may be satisfied by one or more individuals depending on qualifications and experience with one or more species and taxa. The qualified biologist shall be present during initial ground disturbance or vegetation removal activities and shall have the authority to temporarily stop work if one or more special-status species are observed that may be impacted by Project component activities. The biologist shall relocate special-status amphibian, reptile, or mammals present within anticipated Project component impact areas to suitable undisturbed habitat outside the areas directly and indirectly affected by construction activities. The biologist shall hold the requisite incidental take permits or authorizations for the capture and handling of the species, if applicable. The biologist shall recommend measures to ensure compliance with avoidance and minimization measures, applicable permit conditions, and conditions required for observed special-status species. When the biologist is present on site, they shall be responsible for: • Verifying Project compliance with environmental mitigation measures and requirements; • Establishing lines of communication and reporting methods in coordination with the construction crew foreman and PWD; • Conducting pre-construction clearance sweeps for special-status species and nesting birds, as needed; • Documenting special-status species observations; • Recommending preventative or protective actions to avoid and minimize potential Project impacts to regulated biological resources where feasible; • Recommending actions to be taken in the event of non-compliance; and • Daily and weekly reporting of compliance. Monitoring logs documenting the above shall be submitted to PWD for review and approval for the duration of Project component construction.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3e (BIO-5) –** Potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-12	Palmdale Water District; Qualified Biological Monitor; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain a Qualified Biological Monitor for monitoring during initial ground disturbance or vegetation removal activities. Review and approve monitoring logs on a weekly basis. 3. Retain monitoring logs in project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure BIO-17: Nesting Bird Surveys and Avoidance and Mitigation Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for nesting birds is identified during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. Project component construction activities shall occur outside of the bird breeding season (February 1 to August 31) to the extent practicable. If construction must commence within the bird breeding season, PWD shall retain a qualified biologist to conduct a pre-construction nesting bird survey within the disturbance footprint plus a minimum buffer of 100 feet to a maximum buffer of 500 feet depending on species, work activity, and existing ambient conditions, no more than seven days prior to initiation of ground disturbance (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation) in each work area. If the Project component is phased or construction activities stop for more than one week, a subsequent pre-construction nesting bird survey shall be conducted prior to each phase of construction, if initiated during the bird breeding season. Pre-construction nesting bird surveys shall be conducted during the time of day when birds are active and shall factor in sufficient time to perform this survey adequately and completely. A brief report of the nesting bird survey results, if applicable, shall be submitted to PWD for review and approval prior to ground disturbance and/or vegetation removal activities. If no nesting birds are observed during pre-construction surveys, no further action is required. If nests are found, an appropriate avoidance buffer of up to 300 feet for passerine (perching birds) nests and up to 500 feet for active, non-listed raptor nests shall be determined by the qualified biologist and demarcated with bright orange construction fencing or other suitable flagging. Active nests shall be monitored at a minimum of once per week until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or parental care for survival. No construction activity shall occur within this buffer until the qualified biologist confirms the breeding/nesting is completed and all the young have fledged. If Project component activities must occur within the buffer, they shall only be conducted at the discretion of the qualified biologist.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3d (BIO-4) –** Potential to 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. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Biologist; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. If construction must commence within the bird breeding season, retain a Qualified Biologist to conduct pre-construction nesting bird surveys. 3. If nests are identified, perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with avoidance buffer. 4. Retain a Qualified Biologist to monitor active nests once per week Review and approve weekly monitoring results. 5. Retain copies of survey results, monitoring results, and inspection records in project file.	1. Contracting 2. Pre-construction 3. Construction 4. Construction 5. Post-construction	1._____ 2._____ 3._____ 4._____ 5._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measures BIO-18: Invasive Plant Species Control Measures For the Palmdale Ditch Conversion project and other Project components for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted, PWD shall require the construction contractor(s) and their construction personnel to ensure equipment is free of invasive plant seeds, propagules, and any material which may contain them (e.g., soil). For purposes of this mitigation measure, invasive plant species shall include all species with a California Invasive Plant Council rating of moderate or high. Prior to entering the construction site, equipment shall be inspected to confirm it is free of mud, dirt, and debris. Tire track stations shall be installed at construction site entrances and exits. Staging areas and access routes shall avoid weed infestations, and infestations within the work area(s) shall be flagged and avoided to the maximum extent feasible. Only certified weed-free materials (e.g., fiber rolls, straw, and fill) shall be used during construction.	**Impact 3.3a (BIO-1) –** Potential to have a substantial adverse effect, 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 Service. **Impact 3.3e (BIO-5) –** Potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement if protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with invasive plant species control measures. 3. Retain copies of inspection records in project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____

Mitigation Measures BIO-19: Sensitive Natural Communities and Jurisdictional Features Avoidance, Minimization Measures Sensitive natural communities and jurisdictional features identified for avoidance within the Project component site shall be demarcated using brightly colored flagging, as necessary, and avoided to the extent feasible during Project component construction. The marked boundaries shall be maintained for the duration of Project component construction activities in each work area and shall be clearly visible to personnel on foot and by heavy equipment operators. Construction personnel shall be instructed to avoid these areas as much as feasible. All temporary flagging shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site. Compliance with this measure shall be documented in the biological monitoring reporting, if required under **Mitigation Measure BIO-16**. In addition, PWD shall require its construction contractor(s) and their personnel to implement the following measures: • Any material/spoils generated from construction shall be located away from sensitive natural communities and jurisdictional features and protected from stormwater run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate. • Materials, hand-held equipment and other non-heavy or non-vehicle equipment shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from sensitive natural communities and jurisdictional areas. • Any spillage of material shall be stopped if it can be done safely. The contaminated area shall be cleaned, and any contaminated materials shall be properly disposed of. For all spills, the Project foreman and biological monitor (if required under **Mitigation Measure BIO-16**) shall be notified. If impacts to sensitive natural communities cannot be avoided, PWD shall identify compensatory mitigation prior to disturbance of the features. Mitigation may take the form of permittee-responsible, on-site or off-site mitigation or the purchase of credits from an approved mitigation bank or through applicant-sponsored mitigation (e.g., purchase and/or dedication of land for mitigation). If required, compensatory mitigation for unavoidable impacts to sensitive vegetation communities shall be accomplished at a minimum ratio of 1:1; however, the final ratio shall be determined and approved by CDFW. If on-site or off-site restoration would occur, PWD shall retain a qualified biologist to develop a Habitat Revegetation, Restoration, and Monitoring Program and submitted for CDFW approval prior to the commencement of Project component construction (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). At a minimum, the program shall include the following: • A description of the purpose and goals of the restoration • Identification of success criteria and performance standards • Methods of site preparation, including topsoil salvage and replacement procedures • Irrigation plan and schedule	**Impact 3.3b (BIO-2) –** Potential to have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. **Impact 3.3c (BIO-3) –** Potential to have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. **Impact 3.3e (BIO-5) –** Potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Palmdale Ditch Conversion Project; potentially Pure Water Antelope Valley and Existing Wells Rehabilitation and/or Replacement based on results of Mitigation Measure BIO-1	Palmdale Water District; Qualified Biologist; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. If impacts to sensitive natural communities cannot be avoided, identify compensatory mitigation. 3. If on-site or off-site restoration would occur, retain a Qualified Biologist to develop a Habitat Revegetation, Restoration, and Monitoring Program and submit to CDFW for approval. 4. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with avoidance and minimization measures. 5. Retain copies of inspection records and compensatory mitigation (including Habitat Revegetation, Restoration, and Monitoring Program, if applicable) in project file.	1. Contracting 2. Pre-construction 3. Pre-construction 4. Construction 5. Post-construction	1._____ 2._____ 3._____ 4._____ 5._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
• Best Management Practices (BMPs) • Maintenance and monitoring program • Adaptive management strategies • Key stakeholders and responsible parties • Funding • Contingencies							

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measures BIO-20: Aquatic Resources Delineation and Compensatory Mitigation An aquatic resources delineation shall be conducted to determine the limits of potential jurisdictional aquatic resources within the vicinity of proposed Project components. The results of the aquatic resources delineation shall be used during proposed Project component design to determine if aquatic resources can be avoided. If aquatic resources can be avoided, then no compensatory measures are necessary. Avoidance of aquatic resources within Project component sites shall be implemented according to **Mitigation Measure BIO-19**. If impacts to jurisdictional waters and wetlands cannot be avoided, PWD shall identify compensatory mitigation prior to disturbance of the features. Compensatory mitigation for impacts to the jurisdictional extents of the Palmdale Ditch shall be provided at a minimum 0.5:1 ratio given the Ditch's altered hydrology as a manmade structure constructed entirely in uplands that is artificially lined in a number of areas (concrete, synthetic liner, elevated flume) and its controlled flow that fluctuates in quantity and timing from year to year depending on annual climatic conditions and available water supply in Littlerock Reservoir. Compensatory mitigation for impacts to other jurisdictional waters and wetlands shall be provided at a minimum 1:1 ratio, unless a higher ratio is required by Lahontan RWQCB, CDFW, and/or USACE. Mitigation may take the form of permittee-responsible, on-site or off-site mitigation or the purchase of credits from an approved mitigation bank. If on-site or off-site mitigation is proposed, a Compensatory Mitigation Plan shall be prepared that outlines the compensatory mitigation in coordination with the Lahontan RWQCB, CDFW, and/or USACE. If on-site mitigation is proposed, the Compensatory Mitigation Plan can be integrated with the Habitat Revegetation, Restoration, and Monitoring Program described in **Mitigation Measure BIO-19** and shall identify those portions of the site, such as relocated drainage routes, that contain suitable characteristics (e.g., hydrology) for restoration. Determination of mitigation adequacy shall be based on comparison of the restored habitat with similar, undisturbed habitat in the site vicinity. The Compensatory Mitigation Plan shall include remedial measures if performance criteria are not met. If the Compensatory Mitigation Plan is not integrated with the Habitat Revegetation, Restoration, and Monitoring Program described in **Mitigation Measure BIO-19**, the same reporting requirements shall apply for monitoring and evaluation of Compensatory Mitigation Plan implementation as detailed in **Mitigation Measure BIO-19**. If off-site mitigation is proposed, off-site land shall be preserved through a deed restriction or conservation easement and the Compensatory Mitigation Plan shall identify an approach for funding assurance for the long-term management of the conserved land.	**Impact 3.3b (BIO-2) –** Potential to have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. **Impact 3.3c (BIO-3) –** Potential to have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. **Impact 3.3f (BIO-6) –** Potential to conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	**Construction:** Pure Water Antelope Valley; Existing Well Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District; Qualified Biologist	Palmdale Water District	1. Retain a Qualified Biologist to conduct aquatic resources delineation. Review and approved report. 2. If impacts to jurisdictional waters and wetlands cannot be avoided, identify compensatory mitigation. 3. If on-site mitigation is proposed, retain a Qualified Biologist to develop and implement a Compensatory Mitigation Plan in coordination with the Lahontan Regional Water Quality Control Board, CDFW, and/or United States Army Corps of Engineers. 4. Retain copies of delineation report and Compensatory Mitigation Plan (including deed restriction/conservation easement documentation, if applicable) in project file.	1. Pre-construction 2. Pre-construction 3. Pre-construction, Construction, and Post-construction 4. Post-construction	1._____ 2._____ 3._____ 4._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measures BIO-21: Groundwater-Dependent Ecosystems If the proposed Project (particularly rehabilitation of groundwater wells 6A, 15, 18, 19, 30, and/or 33 and/or replacement wells) is in proximity to mapped groundwater-dependent ecosystems (GDEs), then representative groundwater monitoring stations shall be installed within GDEs to track groundwater levels and vegetation responses over time. Prior to implementation of the proposed Project, the GDEs that may potentially be affected by the proposed Project shall be mapped to identify the baseline conditions, including the extent of vegetation communities (e.g., via vegetation mapping on the ground and via remote sensing) and composition of vegetation (e.g., percent cover via transects on the ground) that comprises each vegetation community. Baseline data shall be collected, and long-term monitoring shall be conducted for areas of potential affect as well as representative control sites with similar conditions (to account for other variables, such as changes in climate, precipitation, etc.). Thresholds for changes in vegetation over time shall be established prior to proposed Project implementation (e.g., greater than 20 percent vegetation decline that correlates with increased pumping and decreased groundwater levels). Monitoring shall be conducted for a minimum 5-year period following any increase in groundwater pumping that is beyond the existing range of pumping currently conducted (i.e., prior to the Project) for the life of the proposed Project. If there is no impact to GDEs, then no further mitigation is necessary. If GDEs are impacted by the proposed Project, then adaptative management measures shall be implemented to reduce pumping to changes in vegetation to allow for re-establishment of vegetation communities to pre-existing conditions, which will be determined by monitoring for a minimum of an additional three years or until pre-existing conditions (i.e., both groundwater monitoring well levels and GDE vegetative cover) are obtained. Alternatively, if adaptive management measures cannot be implemented to reduce pumping and re-establish pre-existing conditions, then mitigation for permanent impacts to GDEs would include: On- and/or off-site creation, restoration, and/or enhancement of in-kind GDE habitat at a ratio no less than 1:1 for permanent impacts. Off-site creation, restoration, and/or enhancement at a ratio no less than 1:1 may include the purchase of mitigation credits at an off-site mitigation bank or in-lieu fee program.	**Impact 3.3b (BIO-2) –** Potential to have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.	**Operation:** Existing Well Rehabilitation and/or Replacement	Palmdale Water District	Palmdale Water District	1. Install groundwater monitoring stations and collect baseline data. 2. Conduct monitoring for a minimum 5-year period following any increase in groundwater pumping that is beyond the existing range of pumping currently conducted. 3. If GDEs are impacted by the Project, implement adaptive management measures or on-site/off-site mitigation along with monitoring for a minimum of an additional three years. 4. Retain copies of baseline and post-project monitoring data and documentation of adaptive management measures in project file.	1. Pre-construction 2. Post-construction 3. Post-construction 4. Post-construction	1._____ 2._____ 3._____ 4._____
Cultural Resources							
Mitigation Measure CUL-1: Cultural Resources Personnel Professional Qualifications Standards PWD shall retain an archaeologist and architectural historian meeting the minimum professional qualifications standards (PQS) set forth by the Secretary of the Interior (SOI) (codified in 36 Code of Federal Regulations [CFR] Part 61; 48 FR 44738-44739) (Qualified Archaeologist and Qualified Architectural Historian) to oversee the implementation of all mitigation related to cultural resources. All cultural resources documentation resulting from the program shall be filed with the South-Central Coastal Information Center upon document completion.	**Impact 3.4a (CUL-1) –** Potential to cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. **Impact 3.4b (CUL-2) –** Potential to cause a substantial adverse change in the significance of an	**Construction:** Pure Water Antelope Valley; Existing Well Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District; Archaeologist; Architectural Historian	Palmdale Water District	1. Retain an archaeologist and architectural historian to oversee mitigation related to cultural resources. 2. File cultural resources documentation with the South-Central Coastal Information	1. Design 2. Post-construction	1._____ 2._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
	archaeological resource as defined in CEQA Guidelines Section 15064.5.				Center upon document completion.		
Mitigation Measure CUL-2: Historic Resources Assessment Prior to Project-related construction activities involving demolition or alteration of buildings and/or structures or the construction of above ground infrastructure, the Qualified Architectural Historian shall conduct a historic resources assessment of affected properties over 45 years in age. The assessment shall include a records search at the South-Central Coastal Information Center or review of a prior record search conducted within the previous one year; a review of other pertinent archives and sources; a pedestrian field survey; recordation of all identified historic architectural resources on California Department of Parks and Recreation (DPR) 523 forms; evaluation of resources which may be eligible for listing in the California Register under Criteria 1-4 (i.e., meets the definition for historical resource in *CEQA Guidelines* subdivision 15064.5[a]), and for local listing; and preparation of a technical report documenting the methods and results of the assessment. If a historic architectural resource is found eligible, the Qualified Architectural Historian shall coordinate with the PWD to ensure the Project component is constructed in a manner consistent with the Secretary of the Interior's Standards.	**Impact 3.4a (CUL-1) –** Potential to cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.	**Construction:** Pure Water Antelope Valley; Existing Well Rehabilitation and/or Replacement	Palmdale Water District; Qualified Architectural Historian	Palmdale Water District	1. Retain a Qualified Architectural Historian to conduct a historic resources assessment of affected properties over 45 years in age. 2. If a historic architectural resource is found eligible, confirm design is consistent with the Secretary of the Interior's Standards. 3. Retain a copy of the historic resources assessment and design consistency evaluation in project file.	1. Design 2. Design 3. Post-construction	1._____ 2._____ 3._____
Mitigation Measure CUL-3: Archaeological Resources Assessment Prior to development of previously unevaluated Project components that involve ground disturbance, PWD shall retain a Qualified Archaeologist, defined as meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (codified in 36 CFR Part 61; 48 FR 44738-44739), to conduct an archaeological resources assessment including: a records search update at the South Central Coastal Information Center; a pedestrian field survey, where deemed appropriate by the Qualified Archaeologist; recordation of all identified archaeological resources on California Department of Parks and Recreation 523 forms; and preparation of a technical report documenting the methods and results of the study, and providing an assessment of the Project area's archaeological sensitivity and the potential to encounter subsurface archaeological resources and human remains. All identified archaeological resources shall be assessed for the Project's potential to result in direct and/or indirect effects to those resources and any archaeological resource that cannot be avoided shall be evaluated for its potential significance prior to PWD's approval of Project plans and publication of subsequent CEQA documents. The Qualified Archaeologist shall provide recommendations regarding archaeological monitoring to be conducted in accordance with **Mitigation Measure CUL-4,** protection of avoided resources and/or recommendations for additional work or treatment of significant resources that will be affected by the Project.	**Impact 3.4a (CUL-1) –** Potential to cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. **Impact 3.4b (CUL-2) –** Potential to cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5.	**Construction:** Pure Water Antelope Valley; Existing Well Rehabilitation and/or Replacement	Palmdale Water District; Qualified Archaeologist	Palmdale Water District	1. Retain a Qualified Archaeologist to conduct an archaeological resources assessment. 2. Implement Mitigation Measure BIO-4 in accordance with recommendations of archaeological resources assessment. 3. Retain a copy of the archaeologist resources assessment in project file.	1. Design 2. Construction 3. Post-construction	1._____ 2._____ 3._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure CUL-4: Construction Worker Cultural Resources Sensitivity Training For Project components involving ground disturbance, the Qualified Archaeologist shall implement a cultural resources sensitivity training program. The Qualified Archaeologist, or their designee, shall instruct all construction personnel of the types of cultural materials that may be encountered, cultural sensitivity issues, applicable laws protecting cultural resources, the proper treatment procedures to be enacted in the event of an inadvertent discovery of cultural materials or human remains, and confidentiality of discoveries. Tribal representatives from each of the tribes consulting on the Palmdale Ditch Conversion Project shall be allowed to attend and/or participate in the training should they elect to and shall be given a minimum of ten days' notice prior to the training. In the event that construction crews are phased, additional trainings shall be conducted for new construction personnel. The PWD, or their construction contractor(s), shall ensure construction personnel are made available for and attend the training. PWD shall retain documentation demonstrating attendance.	**Impact 3.4a (CUL-1) –** Potential to cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. **Impact 3.4b (CUL-2) –** Potential to cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5. **Impact 3.4d (TCR-1) –** Potential to result in a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074.	**Construction:** Pure Water Antelope Valley; Existing Well Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District; Qualified Archaeologist (or designee); Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain a Qualified Archaeologist to conduct Worker Cultural Resources Sensitivity Training. Review and approve training materials. 3. Retain copies of training attendance and training materials in the project file.	1. Contracting 2. Pre-construction 3. Post-construction	1._____ 2._____ 3._____

Mitigation Measure CUL-5: Archaeological Resources Monitoring Archaeological monitoring shall be required for the proposed Project components and specifically for the Palmdale Ditch Conversion Project as outlined below. • **Proposed Project Requirements.** Archaeological monitoring shall be determined by the Qualified Archaeologist based on the results of the archaeological resources assessment conducted under CUL-3 and requires the preparation of a Cultural Resources Monitoring Plan (CRMP) prior to the start of Project-related ground disturbance. The CRMP should discuss the monitoring protocols to be carried out during Project construction and should outline the appropriate measures to be followed in the event that cultural resources are encountered and outline requirements for the final monitoring report. In general, for ground- disturbing activities in geologic units/sediments of Higher Sensitivity for encountering subsurface prehistoric archaeological resources or human remains, full time archaeological monitoring shall be conducted, unless the Qualified Archaeologist has established as part of the archaeological assessment that previous disturbances have reduced the sensitivity for prehistoric archaeological resources to the extent that no or limited archaeological monitoring is warranted. No archaeological monitoring shall be required in geologic units/sediments of Lower Sensitivity for encountering subsurface prehistoric archaeological resources or human remains, or in those areas that have been previously subject to monitoring as part of the Project. If the Qualified Archaeologist determines as a result of the archaeological assessment that areas proposed for ground disturbance may be sensitive for historic-period archaeological resources, those areas shall also be subject to archaeological monitoring at a frequency determined by the Qualified Archaeologist. In all cases, the Qualified Archaeologist shall have the discretion to modify the frequency of monitoring based on soils and stratigraphy observed, the extent of past disturbances, and the type of construction methods employed. Generally, monitoring will not be required of activities employing construction methods such as tunneling and well drilling where soil profiles and spoils are not observable to monitors. The archaeological monitor(s) shall be familiar with the types of resources that could be encountered and shall work under the direct supervision of the Qualified Archaeologist. The number of archaeological monitors required to adequately observe ground-disturbing activities is dependent on the archaeological sensitivity of the area and construction scenario and shall be established by the Qualified Archaeologist. The archaeological monitor(s) shall keep daily logs detailing the types of activities and soils observed, and any discoveries. Archaeological monitor(s) shall have the authority 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 the PWD and the Native American monitor(s) pursuant to TCR-1. • **Palmdale Ditch Conversion Project Requirements.** Prior to the start of Project-related ground-disturbing activities, a qualified archaeologist shall be retained to prepare a CRMP and provide archaeological	**Impact 3.4a (CUL-1) –** Potential to cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. **Impact 3.4b (CUL-2) –** Potential to cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5. **Impact 3.4d (TCR-1) –** Potential to result in a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074.	**Construction:** Pure Water Antelope Valley; Existing Well Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District; Qualified Archaeologist; Archaeological Monitor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain a Qualified Archaeologist to prepare CRMP. Review and approve/adopt plan. 3. For the Palmdale Ditch Conversion project, distribute CRMP to tribes consulting on the project for review. Provide final CRMP to tribes consulting on the project, USBR, and USFS. 4. Retain an Archaeological Monitor to conduct archaeological monitoring. Review and approve monitoring logs on a weekly basis. 5. Retain copies of CRMP, monitoring report, and monitoring logs in project file.	1. Contracting 2. Pre-construction 3. Pre-construction 4. Construction 5. Post-construction	1._____ 2._____ 3._____ 4._____ 5._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
monitoring for the Project. The CRMP shall discuss the monitoring protocols to be carried out during Project construction and shall outline the appropriate measures to be followed in the event that cultural resources are encountered. The CRMP shall be submitted to Palmdale Water District (PWD) for dissemination to the tribes consulting on the Project. Once all parties review and agree to the plan, it shall be adopted by PWD – the plan must be adopted prior to permitting for the Project. Any and all findings shall be subject to the protocol detailed within the CRMP. A copy of the final CRMP shall be provided to PWD (and United States Bureau of Reclamation [USBR]/United States Forest Service [USFS], depending on land jurisdiction) and the tribes consulting on the Project upon completion. Archaeological monitoring shall be limited to initial ground disturbance, which is defined as construction-related earthmoving of sediments from their native place of deposition (which includes, but is not limited to, tree/shrub removal and planting, clearing/grubbing, grading, leveling, excavation, trenching, compaction, plowing, fence/gate removal and installation, drainage and irrigation removal and installation, hardscape installation [boulders, walls, etc.], and archaeological work) and does not include any secondary movement of sediment that might be required for the Project (e.g., backfilling). Archaeological monitoring shall be performed under the direction of an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (National Park Service 1983). The archaeological monitor shall have the authority to halt and redirect work should any archaeological resources be identified during monitoring. If archaeological resources are encountered during ground-disturbing activities, work within 60 feet of the find shall halt, and the find shall be evaluated for listing in the California Register of Historical Resources (CRHR)/National Register of Historic Places (NRHP). A sufficient number of archaeological monitors shall be present each workday to ensure simultaneously occurring ground-disturbing activities receive thorough levels of monitoring coverage. Archaeological monitoring may be reduced or halted at the discretion of PWD (and USBR/USFS, depending on land jurisdiction), in consultation with the qualified archaeologist and the tribes consulting on the Project, as warranted by conditions such as encountering bedrock, sediments being excavated are fill, or negative findings during the first 50 percent of ground disturbance. If monitoring is reduced to spot-checking, spot-checking shall occur when ground disturbance moves to a new location within the Project site and/or when ground disturbance extends to depths not previously reached (unless those depths are within bedrock). Furthermore, monitoring may be terminated if it is determined the soils within the Area of Potential Effects do not have the potential to contain cultural resources.							

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure CUL-6: Archaeological Resources Discoveries In the event that cultural resources are unexpectedly encountered during ground-disturbing activities, work within 60 feet of the find shall halt, an Environmentally Sensitive Area physical demarcation/barrier installed, and a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) contacted immediately to evaluate the resource. If the qualified archaeologist determines the resource to be Native American in origin, then a representative from the tribes consulting on the Project shall also be contacted to participate in the evaluation of the resource. If the qualified archaeologist and/or representative from the tribes consulting on the Project determines it to be appropriate, archaeological testing for CRHR/NRHP eligibility shall be completed. If the resource proves to be eligible for the CRHR/NRHP and significant impacts to the resource cannot be avoided via Project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, pursuant to the requirements of CEQA Guidelines Section 15126.4(b)(3)(C). Should the find be deemed Native American in origin, all plans for analysis shall be reviewed and approved by PWD (and USBR/USFS, depending on land jurisdiction) and the tribes consulting on the Project prior to implementation, and all removed material shall be temporarily curated on site. The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative(s) from the tribes consulting on the Project, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. PWD shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, pursuant to CEQA Guidelines Section 15126.4(b)(3)(C).	**Impact 3.4a (CUL-1) –** Potential to cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. **Impact 3.4b (CUL-2) –** Potential to cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5. **Impact 3.4d (TCR-1) –** Potential to result in a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074.	**Construction:** Pure Water Antelope Valley; Existing Well Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District; Qualified Archaeologist; Construction Contractor; Tribes Consulting on Project	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. If a cultural resource is encountered, conduct site inspection to verify contractor compliance with stop-work procedures. 3. If the resource is Native American in origin, contact a representative from the tribes consulting on the Project to participate in the resource evaluation. 4. Review/approve CRHR/NRHP eligibility evaluation results and data recovery plan, if determined necessary. If the resource is Native American in origin, provide plans for analysis to tribes consulting on the Project and USBR/USFS, depending on land jurisdiction. 5. Retain copies of CRHR/NRHP eligibility evaluation results, data recovery plan, and final data recovery report in project file. Submit documentation of testing to the regional repository of the California Historical Resources Information System.	1. Contracting 2. Construction 3. Construction 4. Construction 5. Post-construction	1._____ 2._____ 3._____ 4._____ 5._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure CUL-7: Curation and Disposition of Cultural Materials PWD shall work with the tribes consulting on the Project to determine the final disposition of any cultural materials removed. However, if the tribes consulting on the Project are not in agreement on the final disposition, PWD shall rebury the artifacts within the Project site in a location free from future disturbance and share the location with the tribes consulting on the Project. Items recovered from USFS lands must be curated in accordance with 36 CFR 79 and cannot be reburied. Should a collection require curation, the tribes consulting on the Project shall be given the opportunity to approve the curation facility but must still meet the standards of 36 CFR 79. All draft records/reports containing the significance and treatment findings and data recovery results shall be prepared by the qualified archaeologist and submitted to PWD (and USBR/USFS, depending on land jurisdiction) and the tribes consulting on the Project for their review and comment. A copy of the final report and all site/isolate records shall be submitted to PWD (and USBR/USFS, depending on land jurisdiction), the tribes consulting on the Project, and the South Central Coastal Information Center. Disposition of Native American human remains and associated funerary objects, or grave goods shall be determined by the landowner in consultation with the PWD and the Most Likely Descendant (MLD). The PWD shall curate all eligible historic-period archaeological material, or portions thereof at the discretion of the Qualified Archaeologist, at a repository accredited by the American Association of Museums that meets the standards outlined in 36 CFR 79.9. If no accredited repository accepts the collection, then the PWD may curate it at a non-accredited repository as long as it meets the minimum standards set forth by 36 CFR 79.9. If neither an accredited nor a non-accredited repository accepts the collection, then the PWD may offer the collection to a public, non-profit institution with a research interest in the materials, or to a local school or historical society in the area for educational purposes.	**Impact 3.4a (CUL-1) –** Potential to cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. **Impact 3.4b (CUL-2) –** Potential to cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5.	**Construction:** Pure Water Antelope Valley; Existing Well Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District; Tribes Consulting on Project	Palmdale Water District	1. Consult with tribes on final disposition of any cultural materials removed. 2. Retain a qualified archaeologist to prepare records/reports containing the significant and treatment findings and data recovery results. Review/approve records/results and submit to USBR/USFS (depending on land jurisdiction), tribes consulting on the Project, and the South Central Coastal Information Center. 3. Curate eligible historic-period archaeological material. 4. Retain copies of final disposition and curation records/reports in project file.	1. Construction 2. Post-construction 3. Construction and Post-construction 4. Post-construction	1._____ 2._____ 3._____ 4._____
Mitigation Measure CUL-8: Historic American Engineering Survey-Like Documentation Package Prior to the demolition of the Palmdale Ditch (CA-LAN-1534H), PWD shall document the structure in a Historic American Engineering Record-like documentation package. The report shall generally comply with the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation (68 Federal Register 43159), Level III. At a minimum, the Historic American Engineering Record Historical Report should include digital photographs of views of Palmdale Ditch and a short-form narrative historical report. Digital copies of the Historic American Engineering Record-like documentation package should be made available to the Los Angeles County Library Acton Agua Dulce Branch and the Palmdale City Library.	**Impact 3.4a (CUL-1) –** Potential to cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.	**Construction:** Palmdale Ditch Conversion Project	Palmdale Water District; Qualified Architectural Historian	Palmdale Water District	1. Retain a Qualified Architectural Historian to prepare the Historic American Engineering Record-like documentation package. Review and approve package. 2. Retain copies of documentation package in project file. Submit documentation package to the Los Angeles County Library Acton Agua Dulce Branch and the Palmdale City Library.	1. Pre-construction 2. Post-construction	1._____ 2._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure CUL-9: Inadvertent Discovery of Human Remains If human remains are encountered, then PWD shall halt work in the vicinity (within 100 feet) of the discovery and contact the County Coroner in accordance with Public Resources Code section 5097.98 and Health and Safety Code section 7050.5. If the County Coroner determines the remains are Native American, then the Coroner shall notify the California Native American Heritage Commission in accordance with Health and Safety Code subdivision 7050.5(c), and Public Resources Code section 5097.98. The California Native American Heritage Commission shall designate a Most Likely Descendant for the remains per Public Resources Code section 5097.98. Until the landowner has conferred with the Most Likely Descendant, the construction contractor(s) shall ensure the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.	**Impact 3.4c (CUL-3) –** Potential to disturb any human remains, including those interred outside of formal cemeteries.	**Construction:** Pure Water Antelope Valley; Existing Well Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. If human remains are discovered, conduct site inspection to verify contractor compliance with stop-work procedures. Contact County Coroner and implement treatment/protection procedures.	1. Contracting 2. Construction	1._____ 2._____

Mitigation Measure TCR-1: Native American Resources Monitoring Native American monitoring shall be implemented for the proposed Project and applied specifically for the Palmdale Ditch Conversion project as identified below. **Proposed Project Requirements.** For ground-disturbing activities in geologic units/sediments of Higher Sensitivity for encountering subsurface prehistoric archaeological resources or human remains as determined by the archaeological resources assessment conducted under CUL-3, full time Native American monitoring shall be conducted unless the Qualified Archaeologist has established as part of the archaeological assessment that previous disturbances have reduced the sensitivity to the extent that Native American monitoring is not warranted. No Native American monitoring shall be required in geologic units/sediments of Lower Sensitivity for encountering subsurface prehistoric archaeological resources or in areas that have been previously subject to monitoring as part of the program. The PWD shall retain a Native American monitor(s) to conduct the monitoring from a California Native American Tribe that is culturally and geographically affiliated (according to the NAHC) in the area within which the particular Program component is located. If more than one Tribe is interested in monitoring a Program component, the PWD shall prepare a monitoring rotation schedule. The PWD shall rotate monitors on an equal and regular basis to ensure that each Tribal group has the same opportunity to participate in the monitoring program. If a Tribe cannot participate in a given rotation assignment, they shall forfeit that rotation unless the PWD can make other arrangements to accommodate their schedule. The number of Native American monitors required to adequately observe ground-disturbing activities is dependent on the archaeological sensitivity of the area and construction scenario and shall be established by the Qualified Archaeologist. Native American monitors shall have the authority 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 the PWD and the Native American monitor(s). **Palmdale Ditch Conversion Project Requirements.** Prior to Project initiation, a Native American monitor from one of the tribes consulting on the Project shall be retained. In general, Native American monitoring shall be limited to initial ground disturbance, which is defined as construction-related earthmoving of sediments from their native place of deposition (which includes, but is not limited to, tree/shrub removal and planting, clearing/grubbing, grading, leveling, excavation, trenching, compaction, plowing, fence/gate removal and installation, drainage and irrigation removal and installation, hardscape installation [boulders, walls, etc.], and archaeological work) and does not include any secondary movement of sediment that might be required for the Project (e.g., backfilling). If more than one Consulting Tribe wishes to be present for monitoring, they shall be present on a rotating basis. The Native American monitor(s) shall have the authority to halt and redirect work should any potential cultural resources be identified during monitoring. If potential cultural resources are encountered during ground-disturbing activities, work within 60 feet of the find shall halt, and the find shall be evaluated for listing in the CRHR/NRHP. PWD shall retain at least one Tribal monitor to be present at each distinct work	**Impact 3.4d (TCR-1) –** Potential to result in a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074.	**Construction:** Pure Water Antelope Valley; Existing Well Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District; Native American monitor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Retain a Native American monitor to conduct monitoring. Review and approve monitoring logs on a weekly basis. 3. In the event of a discovery, conduct site inspection to verify contractor compliance with stop-work procedures. 4. Retain copies of monitoring logs and documentation of discoveries in project file.	1. Contracting 2. Construction 3. Construction 4. Construction	1._____ 2._____ 3._____ 4._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
area during each workday when initial ground disturbance is conducted. The tribes consulting on the Project may voluntarily provide additional Tribal monitors beyond those retained by PWD for increased monitoring coverage. Native American monitoring may be reduced or halted at the discretion of PWD (and USBR/USFS, depending on land jurisdiction), in consultation with the tribes consulting on the Project, as warranted by conditions such as encountering bedrock, sediments being excavated are fill, or negative findings during the first 50 percent of ground disturbance. If monitoring is reduced to spot-checking, spot-checking shall occur when ground disturbance moves to a new location within the Project site and/or when ground disturbance extends to depths not previously reached (unless those depths are within bedrock). Furthermore, monitoring may be terminated if it is determined the soils within the Area of Potential Effects do not have the potential to contain cultural resources.							
Energy							
Mitigation Measure ENE-1: Energy Efficient Equipment PWD shall require the use of energy efficient equipment, including pumps and lighting in new water facilities. The PWD system should be designed and operated to shift energy demands to off-peak periods whenever possible.	**Impact 3.5a (ENE-1) –** Potential to result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. **Impact 3.5b (ENE-2) –** Potential to conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	**Operation:** Pure Water Antelope Valley	Palmdale Water District, Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Confirm design includes energy efficient equipment and shifts energy demands to off-peak periods whenever possible. 3. Verify that facilities are constructed as specified.	1. Contracting 2. Design 3. Post-construction	1._____ 2._____ 3._____
Mitigation Measure ENE-2: Promotion of Recycled Water PWD shall promote and encourage the use of recycled water to offset imported water requirements.	**Impact 3.5a (ENE-1) –** Potential to result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. **Impact 3.5b (ENE-2) –** Potential to conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	**Operation:** Pure Water Antelope Valley	Palmdale Water District, Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Promote the use of recycled water to offset imported water requirements.	1. Contracting 2. Pre-construction	1._____ 2._____
Geology and Soils							
Mitigation Measure GEO-1: Geotechnical Investigation Report Implementation of Mitigation Measure GEO-1 would require a licensed geologist or engineer to perform a design-level geotechnical investigation prior to construction, which shall include evaluation of fault ruptures and soil and slope stability hazards such as strong seismic groundshaking, liquefaction,	**Impact 3.6a (GEO-1a) –** Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving a rupture of a	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation	Palmdale Water District	Palmdale Water District	1. Retain a licensed geologist or engineer to perform the geotechnical investigation.	1. Design	1._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
landslides, and soil expansion. Based on the results of the geotechnical investigations, appropriate support and protection measures shall be designed and implemented to maintain the stability of soils and slopes adjacent to work areas during and after construction. Therefore, impacts would be less than significant with mitigation incorporated.	known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42. **Impact 3.6b (GEO-1b) –** Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground-shaking. **Impact 3.6c (GEO-1c) –** Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. **Impact 3.6d (GEO-1d) –** Directly or indirectly cause potential substantial effects, including the risk of loss, injury, or death involving landslides. **Impact 3.6f (GEO-3) –** Be located on a geological 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. **Impact 3.6g (GEO-4) –** Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	and/or Replacement **Operation:** Pure Water Antelope Valley			2. Implement recommendations of geotechnical investigation into project design.	2. Design	2._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure GEO-2: Topsoil Materials Implementation would require excavated topsoil materials to be reused and maintained on site to the extent possible, and that all topsoil stockpiles are wetted, thereby minimizing topsoil loss.	**Impact 3.6e (GEO-2) –** Result in substantial soil erosion or the loss of topsoil.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of excavation and once half-way through excavation, to verify contractor compliance with topsoil measures. 3. Retain copies of inspection records in project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____
Mitigation Measure PALEO-1: Paleontological Study For all proposed Project components that involve ground disturbance below the modern alluvium, PWD shall retain a Federally qualified paleontologist to determine the necessity of conducting a study of the Project area(s) based on the potential sensitivity of the Project site for paleontological resources. The qualified paleontologist should conduct a paleontological resources inventory designed to identify potentially significant resources consisting of: a thorough review of publicly available geological maps and literature pertaining to the sedimentology and paleontology of the Project area(s); a paleontological resources records search from the Natural History Museum of Los Angeles County; and a field survey of those geological units demonstrated to have either a high or unknown potential for containing significant paleontological resources as defined by the Society for Vertebrate Paleontology (2010). The paleontologist shall provide recommendations regarding monitoring of ground disturbance for the proposed Project.	**Impact 3.6h (GEO-5) –** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District; Federally qualified paleontologist	Palmdale Water District	1. Determine necessity to conduct a paleontological study 2. If necessary, conduct study and provide recommendations 3. Retain copies of the study and recommendations to include in the construction contract.	1. Pre-construction 2. Pre-construction 3. Contracting	1._____ 2._____ 3._____
Mitigation Measure PALEO-2: Paleontological Resources Avoidance and Monitoring PWD should avoid impacts, if feasible, on areas identified as having a high potential to contain significant paleontological resources. Methods of avoidance may include, but not be limited to, Project re-route or re-design, or identification of protection measures such as capping or fencing. For those high sensitivity paleontological areas identified by the qualified paleontologist that are planned for excavation, PWD should retain paleontological monitors during construction and follow the guidelines established in the City of Palmdale General Plan. PWD shall implement the following measures during ground-disturbing construction activities in previously undisturbed sediments within the Palmdale Ditch Conversion project: • **Qualified Professional Paleontologist.** Prior to the start of proposed Project construction activities, PWD shall retain a Qualified Professional Paleontologist, as defined by the Society of Vertebrate Paleontology (SVP; 2010). The Qualified Professional Paleontologist shall draft a	**Impact 3.6h (GEO-5) –** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District; paleontological monitors and Qualified Professional Paleontologist	Palmdale Water District	1. Confirm avoidance methods are included in contract documents 2. For the Palmdale Ditch Conversion project, prepare a Paleontological Resources Mitigation and Monitoring Plan and conduct WEAP training 3. For the Palmdale Ditch Conversion project, initiate full-time monitoring during open-cut trenching and excavations within previously undisturbed geologic units assigned high paleontological sensitivity and part-time monitoring during	1. Contracting 2. Pre-construction 3. Construction	1._____ 2._____ 3._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Paleontological Resources Mitigation and Monitoring Plan, which shall direct all mitigation measures related to paleontological resources. • **Paleontological Worker Environmental Awareness Program.** Prior to the start of ground-disturbing construction activities, the Qualified Professional Paleontologist or their designee shall conduct a paleontological Worker Environmental Awareness Program (WEAP) training for all construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction personnel. • **Paleontological Monitoring.** Full-time paleontological monitoring shall be conducted during open-cut trenching and excavations within previously undisturbed geologic units assigned high paleontological sensitivity. This includes all excavations within Quaternary old alluvial fan deposits, Quaternary old alluvium, Harold Formation, Anaverde Formation, and Punchbowl Formation, and excavations reaching greater than four feet below the surface in areas mapped as active wash deposits, active alluvial valley deposits, active alluvial fan deposits, and Quaternary young alluvial valley deposits. o Initial part-time monitoring (i.e., spot-checking) shall be conducted for all ground-disturbing activities that impact geologic units assigned undetermined sensitivity. For excavations exceeding four feet in depth within areas mapped as artificial fill, the purpose of these spot checks shall be to determine whether previously undisturbed (i.e., non-fill) sediments with high paleontological sensitivity are (or will be) impacted by proposed Project excavations, in which case, full-time paleontological monitoring shall occur. For excavations within the boulder gravel of Littlerock Creek or the Ritter Formation, the goal of the spot checks shall be to determine whether these geologic units are conducive to fossil preservation, in which case full-time monitoring shall occur, or if they are not conducive to fossil preservation, in which case monitoring within these geologic units shall cease or continue as periodic spot checks. o Bulk matrix sampling may be necessary to recover microfossils (i.e., fossils too small to be easily recognized within the sediment matrix) from the Project area. If indicators of potential microfossils are encountered (e.g., fossil debris, carbonaterich paleosols, or very fine-grained sedimentary deposits), then 'test samples' or 'standard samples' shall be collected and processed in accordance with SVP (2010) standards, as directed by the Qualified Professional Paleontologist. o Paleontological monitoring shall be conducted by a paleontological monitor with experience with collection and salvage of paleontological resources and who meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor. The Qualified Professional Paleontologist may recommend monitoring be reduced in frequency or ceased entirely					open-cut trenching and excavations within previously undisturbed geologic units with unknown sensitivities. 4. Retain copies of monitoring records, including any recovery efforts, in project file.	 4. Post-construction	 4._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
based on geologic observations. Such decisions shall be subject to review and approval by PWD. ○ In the event of a fossil discovery by the paleontological monitor or construction personnel, all construction activity within 50 feet of the find shall cease, and the Qualified Professional Paleontologist shall evaluate the find. If the fossil(s) is (are) not scientifically significant, then construction activity may resume. If it is determined the fossil(s) is (are) scientifically significant, the following shall be completed: ○ **Fossil Salvage.** The paleontological monitor shall salvage (i.e., excavate and recover) the fossil to protect it from damage/destruction. Bulk matrix sampling may be necessary to recover small invertebrates or microvertebrates from within paleontologically sensitive deposits. After the fossil(s) is (are) salvaged, construction activity may resume. ○ **Fossil Preparation and Curation.** Fossils shall be identified to the lowest (i.e., most-specific) possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Professional Paleontologist. ○ **Final Paleontological Mitigation Report.** Upon completion of ground-disturbing activities (or laboratory preparation and curation of fossils, if necessary), the Qualified Professional Paleontologist shall prepare a final report describing the results of the paleontological monitoring efforts. The report shall include a summary of the field and laboratory methods employed; an overview of Project geology; and, if fossils were discovered, an analysis of the fossils, including physical description, taxonomic identification, and scientific significance. The report shall be submitted to PWD and, if fossil curation occurred, the designated scientific institution.							
Mitigation Measure MIN-1: Mineral Resources Implementation of Mitigation Measure MIN-1 would require construction of any facilities or structures to comply with City of Palmdale policies associated with the continued access to known mineral resources. Mitigation Measure MIN-1 would require development occurring in the vicinity of mining operations to adequately buffered to ensure the potential impacts to existing or future mining operations. Therefore, impacts would be less than significant with mitigation incorporated.	**Impact 3.6i (MIN-1) –** Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the State. **Impact 3.6j (MIN-2) –** 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.	**Construction:** Existing Wells Rehabilitation and/or Replacement	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections when construction occurs proximate to mining operations to ensure buffers are in place. 3. Retain copies of inspection records in project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure HYD-1: Material Harm Review Conduct a material harm review of the proposed groundwater wells and groundwater rights. The Antelope Valley Watermaster Engineer would ensure operational criteria for the wells do not result in a net deficit in aquifer volume or a lowering of the local groundwater table such that 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.	**Impact 3.6f (GEO-3) –** Be located on a geological 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.	**Operation:** Existing Wells Rehabilitation and/or Replacement	Palmdale Water District	Palmdale Water District	1. Coordinate with the Antelope Valley Water Master Engineer to conduct the material harm review. 2. Retain copies of material harm review.	1. Pre-construction 2. Post-construction	1._____ 2._____
Hazards and Hazardous Materials							
Mitigation Measure HAZ-1: Hazardous Materials Management Spill Prevention and Control Plan Before commencement of construction, PWD shall require its construction contractor(s) to prepare a Hazardous Materials Management Spill Prevention and Control Plan that includes a Project-specific contingency plan for hazardous materials and waste operations. The Plan shall be applicable to all construction activities and shall establish policies and procedures according to federal and California OSHA regulations for hazardous materials. Elements of the Plan shall include, but not be limited to the following: • A discussion of hazardous materials management, including delineation of hazardous material storage areas, access and egress routes, waterways, emergency assembly areas, and temporary hazardous waste storage areas; • Notification and documentation of procedures; and • Spill control and countermeasures, including employee spill prevention/response training.	**Impact 3.7b (HAZ-2) –** Potential to 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. **Impact 3.7c (HAZ-3) –** Potential to emit hazardous emissions or handle hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District, Construction Contractor	Palmdale Water District	1. Confirm that contract documents include preparation of a Hazardous Materials Management Spill Prevention and Control Plan (HMMSPCP). 2. Confirm contractor has prepared HMMSPCP and it is available on-site. 3. Retain a copy of the HMMSPCP in the project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____
Mitigation Measure HAZ-2: Construction and Chemical Deliveries at Schools PWD will coordinate with school officials for proposed Project areas located near schools to schedule construction when school is not in session.	**Impact 3.7c (HAZ-3) –** Potential to emit hazardous emissions or handle hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District, Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Confirm coordination with school officials to schedule construction when school is not in session. 3. Retain a copy of the coordination efforts in the project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____
Mitigation Measure HAZ-3: Environmental Site Assessment and Remediation or Well Relocation After exploratory drilling and before construction begins, a Phase 1 Environmental Site Assessment will be conducted for each proposed municipal well site to identify contaminated sites at or near each proposed well site that poses a hazard for construction or to PWD's potable water supply. In the event that a recognized environmental concern exists, additional investigation would be conducted, typically under a Phase II Environmental Site Assessment, to	**Impact 3.7d (HAZ-4) –** Potential to be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 65962.5 and, as a result, create a significant hazard to the public or the environment.	**Operation:** Existing Wells Rehabilitation and/or Replacement	Palmdale Water District, Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Confirm that a Phase 1 Environmental Site Assessment is conducted for each proposed municipal well site.	1. Contracting 2. Pre-construction	1._____ 2._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
identify the presence and extent of any contamination that would need remediation, or a Well Relocation Plan would be developed to determine if the well location could be moved to a location that is not affected by contaminant releases. Remediation, if needed, would be conducted in accordance with federal and State requirements for remediation of soil and/or groundwater contamination with oversight by the appropriate local and/or State agency, such as the County of Los Angeles, Regional Water Quality Control Board, and/or DTSC.					3. If a recognized environmental concern exists, ensure additional investigation is conducted to identify the presence and extent of contamination requiring remediation. 4. If performing remediation, ensure it is conducted in accordance with federal and State requirements for remediation of soil and/or groundwater contamination with oversight by the appropriate local and/or State agency. 5. Retain copies of all studies, reports, and remediation actions in the project file.	3. Pre-construction 4. Construction 5. Post-construction	3._____ 4. _____ 5. _____
Mitigation Measure TRA-1: Traffic Control Plan Prior to construction, PWD shall require its construction contractor(s) to prepare and implement a Traffic Control Plan, to be approved by the City and/or the County of Los Angeles, based on jurisdiction. The plan shall include traffic counts at intersections near the proposed Project facilities to determine existing traffic conditions. Based on these traffic counts, the plan shall recommend mitigation to minimize impacts to existing traffic conditions. These mitigation measures shall include but shall not be limited to: • Identification of hours of construction and hours for deliveries, potentially avoiding the A.M. and P.M. peak hours to minimize disturbance to traffic flow • Specification of both construction-related vehicle and oversize haul routes; alternative routes shall be proposed to avoid traffic disruption • Identification of limits on the length of open trench, work area delineation, traffic control, flagging, and signage requirements • Identification of all access and parking restrictions • Identification of staging locations to be used during construction • Identification of potential road or lane closures • Establishment of haul routes for construction-related vehicle traffic • Identification of alternative safe routes to maintain pedestrian bicyclist safety during construction At least three days prior to initiation of construction activities, PWD shall coordinate with emergency services (police, fire, and others) to notify these entities regarding construction schedule, proposed Project alignment and siting, and potential delays due to construction. PWD shall identify roadways and	**Impact 3.7e (HAZ-5) –** Potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. **Impact 3.7f (WILD-1) –** Potential to substantially impair an adopted emergency response plan or emergency evacuation plan.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District, Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Confirm that a Traffic Control Plan was developed in accordance with the mitigation measure, and approved by City and/or the County of Los Angeles, based on jurisdiction. 3. Confirm coordination of construction schedules has occurred with emergency services, at least three days prior to the beginning of construction activities. 4. Confirm traffic control measures identified in the Traffic Control Plan are implemented during construction 5. Retain copy of Traffic Control Plan in project file.	1. Contracting 2. Pre-construction 3. Pre-construction 4. Construction 5. Post-construction	1._____ 2._____ 3._____ 4._____ 5._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
access points for emergency services and minimize disruptions to or closures of these locations. The plan shall include provisions for traffic control measures including barricades, warning signs, cones, lights, and flag persons, to allow safe circulation of vehicle, bicycle, pedestrian, and emergency response traffic.							
Mitigation Measure WILD-1: Fire Hazard Reduction Measures During construction of Project facilities located in areas designated as moderate, high, or very high fire hazard severity zones by CAL FIRE, PWD shall require that all staging areas and welding areas intended for use of 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 construction of Project facilities, construction contractor(s) 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.	**Impact 3.7g (WILD-2) –** Potential to, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire if located in or near State responsibility areas or lands classified as very high fire hazard severity zones.	**Construction:** Existing Wells Rehabilitation and/or Replacement; Palmdale Ditch Conversion Project	Palmdale Water District, Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of construction and once half-way through construction, to verify contractor compliance with fire hazard reduction measures. 3. Retain copies of inspection records in project file.	1. Contracting 2. Construction 3. Post-construction	1._____ 2._____ 3._____
Hydrology, Groundwater, and Water Quality							
Mitigation Measure HYD-1: Material Harm Review Coordinate with the Antelope Valley Watermaster Engineer and conduct a material harm review of the proposed groundwater wells and groundwater rights. The Antelope Valley Watermaster Engineer would ensure operational criteria for the wells do not result in a net deficit in aquifer volume or a lowering of the local groundwater table such that 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. This analysis will be completed as part of a groundwater storage agreement application process through the Antelope Valley Watermaster.	**Impact 3.8b (HYD-2) –** Substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin. **Impact 3.8h (HYD-5) –** Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	**Construction:** Existing Wells Rehabilitation and/or Replacement	Palmdale Water District	Palmdale Water District	1. Coordinate with the Antelope Valley Water Master Engineer to conduct the material harm review. 2. Retain copies of material harm review.	1. Pre-construction 2. Post-construction	1._____ 2._____
Mitigation Measure HYD-2: Drainage Plan PWD shall complete drainage assessment and design in accordance with all applicable laws, regulations, and best management practices. The assessment and design shall be submitted as a drainage plan to appropriate jurisdiction to verify that drainage would not contribute to runoff that would result in flooding.	**Impact 3.8d (HYD-3b) –** Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.	**Construction:** Pure Water Antelope Valley	Palmdale Water District	Palmdale Water District	1. Conduct the drainage assessment and provide the drainage plan to the appropriate jurisdiction. 2. Retain copies of drainage plan.	1. Pre-construction 2. Post-construction	1._____ 2._____
Noise							

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
Mitigation Measure NOI-1: Noise Measures PWD shall require the construction contractor(s) to implement the following measures, as applicable, during construction of the proposed Project: • Construction activities shall meet municipal, or County code requirements related to noise. Construction activities shall be limited to between 7:00 am and 7:00 pm Monday through Saturday to avoid noise-sensitive hours of the day, when applicable. Construction activities shall be prohibited on Sunday and holidays. • Sensitive receptors of the proposed Project construction activities shall be identified and mapped. • Construction equipment noise shall be minimized by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools. • Construction contractor(s) shall locate fixed construction equipment and construction staging areas as far as possible from nearby sensitive receptors. • Where feasible, construct barriers between noise sources and noise-sensitive land uses to block sound transmission. Enclose construction equipment where practicable. • If construction were to occur near a school, the construction contractor(s) shall coordinate the most noise producing construction activities with school administration in order to limit disturbance to the campus.	**Impact 3.10a (NOI-1) –** Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards of the City of Palmdale and Los Angeles County, or applicable standards of other agencies.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of the construction and once halfway through construction, to verify contractor compliance with applicable noise measures. 3. Retain copies of inspection records in project file.	1. Contracting 2. Construction 3. Post-construction	1. _____ 2. _____ 3. _____
Mitigation Measure NOI-2: Noise Coordinator PWD shall require the construction contractor(s) to notify in writing all landowners and occupants of properties within 500 feet of the construction area of the construction schedule at least two weeks prior to groundbreaking. The construction contractor(s) shall designate a Noise Compliant Coordinator who will be responsible for responding to complaints regarding construction noise. The Noise Coordinator shall ensure that reasonable measures are implemented to correct any problems. A contact telephone number for the Noise Coordinator shall be conspicuously posted at the construction site and included in the written notification of the construction schedule sent to surrounding properties.	**Impact 3.10a (NOI-1) –** Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards of the City of Palmdale and Los Angeles County, or applicable standards of other agencies.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Confirm notices of construction were sent. 3. Perform site inspection after receipt of a noise complaint to verify implementation of noise reduction measures. 4. Retain copies of inspection records in the project file.	1. Contracting 2. Pre-Construction 3. Construction 4. Post-construction	1. _____ 2. _____ 3. _____ 4. _____
Mitigation Measure NOI-3: Vibration Measures PWD shall require the construction contractor(s) to implement the following measures, as applicable, during construction of proposed facilities: • Sensitive receptors shall be identified and mapped. • Limit construction activities that cause excessive groundborne vibrations to at least 43 feet from sensitive receptors and 15 feet from any structures.	**Impact 3.10b (NOI-2) –** Generate excessive groundborne vibration in the project vicinity above levels existing without the Project.	**Construction:** Pure Water Antelope Valley	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of the construction and once halfway through construction, to verify contractor	1. Contracting 2. Construction	1. _____ 2. _____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
					compliance with vibration reduction measures. 3. Retain copies of inspection records in project file.	 3. Post-construction	 3. _____
Mitigation Measure NOI-4: Alternative Construction Equipment PWD shall require its construction contractor(s) to avoid utilizing vibratory rollers within 190 feet of residences. If paving work is necessary within 190 feet of residences, alternative offroad construction equipment, such as equipment limited to 100 horsepower or less or a static/pneumatic roller, shall be utilized instead.	**Impact 3.10b (NOI-2) –** Generate excessive groundborne vibration in the project vicinity above levels existing without the Project.	**Construction:** Palmdale Ditch Conversion Project	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Perform site inspections, once at the start of the construction and once halfway through construction, to verify contractor compliance with vibration reduction measures. 3. Retain copies of inspection records in project file.	1. Contracting 2. Construction 3. Post-construction	1. _____ 2. _____ 3. _____
Recreation							
Mitigation Measure REC-1: Coordination for Bikeways For Project facilities that would include pipelines or other new facilities within designated bikeways, PWD shall coordinate with the applicable jurisdiction to determine whether circulation and detour plans are required to minimize impacts to access local bikeways. Circulation and detour plans may include the use of signage and flagging of cyclists through and/or around the construction zone.	**Impact 3.11a (REC-1) –** Potential to 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.	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Confirm coordination with applicable jurisdiction to determine whether circulation and detour plans are required. 3. If necessary, ensure implementation of circulation and detour plans. 4. Retain copies of circulation and detour plans in project file.	1. Contracting 2. Pre-construction 3. Pre-construction 4. Post-construction	1._____ 2._____ 3._____ 4._____
Transportation							
Mitigation Measure TRA-1: Traffic Control Plan Prior to construction, PWD shall require its construction contractor(s) to prepare and implement a Traffic Control Plan, to be approved by the City and/or the County of Los Angeles, based on jurisdiction. The plan shall include traffic counts at intersections near the proposed Project facilities to determine existing traffic conditions. Based on these traffic counts, the plan shall recommend mitigation to minimize impacts to existing traffic conditions. These mitigation measures shall include but shall not be limited to:	**Impact 3.7e (HAZ-5) –** Potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. **Impact 3.7f (WILD-1) –** Potential to substantially impair an adopted	**Construction:** Pure Water Antelope Valley; Existing Wells Rehabilitation and/or Replacement	Palmdale Water District; Construction Contractor	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Confirm that a Traffic Control Plan was developed in accordance with the mitigation measure, and approved by City	1. Contracting 2. Pre-construction	1._____ 2._____

Mitigation Measure	Impact Statement	Applicable Projects	Party Responsible for Implementation and Reporting	Review and Approval by:	Monitoring and Reporting Actions	Implementation Schedule	Verification: Status/ Date Completed/ Initials
• Identification of hours of construction and hours for deliveries, potentially avoiding the A.M. and P.M. peak hours to minimize disturbance to traffic flow • Specification of both construction-related vehicle and oversize haul routes; alternative routes shall be proposed to avoid traffic disruption • Identification of limits on the length of open trench, work area delineation, traffic control, flagging, and signage requirements • Identification of all access and parking restrictions • Identification of staging locations to be used during construction • Identification of potential road or lane closures • Establishment of haul routes for construction-related vehicle traffic • Identification of alternative safe routes to maintain pedestrian bicyclist safety during construction At least three days prior to initiation of construction activities, PWD shall coordinate with emergency services (police, fire, and others) to notify these entities regarding construction schedule, proposed Project alignment and siting, and potential delays due to construction. PWD shall identify roadways and access points for emergency services and minimize disruptions to or closures of these locations. The plan shall include provisions for traffic control measures including barricades, warning signs, cones, lights, and flag persons, to allow safe circulation of vehicle, bicycle, pedestrian, and emergency response traffic.	emergency response plan or emergency evacuation plan. **Impact 3.12a (TRA-1) –** Potential to conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. **Impact 3.12c (TRA-3) –** Potential to substantially increase hazards due to a geometric design feature. **Impact 3.12d (TRA-4) –** Potential to result in inadequate emergency access.	**Operation:** Existing Wells Rehabilitation and/or Replacement			and/or the County of Los Angeles, based on jurisdiction. 3. Confirm coordination of construction schedules has occurred with emergency services, at least three days prior to the beginning of construction activities. 4. Confirm traffic control measures identified in the Traffic Control Plan are implemented during construction 5. Retain copy of Traffic Control Plan in project file.	 3. Pre-construction 4. Construction 5. Post-construction	 3._____ 4._____ 5._____
Utilities							
Mitigation Measure UTL-1: Site Selection Process In the event the Antelope Valley Public Landfill does not have remaining capacity or has ceased operations, PWD would conduct a thorough site selection process to identify an appropriate location to dispose of solid waste generated by the Project.	**Impact 3.13d (UTL-4) –** Potential to generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	**Operation:** Pure Water Antelope Valley	Palmdale Water District	Palmdale Water District	1. Confirm that contract documents include mitigation measure. 2. Conduct a thorough site selection process to identify an appropriate location to dispose of solid waste. 3. Retain copy of site selection process in project folder.	1. Contracting 2. Pre-construction 3. Post-construction	1._____ 2._____ 3._____

Exhibit C:
Final Environmental Impact Report

STRATEGIC WATER RESOURCES PLAN UPDATE
FINAL ENVIRONMENTAL IMPACT REPORT

December 2024

Prepared by:

Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550

With Assistance From:

Woodard & Curran

rincon

SCH#: 2023080290

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ACRONYMS AND ABBREVIATIONS

AFY	Acre-feet per year
AVAQMD	Antelope Valley Air Quality Management District
AWTP	Advanced Water Treatment Plant
CAA	Clean Air Act
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Commission
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CRHR	California Register of Historical Resources
CRMP	Cultural Resources Monitoring Plan
DDW	Division of Drinking Water
DEIR	Draft Environmental Impact Report
ESA	Endangered Species Act
GDE	groundwater dependent ecosystem
IW	Industrial Wastewater
LACSD	Los Angeles County Sanitation Districts
LSM	Less than significant with mitigation
LTS	Less than significant
MBMI	Morongo Band of Mission Indians
MGD	million gallons per day
MLD	Most Likely Descendant
MM/COA	Mitigation Measures/Conditions of Approval
MMRP	Mitigation Monitoring and Reporting Program
NAHC	Native American Heritage Commission
NOA	Notice of Availability
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
EIR	Program Environmental Impact Report
PRC	Public Resources Code
PRWA	Palmdale Recycled Water Agency

PWD	Palmdale Water District
RWQCB	Regional Water Quality Control Board
SCAG	Southern California Association of Governments
SOI	United States Secretary of the Interior Standards
SVP	Society of Vertebrate Paleontology
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SWRP	Strategic Water Resources Plan
USACE	United States Army Corps of Engineers
USBR	United States Bureau of Reclamation
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program
WMA	Water Management Amendment

CHAPTER 1. INTRODUCTION

1.1 PURPOSE

This Final Environmental Impact Report (Final EIR) document has been prepared in accordance with California Environmental Quality Act (CEQA) as amended (Public Resources Code (PRC) section (§) 21000 et seq.) and the CEQA Guidelines (California Code of Regulations (CCR) §15000 et seq.). Before approving a project, a lead agency must prepare a Final EIR (CCR §15089(a)). According to the CEQA Guidelines (CCR §15132) the Final EIR shall consist of:

a) *The Draft Environmental Impact Report or a revision of the DEIR;*
b) *Comments and recommendations received on the DEIR either verbatim or in summary;*
c) *A list of persons, organizations, and public agencies comments on the DEIR;*
d) *The responses of the lead agency to significant environmental points raised in the review and consultation process; and*
e) *Any other information added by the lead agency.*

The Final EIR is the document that decision-makers in the lead and responsible agencies consider before approving or denying a project. Completion and certification of the Final EIR precede the lead agency's determination of whether to approve or carry out the project (CCR §15089(a), §15090(b)), and its adoption of findings (required by PRC §21081 and CCR §15091 and §15093).

As the lead agency for the Strategic Water Resources Plan (SWRP) Update (proposed Project) the Palmdale Water District (PWD or the District) has prepared this Final EIR in accordance with the CEQA Guidelines. This Final EIR provides documentation of the comments received on the DEIR (State Clearinghouse #2023080290), a response to these comments, necessary text revisions to the DEIR, additional information, and the Mitigation Monitoring and Reporting Program (MMRP). The publicly circulated DEIR described the environmental consequences associated with the implementation of the proposed Project and recommends mitigation measures to reduce potentially significant impacts.

1.2 ENVIRONMENTAL REVIEW PROCESS

According to the CEQA Guidelines, lead agencies are required to consult with public agencies having jurisdiction over a proposed project and to provide the agencies and the public with an opportunity to comment on the DEIR. Those processes are described below.

1.2.1 NOTICE OF PREPARATION PROCESS

On August 15, 2023 PWD circulated a Notice of Preparation (NOP) which included a description of the project, location of the project, and probable environmental effects of the project in accordance with CEQA Guidelines section 15082. The NOP was made available in print and electronic form, and PWD accepted comments on the NOP for a 30-day period, closing on

September 14, 2023, and a public scoping meeting was held on September 7, 2023. Comments received on the NOP were considered during the preparation of the Draft EIR and are contained in Appendix A of the Draft EIR.

1.2.2 Draft Environmental Impact Report Process

The Draft EIR was made available for public review on September 27, 2024 and was distributed to local and State of California (State) responsible and trustee agencies. The CEQA-mandated 45-day review and comment period for the public and agencies ended on November 11, 2024. Pursuant to §15087 of the CEQA Guidelines, a public Notice of Availability (NOA) of the Draft EIR was given. CEQA requires under §15105, notice be mailed to the last known name and address of all organizations and individuals who have previously requested such notice in writing, and also by at least one of the following procedures:

1. Publication at least one time by the public agency in a newspaper of general circulation in the area affected by the Project. If more than one area is affected, the notice shall be published in the newspaper of largest circulation from among the newspapers of general circulation in those areas.
2. Posting of notice by the public agency on and off the site in the area where the Project is to be located.
3. Direct mailing to the owners and occupants of property contiguous to the parcels on which the Project is located. Owners of such property shall be identified as shown on the latest equalized assessment roll.

In accordance with §15087 of the CEQA Guidelines, on September 27, 2024, PWD published the NOA in the Antelope Valley Press newspapers. Copies of the NOA and Draft EIR were available for public review electronically on PWD's website (https://www.palmdalewater.org/our-customers/projects/capital-projects/strategic-water-resources-plan/) starting September 27, 2024. The Draft EIR was available as a hard copy during regular business hours at the following locations:

- Palmdale Water District Headquarters, 2029 E Avenue Q, Palmdale CA 93550
- Palmdale City Library, 700 E Palmdale Boulevard, Palmdale CA 93550

PWD provided the following ways for the public to stay informed and provide feedback on the Project beyond the requirements of §15087 of the CEQA Guidelines:

- Maintained a website (https://www.palmdalewater.org/our-customers/projects/capital-projects/strategic-water-resources-plan/) with the proposed Project background, information, updates, and documents.

1.2.3 FINAL ENVIRONMENTAL IMPACT REPORT

Consistent with CEQA Guidelines (CCR §15132) the Final EIR includes: (1) necessary revisions to the Draft EIR; (2) comments received on the DEIR; (3) responses of the District to significant environmental points raised in the review process and to comments on environmental issues; and (4) information added by the District to clarify and amplify information contained in the Draft EIR.

The Final EIR includes the comments received regarding the Draft EIR, as well as the PWD's responses to comments and incorporates the Draft EIR by reference. PWD evaluated the comments received on environmental issues and prepared written responses to those comments. For those environmental issues raised in numerous comments, the PWD prepared Master Responses to address the environmental issue. In addition, PWD provided a written response for each CEQA-related comment received during the public review period.

The Final EIR also includes revisions to the Draft EIR and new information added to the Draft EIR after the public review period. These changes and additional information do not require recirculation of the Draft EIR because they do not constitute "significant new information" (CCR §15088.5). The new information does not show any new significant impacts or substantial increases in the severity of the impacts analyzed in the Draft EIR. The changes made to the Draft EIR and the new information added to the Final EIR merely clarify or amplify information contained in the Draft EIR or make insignificant modifications.

1.3 DOCUMENT ORGANIZATION

This Final EIR document consists of the following chapters:

- **Chapter 1: Introduction**. This chapter discusses the purpose and organization of this Final EIR and summarizes the environmental review process for the Project.
- **Chapter 2**: **Response to Comments**. This chapter contains lists of agencies, tribes, organizations, and individuals who submitted written comments during the public review period; reproductions of all comment letters received on the Draft EIR; and a written response for each CEQA-related comment received during the public review period.
- **Chapter 3**: **Draft EIR Text Revisions**. This chapter includes revisions to the Draft EIR that are necessary in light of the comments received and responses provided, or necessary to amplify or clarify material in the Draft EIR, are contained in this chapter. Double underline text represents language that has been added to the Draft EIR; text with strikeout has been deleted from the Draft EIR.
- **Chapter 4**: **Final EIR Document Preparers**. This chapter lists Final EIR document contributions, qualifications, and quality control procedures.
- **Chapter 5**: **References**. This chapter includes new references used for preparation of the Final EIR.
- **Appendix A**: **Mitigation Monitoring and Reporting Program**

CHAPTER 2. RESPONSE TO COMMENTS

This chapter of the Final EIR includes a copy of all comment letters that were submitted to the District during the Draft EIR public review period and responses to those comments prepared in accordance with CEQA Guidelines Section 15088.

Table 1.1-1 lists the entities that submitted comments, and each comment letter has been coded with a number to facilitate identification and tracking. Individual comments and the responses to them were assigned corresponding numbers (e.g., 1-1, 1-2, 1-3). To aid readers and commenters, electronically bracketed comment letters have been reproduced in this document, with the corresponding responses provided immediately following each comment letter.

Table 1.1-1 Comments Received on the Draft EIR

Comment Letter Designation	Commenter	Date
1	Los Angeles County Sanitation District*	9/15/2023
2	Los Angeles County Sanitation District	11/06/2024
3	Department of Water Resources	10/04/2024
4	Antelope Valley Air Quality Management District	10/07/2024
5	Yuma Quechan Indian Tribe	10/24/2024
6	California Department of Fish and Wildlife	11/8/2024
7	State Water Resources Control Board	11/12/2024
8	Department of Transportation	11/8/2024
9	City of Lancaster	11/12/2024
10	Morongo Band of Mission Indians	11/11/2024

*Commenter resubmitted comment letter from the NOP.

Comment Letter 1

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

Robert C. Ferrante
Chief Engineer and General Manager
1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
(562) 699-7411 • www.lacsd.org

September 15, 2023

Ref. DOC 6998694

VIA EMAIL aly@palmdalewater.org

Mr. Adam C. Ly, Assistant General Manager
Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550

Dear Mr. Ly:

Comments on the Notice of Preparation of the Draft Environmental Impact Report for the 2023 Strategic Water Resources Plan Update

The Los Angeles County Sanitation Districts (Sanitation Districts) received a Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the subject plan update on August 14, 2023. Most of Palmdale Water District's service area is located within the jurisdictional boundaries of County Sanitation District No. 20 (District No. 20). We offer the following comments:

For the Proposed Groundwater Injection Wells and Conveyance Pipelines

1. District No. 20 owns and maintains sewerage facilities within the project area that may be affected by the proposed project. Approval to construct improvements within a Sanitation Districts' sewer easement and/or over or near a Sanitation Districts' sewer is required before construction may begin. To obtain copies of as-built drawings of District No. 20's facilities within the project limits, please contact the Sanitation Districts' Engineering Counter at engineeringcounter@lacsd.org or (562) 908-4288, extension 1205. If any of the proposed improvements for this project will be located over or near a Sanitation Districts' sewer easement, "Buildover" review and approval by the Sanitation Districts will be required. For a copy of the Sanitation Districts' Buildover procedures and requirements, go to www.lacsd.org, under Services, then Wastewater Program and Permits and select Buildover Procedures. For more specific information regarding the buildover procedure, please contact Mr. Ryan Honda at (562) 908-4288, extension 2766. 1-1

2. The Sanitation Districts cannot issue a detailed response to or permit construction of the proposed project until detailed project plans and specification that incorporate District No. 20's facilities are submitted for our review. When project plans that incorporate our facilities have been prepared, please submit copies to the Engineering Counter for our review and comment. 1-2

For the Proposed Pure Water Antelope Valley Advanced Water Treatment Plant

3. The Sanitation Districts, with a mission to protect public health and the environment and, in doing so, convert waste into resources such as recycled water, energy, and recycled materials, is in support of the proposed Advanced Water Treatment Plant (AWTP). The Sanitation Districts has a long history of providing affordable, high-quality recycled water to public and private water suppliers to help meet the water supply needs for more than a hundred thousand people within District No. 20's service area. Wastewater generated by the proposed project will be treated at the Palmdale Water Reclamation Plant, 1-3

DOC 7005777.D2099 *A Century of Service*

which has a capacity to treat 12 million gallons per day (MGD) of wastewater and currently processes an average recycled flow of 8.2 MGD.

4. The proposed AWTP may require an Industrial Wastewater (IW) Discharge permit from the Sanitation Districts in order to discharge brine or any other wastewater into District No. 20's sewerage system. Please contact the Sanitation Districts' IW Section at (562) 908-4288, extension 2900, to determine if an IW Permit is necessary. If this permit is necessary, Palmdale Water District will be required to obtain the IW Permit before beginning project construction. Additional information for which can be found on our website at Industrial Wastewater Discharge Permits. 1-4

5. The proposed AWTP may require a Trunk Sewer Connection Permit from the Sanitation Districts if the proposed brine/wastewater discharge pipeline from the AWTP will connect directly to a District No. 20's trunk sewer. The Sanitation Districts will determine if such a permit is necessary during review of the detailed project plans that Palmdale Water District will prepare and submit to the Sanitation Districts' Engineering Counter for review, as indicated in Comment #1 above. 1-5

6. In order to estimate the volume of wastewater the project will generate, go to www.lacsd.org, under Services, then Wastewater Program and Permits and select Will Serve Program, and then click on the Table 1, Loadings for Each Class of Land Use link for a copy of the Sanitation Districts' average wastewater generation factors. 1-6

General Comments

7. Please revise all references in the NOP from "Palmdale Water Reclamation Facility" to "Palmdale Water Reclamation Plant". Additionally, at the bottom of page 2, where the first reference is made to this facility, please revise the language as follows "…within the vicinity of the Palmdale Water Reclamation Plant (WRP) (see Figure 3), which is owned and operated by County Sanitation District No. 20." 1-7

8. Please revise all references in Exhibits 2 and 3 from "Palmdale WRF" to "Palmdale WRP". 1-8

9. The Sanitation Districts are empowered by the California Health and Safety Code to charge a fee to connect facilities (directly or indirectly) to the Sanitation Districts' Sewerage System or to increase the strength or quantity of wastewater discharged from connected facilities. This connection fee is used by the Sanitation Districts for its capital facilities. Payment of a connection fee may be required before this project is permitted to discharge to the Sanitation Districts' Sewerage System. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, under Services, then Wastewater (Sewage) and select Rates & Fees. In determining the impact to the Sewerage System and applicable connection fees, the Sanitation Districts will determine the user category (e.g. Condominium, Single Family Home, etc.) that best represents the actual or anticipated use of the parcel(s) or facilities on the parcel(s) in the development. For more specific information regarding the connection fee application procedure and fees, please contact the Sanitation Districts' Wastewater Fee Public Counter at (562) 908-4288, extension 2727. If an Industrial Wastewater Discharge Permit is required, connection fee charges will be determined by the Industrial Waste Section. 1-9 1-10

10. In order for the Sanitation Districts to conform to the requirements of the Federal Clean Air Act (CAA), the capacities of the Sanitation Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CAA. All expansions of Sanitation Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Sanitation Districts' treatment 1-11

facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service but is to advise Palmdale Water District that District No. 20 intends to provide this service up to the levels that are legally permitted and to inform the Palmdale Water District of the currently existing capacity and any proposed expansion of District No. 20's facilities.

If you have any questions, please contact Ms. Mandy Huffman at (562) 908-4288, extension 2743, or mandyhuffman@lacsd.org.

Very truly yours,

Ziad El Jack
Supervising Engineer
Facilities Planning Department

MNH:mnh

cc: Engineering Counter
R. Honda
P. Palencia
R. Paracuelles

DOC 7005777.D2099

A Century of Service

RESPONSE TO COMMENT LETTER 1

Los Angeles County Sanitation Districts, Ziad El Jack, Supervising Engineer

Response to Comment 1-1:

The Draft EIR text in Table 2-7: Regulatory Requirements and Authorizations within Chapter 2 (Project Description) has been revised to reflect that an easement is needed prior to construction for Los Angeles County Sanitation District (LACSD) No. 20 owned and maintained sewerage facilities within the proposed Project area that may be affected by the proposed Project. The LACSD approvals shown in Table 2-7: Regulatory Requirements and Authorizations and Approvals were updated with double underlined text as follows to reflect this required easement.

Agency	Type of Approval	Water Supply Element
Los Angeles County Sanitation District	Industrial Wastewater (IW) Discharge permit; Trunk Sewer Connection permit to discharge brine or other wastewater into sewerage system	Recycled Water – Pure Water Antelope Valley
Los Angeles County Sanitation District	Submittal of detailed project plans and specifications	Groundwater - injection wells and conveyance pipelines Recycled Water – Pure Water Antelope Valley
Los Angeles County Sanitation District	Easement	Recycled Water – Pure Water Antelope Valley

Response to Comment 1-2:

See Table 2-7: Regulatory Requirements and Authorizations and Approvals in Chapter 2 Project Description of the Draft EIR which lists the authorizations and approvals required for the Project. Groundwater Injection Wells and Conveyance Pipelines will incorporate LACSD District No. 20's facilities on plans and specifications submitted to the LACSD No. 20's Engineering Counter for review and comment as stated in the Draft EIR. At this time, plans for the Pure Water Antelope Valley injection wells and pipelines are still conceptual. PWD will develop plans that incorporate LACSD No. 20's facilities and will submit it to the Engineering Counter as the plans are developed.

Response to Comment 1-3:

Comment noted and PWD would like to thank LACSD for their support in this project.

Response to Comment 1-4:

The Draft EIR states that an Industrial Wastewater Discharge Permit is required in Table 2-7: Regulator Requirements and Authorizations and Approvals. PWD would obtain this permit (if there are discharges requiring IWD permit) prior to construction.

Response to Comment 1-5:

The Draft EIR states that a Trunk Sewer Connection Discharge permit is required in Table 2-7: Regulatory Requirements and Authorizations and Approvals. PWD would obtain this permit prior to construction.

Response to Comment 1-6:

As the Pure Water Antelope Valley Advanced Water Treatment Project progresses PWD will work with LACSD to obtain an Industrial Wastewater Discharge Permit and other approvals as stated in Table 2-7: Regulator Requirements and Authorizations and Approvals of Chapter 2 Project Description in the Draft EIR. PWD appreciates the direction for calculating wastewater volumes necessary to complete design and approval of the Pure Water Antelope Valley Advanced Water Treatment project.

Response to Comment 1-7:

All references of "Palmdale Water Reclamation Facility" in the Notice of Preparation were revised to "Palmdale Water Reclamation Plant" throughout the Draft EIR.

Response to Comment 1-8:

Exhibits 2 and 3 from the NOP were revised for the Draft EIR. All references to "Palmdale WRF" were changed to "Palmdale WRP" throughout the Draft EIR.

Response to Comment 1-9:

Comment noted. PWD appreciates the information necessary to complete the connection process. Prior to construction of the proposed Project, PWD will ensure that they are in compliance with all applicable requirements to discharge to LACSD's Sewerage System and pay the connection fee, if applicable.

Response to Comment 1-10:

Comment Noted. PWD appreciates the information. If an Industrial Wastewater Discharge Permit is required, connection fee changes will be determined by the Industrial Waste section. An Industrial Wastewater Discharge Permit was identified as a likely requirement of the proposed Project in the Draft EIR Table 2-7: Regulatory Requirements and Authorizations and Approvals as an anticipated permit for the proposed Project. PWD will be in compliance with all requirements pertaining to the connection fees and will pay fees, as applicable.

Response to Comment 1-11:

The Draft EIR found the proposed Project would not have a direct growth inducement effect as it does not propose development of new housing that would attract additional population to the area (see Section 5.1.6 Growth Inducement Potential). PWD appreciates that LACSD No. 20 will provide service up to levels that are legally permitted and will inform PWD of the current capacity and of any proposed expansion of LACSD No. 20's facilities.

Comment Letter 2

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

Robert C. Ferrante
Chief Engineer and General Manager
1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
(562) 699-7411 • www.lacsd.org

November 6, 2024

Ref. DOC 7332579

VIA EMAIL srogers@palmdalewater.org

Mr. Scott Rogers, Engineering Manager
Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550

Dear Mr. Rogers:

Second Response to 2023 Strategic Water Resources Plan Update

The Los Angeles County Sanitation Districts (Districts) received a Notice of Availability (NOA) of a Draft Environmental Impact Report (DEIR) for the subject project located in the City of Palmdale on September 30, 2024. Previous comments submitted by the Districts in correspondence dated September 15, 2023 (copy enclosed) still apply to the subject project with the following updated information:

1. **Section 2.5.2 Recycled Water**, *page 2-12*: The Palmdale Water Reclamation Plant (WRP) currently provides tertiary treatment for approximately 10,200 acre-feet per year (AFY) of wastewater generated in and around the City and produces an average of 9,000 AFY of Title 22 recycled water. The City is a recycled water customer through Palmdale Recycled Water Authority (PRWA) for landscape irrigation and construction water. The remaining portion of Palmdale WRP recycled water is beneficially used for agricultural irrigation. 2-1

2. **Section PFSI-3.5 Sanitation District Collaboration and Water Purveyors**, *page 5-4*: Work with the Sanitation District and Water Purveyors to identify users for recycled water and support plans for its treatment and distribution. 2-2

3. All other information concerning Districts' facilities and sewerage service contained in the document is current. 2-3

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2742, or phorsley@lacsd.org.

Very truly yours,

Patricia Horsley

Patricia Horsley
Environmental Planner
Facilities Planning Department

PLH:plh

Enclosure

DOC 7360414.D2099

RESPONSE TO COMMENT LETTER 2

Los Angeles County Sanitation Districts, Patricia Horsely, Environmental Planner

Response to Comment 2-1:

The text in the Draft EIR on page 2-12 under Section 2.5-2 Recycled Water has been revised to clarify details associated with the Palmdale Water Reclamation Plant, and reads as follows:

> The Palmdale Water Reclamation Plant currently provides tertiary treatment for approximately ~~12,000~~ 10,200 acre-feet per year (AFY) of wastewater generated in and around the City and produces an average of ~~10,700~~ 9,000 AFY of Title 22 recycled water. A contract with LACSD entitles PWD to up to 5,325 AFY of recycled water. There is also an agreement with the LACSD for 2,000 AFY of recycled water to provide to customers throughout the City's service area, which has since been transferred to Palmdale Recycled Water Agency (PRWA).
>
> The City is a recycled water customer through PRWA for landscape irrigation and construction water. The remaining portion of Palmdale Water Reclamation Plant recycled water is beneficially used for agricultural irrigation.

Response to Comment 2-2:

The comment is noted, however, Public Facilities, Services, and Infrastructure -3.5 Sanitation District Collaboration and Water Purveyors was directly derived from the 2022 City of Palmdale General Plan, which outlines the City's comprehensive planning framework and policies, as a result this statement cannot be revised.

Response to Comment 2-3:

Comment noted. PWD appreciates the input on the LACSD facilities and sewerage service.

Comment Letter 3

From: Zamanian, Arian@DWR <Arian.Zamanian@water.ca.gov>
Sent: Friday, October 4, 2024 10:40 AM
To: Scott Rogers <srogers@palmdalewater.org>
Cc: Luzuriaga, Patrick@DWR <Patrick.Luzuriaga@water.ca.gov>; Ely, Terri@DWR <Terri.Ely@water.ca.gov>
Subject: Strategic Water Resources Plan Draft EIR

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Hi Scott,

I was looking over the SWRP EIR that PWD submitted and wanted to offer some insight on the Turnback Pool Program since it's mentioned as a source of PWD's imported SWP supplies... As of February 2021, with execution of the Water Management Amendment (WMA) to most of our SWP Contractors' Water Supply Contracts (includes PWD), the Turnback Pool Program no longer exists. Instead, the WMA gives more flexibility by allowing those SWP contractors to buy/sell their Table A, Carryover, previously banked Table A water, and Article 21 water from/to each other. Prior to the WMA, such sales were not allowed. For accuracy purposes, it would be good to include this flexibility into the EIR as a means of acquiring additionally SWP water. 3-1

Thanks,
Arian Zamanian, P.E.
Senior Engineer, Water Resources
SWP Water Supply Contracts Unit
DWR-O&M
1516 9th Street, 2nd floor
Sacramento, California 95814
Office: 916-902-9888

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RESPONSE TO COMMENT LETTER 3

Department of Water Resources, Arian Zamanian, Senior Engineer

Response to Comment 3-1:

The Draft EIR incorporates language directly from the SWRP regarding the Turnback Pool Program as a source of water. Draft SWRP was prepared and released overlapping the Water Management Agreement of February 2021. As the comment notes, the Water Management Agreement gives more flexibility to State Water Project (SWP) contractors to buy or sell their Table A, Carryover, previously banked Table A water, and Article 21 water from and to SWP contractors. Prior to the Water Management Agreement, such sales were not allowed. This does change does not affect the adequacy of the Draft EIR analysis related to State Water Project water as it relates to the Project. However, for accuracy purposes, the Draft EIR text has been revised to incorporate this flexibility and disclose the Water Management Agreement replaces the Turnback Pool Program as a means of acquiring additional SWP water.

Text in the Draft EIR in the Executive Summary on page ES-2 has been revised accordingly to provide this clarification, and reads as follows:

> In addition to the Table A amount, PWD supplements Table A water with carryover water, Article 21 water, and ~~turnback pool water~~ Water Management Amendment.

Text in the Draft EIR in Chapter 2 Project Description on page 2-10 has been revised accordingly to provide clarification, and reads as follows:

> These include carryover water, "Article 21" water, and ~~turnback pool water~~ Water Management Amendment which are defined as:
>
> - **Carryover water** is Table A water that is allocated to a contractor but not used by the end of the SWP contract year. If space is available, contractors may store up to 5,000 acre-feet (AF) of Table A water in the part of the San Luis Reservoir owned by the SWP for delivery the following year. However, if the San Luis Reservoir must spill that season, the contractor's carryover water will be lost. PWD has stored an average of 2,442 AFY of this water from 2011 and 2021.
> - **Article 21 water** is additional water that PWD may receive temporarily, in addition to its approved Table A water. This water is only offered occasionally, usually in wet hydrologic years, when there is more water in the Delta than the SWP contractors are entitled to. Historically, PWD has not received much of its water. Between 2011 and 2021, PWD has received a total of 335 AFY of Article 21 water.
> - ~~**Turnback pools** are a mechanism for contractors with extra Table A water to sell their water back to other contractors. Since 2011, PWD has only brought about 26 AF of water from turnback pools to supplement its water supplies.~~ **Water Management Amendment** allows SWP contractors to buy or sell their Table A,

Carryover water, previously banked Table A water, and Article 21 water with each other.

Comment Letter 4

Antelope Valley Air Quality Management District
2551 West Avenue H Lancaster, CA 93536
661-723-8070
www.avaqmd.ca.gov
Barbara Lods, Executive Director

In reply, please refer to AV1024/136

October 7, 2024

Kim Clyma
Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550

Project: Notice of Availability Draft Environmental Impact Report for the 2023 Strategic Water Resources Plan Update, State Clearinghouse #2023080290

To Whom It May Concern:

The Antelope Valley Air Quality Management District (District) has received the request to review planning documents for the Notice of Availability Draft Environmental Impact Report for the 2023 Strategic Water Resources Plan Update, State Clearinghouse #2023080290 for the proposed actions that make the most of local water supplies and facilities. The goal of this SWRP Update was to reevaluate PWD's ability to meet the demands of both current and future customers through the year 2050 while aligning with PWD's long-term plan for supplying water to its customers. This project site is located throughout PWD's 47-square-mile service area in the Antelope Valley area of Los Angeles County, California. A portion of the Palmdale Ditch component of the Project extends south of the PWD service area and a portion of the conveyance facilities to the Upper Amargosa Creek Water Recharge Project extended north of the PWD service area in unincorporated Los Angeles County. This project site is located in the Palmdale and Ritter Ridge U.S. Geological Survey (USGS) 7.5-minute quadrangles. 4-1

Prior to initiating any construction activity, the District requires the proposed project to comply with all requirements outlined in District Rule 403, *Fugitive Dust*. A person shall not conduct an Active Operation of Construction, excavation, extraction and other Earth-Moving Activities with a Disturbed Surface Area of five or more acres, or with a daily import or export of 100 cubic yards or more of Bulk Material without utilizing at least one of the measures listed for each of the operation stages specified in subparagraphs following District Rule 403(C)(4)(a). 4-2 Upon completion of the project, all disturbed surface areas must meet the definition of a stabilized surface, as defined in Rule 403 and verified by District staff. 4-3

We have reviewed the documentation and based on the information available to us at this time, we have no additional comments on the request for the proposed project. 4-4

Thank you for the opportunity to review this planning document. If you have any questions regarding the information presented in this letter please contact me at (661) 723-8070 ext. 23 or blods@avaqmd.ca.gov .

Sincerely,

Barbara Lods

Barbara Lods

BJL/SS
Sent via Email

RESPONSE TO COMMENT LETTER 4

Antelope Valley Air Quality Management District, Barbara Lods

Response to Comment 4-1:

PWD appreciates the time and consideration in submitting a comment letter.

Response to Comment 4-2:

Please refer to the Draft EIR Section 3.2.3.4 Impacts and Mitigation Measures page 3.2-23, for the specific discussion surrounding the Project complying with all applicable laws and regulations regarding air quality. The Draft EIR describes that the proposed Project would comply with all requirements outlined in District Rule 403. Mitigation Measure AIR-1 complies with District Rule 403(C)(4)(a) as it states that PWD shall ensure construction contractor(s) implement at least one measure to comply with District Rule 403, which includes Dust Control Plan.

Response to Comment 4-3:

Please refer to the Draft EIR Section 3.2.3.4 Impacts and Mitigation Measures page 3.2-23, which describes how the proposed Project would comply with Antelope Valley Air Quality Management District (AVAQMD) Rule 403 requirements, which includes meeting the definition of a stabilized surface.

Response to Comment 4-4:

Comment noted. PWD appreciates the AVAQMD's time and consideration of the Draft EIR.

Comment Letter 5

From: Jill Mccormick <historicpreservation@quechantribe.com>
Sent: Thursday, October 24, 2024 11:26 AM
To: Scott Rogers <srogers@palmdalewater.org>
Subject: 2023 Strategic Water Resources Plan Update - Palmdale Water District

CAUTION: This email originated from outside of PWD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning,
This email is to inform you that we do not wish to comment on this project. The Ft. Yuma Quechan Tribe Historic Preservation Office defers to the more local Tribes on this matter. 5-1

Thank you,
H. Jill McCormick, M.A.

Historic Preservation Office
Ft. Yuma Quechan Indian Tribe
P.O. Box 1899
Yuma, AZ 85366-1899
Office: 760-919-3631
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RESPONSE TO COMMENT LETTER 5

Yuma Quechan Indian Tribe, Jill McCormick, Historic Preservation Officer

Response to Comment 5-1:

PWD appreciates the Yuma Quechan Indian Tribe's time and consideration and will coordinate with more local tribes requesting to be consulted on the Project.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
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GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

Comment Letter 6

November 8, 2024

Scott Rogers
Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550
srogers@palmdalewater.org

SUBJECT: PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT FOR THE 2023 STRATEGIC WATER RESOURCES PLAN, SCH NO. 2023080290, LOS ANGELES COUNTY, CA

Dear Scott Rogers:

The California Department of Fish and Wildlife (CDFW) reviewed the Programmatic Environmental Impact Report (PEIR) from the Palmdale Water District (PWD; Lead Agency) for the 2023 Strategic Water Resources Plan (Project) pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines[1].

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code. 6-1

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Fish & G. Code, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

Conserving California's Wildlife Since 1870

CDFW may also act as a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law[2] of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.) or the Native Plant Protection Act (NPPA; Fish & G. Code, §1900 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

6-1 cont.

PROJECT DESCRIPTION SUMMARY

Proponent: PWD

Objective: The Project is a programmatic Plan for developing and utilizing a mix of water supply sources and facilities to meet PWD's water supply demand through 2050. The Plan also describes PWD's ongoing monitoring and reporting of conservation efforts to meet City and State policies and ordinances. Described are several water supply sources and facilities, some of which are analyzed in other CEQA documents. In addition to ongoing Projects that are associated with separate CEQA actions, this Project proposes and analyzes the following new actions:

Pure Water Project
Under the proposed Project, PWD would maximize beneficial use of recycled water through construction and implementation of an Advanced Water Purification Facility (facility) on a vacant property near the Palmdale Water Reclamation Plant. The facility is referred to as the Pure Water Antelope Valley Project, and operations would consist of directly injecting purified water into the saturated zone of an aquifer. Moreover, PWD would store recycled water after purification into the Antelope Valley Groundwater Basin. Up to five new recycled water injection wells would be required if more recycled water is received. The locations of the purified recycled water injection wells are anticipated to be within the Pure Water Antelope Valley property. New recycled water conveyance pipelines would be constructed between the Palmdale Water Reclamation Plant and the new facility, and between the new injection wells and the new facility. The facility and associated infrastructure is conceptual in capacity and no CEQA analysis was provided in this PEIR.

6-2

Well Replacement and Rehabilitation
Under the proposed Project, PWD would rehabilitate or replace up to 22 PWD groundwater wells to maintain the existing pumping capacity and enable greater pumping during dry years. Five existing wells have been pre-selected to be replaced in the near future. Wells selected for rehabilitation would remain in their existing location

[2] "Take" is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

while replacement wells may be located in areas with higher rates of groundwater production or near existing wells. Moreover, PWD would purchase 1,000 acre-feet per year (AFY) of groundwater production rights from other pumpers in the Antelope Valley Groundwater Basin. A total of seven new wells would be constructed to extract the purchased groundwater rights and water that would connect to an existing distribution system. New conveyance pipelines would also need to be installed to implement extraction activities.

Palmdale Ditch Conversion Project
Additionally, the Project proposes the Palmdale Ditch Conversion Project. The Palmdale Ditch (Ditch) is an 8.5-mile-long conveyance system that transports water from Littlerock Reservoir to Lake Palmdale. Approximately 1.3 miles of the Ditch was previously converted to an underground pipeline. This proposed Project would enclose the remaining 7.2-mile-long Ditch by constructing a pipeline within and near the existing Ditch.

Project Alternatives: The PEIR provides three Project Alternatives: No Project Alternative (Alternative 1), Reduced Project Alternative (Alternative 2), and Alternative Location to the Palmdale Ditch Conversion Project (Alternative 3). Under Alternative 1, PWD would not implement the proposed Project and no impacts would occur. Under Alternative 2, the proposed Project would not include a purchase of 2,000 AFY groundwater production rights and does not include improvements to the Ditch. The Ditch would maintain its existing condition and would not be converted to an underground pipeline. The new turnout to the California Aqueduct would also not be constructed. The remainder of the proposed Project such as maximizing imported water supplies, recycled water injection, rehabilitation and replacement of wells, construction of new groundwater wells, and on-going Projects would be implemented. Under Alternative 3, an alternate location of the Ditch is considered. Under this alternative, the Ditch would continue to be a buried pipeline, however, 6.5 miles of buried pipeline would be installed within Cheseboro Road and Barrel Springs Road. Moreover, the majority of the current Ditch would be abandoned, and water would be conveyed via gravity flow with siphons in the pipeline. The new turnout at the California Aquaduct may still be installed. Similar to Alternative 2, the remaining actions and on-going Projects proposed in the Project would be implemented.

6-2 cont.

Location: The Project area is located throughout PWD's 47-square mile service area in the City of Palmdale (City) and its surrounding sphere of influence within Los Angeles County. The proposed Project includes some facilities that are located outside of PWD's service area. For the Palmdale Ditch Improvement Project, a portion of the Ditch extends south of the PWD service area and into the Angeles National Forest.

Timeframe: The proposed implementation schedule for these individual Projects within the Plan are scheduled to be implemented between 2025 to 2035. PWD would continue to recharge imported water at the Upper Amargosa Creek Recharge Project and continue to remove sediment at Littlerock Reservoir. It is assumed that the Palmdale

Ditch Conversion Project and Pure Water Antelope Valley Project are high-priority individual Projects that would be initiated near 2025. Additionally, recycled water injection wells and new groundwater wells would be constructed prior to 2035. Groundwater rights purchases would not be required until the end of the planning period between 2045 to 2050.

Biological Setting: The PWD service area is almost entirely within the City but also consists of land within unincorporated Los Angeles County. The Project area is located within the Antelope Valley, which encompasses a variety of vegetation communities and landscapes. Analysis of the biological resources and sensitive species for the proposed Project was conducted through review of the 2018 PWD Water System Master Plan PEIR and a review of databases. For the Palmdale Ditch Conversion Project, Rincon Consultants Inc. conducted a biological resource assessment (BRA), delineation of water features, a western Joshua tree (*Yucca brevifolia*; CESA candidate species) census, and focused surveys for Crotch's bumble bee (*Bombus crotchii*; CESA candidate species).

Within the Project area, there are active and remnant agricultural fields as well as various desert vegetation communities. Vegetation communities within the Project area include, but is not limited to, Joshua tree woodland, semi-desert chaparral, California juniper (*Juniperus californica*) woodland, shrubland, and grassland. Open water in the Project area consist of Lake Palmdale, Una Lake, Littlerock Wash, the California Aqueduct, and Anaverde Creek.

6-2 cont.

Given the diverse desert habitats within the Project area, there is suitable habitat for the following species: Mohave ground squirrel (*Xerospermophilus mohavensis*; CESA-listed threatened), southwestern pond turtle (*Actinemys pallida*; federal candidate for listing, SSC), desert tortoise (*Gopherus agassizii*; CESA-listed endangered, ESA-listed threatened), two-striped gartersnake (*Thamnophis hammondii*; SSC), northern California legless lizard (*Anniella pulchra*; SSC), California legless lizard (*Anniella* spp.; SSC), California glossy snake (*Arizona elegans occidentalis*; SSC), coast horned lizard (*Phrynosoma blainvillii*; SSC), tricolored blackbird (*Agelaius tricolor*; CESA-listed threatened), burrowing owl (*Athene cunicularia*; CESA candidate species), loggerhead shrike (*Lanius ludovicianus*; SSC), Le Conte's thrasher (*Toxostoma lecontei*), least Bell's vireo (*Vireo bellii pusillus*; CESA and ESA-listed endangered), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*; Fully Protected Species), Swainson's hawk (*Buteo swainsoni*; CESA-listed threatened), southwestern willow flycatcher (*Empidonax traillii extimus*; CESA and ESA-listed endangered), San Diego desert woodrat (*Neotoma lepida intermedia*; SSC), pallid bat (*Antrozous pallidus*; SSC), and Townsend's big-eared bat (*Corynorhinus townsendii*; SSC). While there is no designated critical habitat in the Project area, the nearest critical habitat is for arroyo toad (*Anaxyrus californicus*; Endangered Species Act (ESA)-listed endangered, SSC), located one mile south of the Ditch. Deer (*Cervidae* sp.), bears (*Ursidae* sp.), bobcats (*Lynx rufus* sp.), desert big horn sheep (*Ovis canadensis neisoni*; Fully Protected

Species), and mountain lion (*Puma concolor*; CESA candidate species) may also be observed utilizing the ditch.

PWD has incorporated 21 mitigation measures in the PEIR specific to biological resources and special-status species. The mitigation measures cover a variety of topics, which include, but is not limited to best management practices, preconstruction surveys, qualified biological monitor, and species-specific measures. The species-specific measures focus on avoidance actions (i.e., avoidance buffers), plans, and compensatory mitigation of a 1:1 ratio if avoidance is unachievable.

Project History: As part of the CEQA process, PWD published a Notice of Preparation (NOP) for the Project on August 15, 2023. During the CEQA public review period, CDFW provided a comment letter to PWD (September 2023). Since July 2024, CDFW has worked with PWD and the biological consultant, Rincon Consultants Inc., to discuss biological resources related to the Palmdale Ditch Conversion Project. Engagement with PWD and their consultant have been centered around Crotch's bumble bee focused surveys and western Joshua tree permitting obligations. 6-2 cont.

COMMENTS AND RECOMMENDATIONS

While CDFW appreciates the PWD's efforts to incorporate CDFW's NOP comments, we have additional comments and recommendations below to assist PWD in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Additional comments or other suggestions may also be included to improve the document.

COMMENT # 1: Palmdale Ditch Conversion Project

Issue: The biological analysis provided in the PEIR for the Palmdale Ditch Conversion Project may not sufficiently evaluate impacts on wildlife species.

Specific impact: The Palmdale Ditch Conversion Project involves permanently removing a critical water source for wildlife from Littlerock Reservoir to Lake Palmdale (approximately 8.5 miles). Construction activities related to converting the 7.2-mile Ditch to a pipeline may result in permanent and temporary loss of suitable habitat, direct mortality of rare plants and wildlife, loss of a water source for wildlife, and increase both noise and disturbance. 6-3

Why impact would occur: The PEIR stated that there has been a decrease in water deliveries from 1995 to 2024 and claimed that, "…wildlife likely rely on other readily available sources of water within and adjacent to the BSA, such as Littlerock Wash, and other water features overly the San Adreas Fault (i.e., sag ponds), Lake Palmdale, Lake Una…" (page 3.3-35). While water deliveries are not as frequent, the Ditch is an intermittent stream that also receives water during flooding events and wash-outs. Additionally, some water features such as Lake Palmdale are in close proximity to urbanized areas of the City that see a high level of human activity. Because of this

higher level of human activity, wildlife may preferentially select the Ditch as a water source over the other available sources. Given its proximity to suitable habitat and the Angeles National Forest, it is highly probable that medium to large sized mammals may utilize the Ditch as a water resource. Medium and large bodied mammals that may use the Ditch for water include, but are not limited to, big horn sheep, mule deer, mountain lions (of the San Gabriel Population that represent an evolutionarily significant unit), bobcats, and other meso-carnivores. In support of this hypothesis, CDFW has anecdotal evidence of desert big horn sheep drinking from the upper reaches of the Littlerock reservoir (personal communication). A wildlife camera study should be conducted to provide technical data on which wildlife species use the ditch and how often they visit. Without camera data to substantiate claims of wildlife usage, CDFW remains concerned that enclosing the entire Ditch will result in the permanent loss of a water source and have significant impacts on wildlife.

Not only do ditches like the Palmdale Ditch represent a water resource to wildlife species, but ditches are often used as movement corridors for wildlife (CDFW observation). The BRA states that, "The Ditch occurs along a transition between mountain and desert ecosystems within a largely undeveloped area lacking physical barriers to connectivity or artificial lighting that creates the potential for wildlife movement across the BSA" (page 52). Conducting a camera survey would also provide data on wildlife movement and alternative uses of the Ditch by local wildlife species.

6-3 cont.

Evidence impact would be significant:

Several wildlife species are protected under CESA and meet the CEQA definition of rare, threatened, or endangered species (CEQA Guidelines, § 15380). Moreover, the Project may impact Fully Protected Species such as bighorn sheep, which are known to occur in Antelope Valley. Fully Protected Species may not be taken or possessed except with authorization from CDFW and only under specific circumstances (Fish and Game Code § 4700). Impacts on the special-status wildlife may require a mandatory finding of significance because the Project would potentially threaten to eliminate a plant or animal community and/or substantially reduce the number or restrict the range of an endangered, rare, or threatened species (CEQA Guidelines, §15065). Habitat that supports wildlife movement and serve as wildlife migratory corridors are essential to the survival of many California species (Fish and Game Code §1955 (d)). With the increasing loss of suitable habitat and water sources on a local and regional scale, impacts to these biological resources would be considered significant impacts as a result of the Project.

Recommended Potentially Feasible Mitigation Measure(s)

Recommendation #1: Wildlife Camera Study - CDFW recommends PWD conduct a camera survey by deploying motion-activated trail cameras intermittently along the drainage, using animal tracks, scat, trails, and other wildlife signs to set the cameras in areas where wildlife are likely to occur. Cameras should be placed by a biologist familiar

with the local wildlife species and who has experience deploying, monitoring, and analyzing data from trail camera surveys. Cameras should be deployed for a minimum of one year to accurately capture the activity of local wildlife species.

6-3 cont.

Recommendation #2: Wildlife Movement - Following the results of the wildlife camera study, CDFW recommends that PWD reassess the Project's impact on the Ditch serving as a local wildlife corridor and wildlife movement.

ADDITIONAL COMMENTS

Reduced Project Alternative. CDFW supports the Reduced Project Alternative, which would leave the Ditch in its current condition and eliminate the purchase of groundwater rights. If PWD proceeds with enclosing the pipeline, wildlife species would be impacted, directly (e.g., mortality, injury) and indirectly (e.g., habitat loss). During the construction phase of the Ditch, approximately 450 western Joshua trees would be removed, and work would occur within 50 feet of up to 1,200 western Joshua trees. Additionally, up to approximately 80 acres of suitable floral resources for Crotch's bumble bee would be impacted (page 3.3-63). Furthermore, the PEIR states, "[T]he Reduced Project Alternative would not include the conversion of the Palmdale Ditch; thus it would have fewer construction-related impacts to biological, cultural and tribal resources, paleontological, wildfire, aesthetics, and transportation to the construction phase, and reduced impacts to air quality, energy, GHG emissions, and transportation during operations" (page 4-9). While PWD believes that the Reduced Project Alternative does not completely fulfil the objectives of the SWRP, PWD can achieve the majority of its objectives with this alternative and could re-evaluate additional ways to optimize its other water supply sources. CDFW strongly recommends that PWD adopt the Reduced Project Alternative as the proposed Project. If PWD chooses to pursue the Palmdale Ditch Conversion Project, we believe that separate and distinct CEQA analysis would be appropriate.

6-4

CEQA Document Tiering. The PEIR discusses Project-specific construction activities and biological impacts related to the Pure Water Antelope Valley Project, Palmdale Ditch Conversion Project, and rehabilitation and/or replacement of existing wells. For the Pure Water Antelope Valley Project and rehabilitation and/or replacement of existing wells, no site-specific biological assessment was conducted for either of these individual Projects. The impact analysis in the Biological Resources section of the PEIR is speculative and not based on biological surveys conducted at the individual Project sites by qualified biologists. CDFW recommends that, for individual Projects nested under the proposed Project, findings of significance should be set aside when certifying the PEIR until those aspects can be fully studied in a subsequent or supplemental CEQA document (see CEQA Guidelines §§ 15162 and 15163). The PEIR should explicitly discuss what further CEQA actions are anticipated for these Projects, whether further analysis will be provided, and whether it will be available for public review. In addition to this recommendation, CDFW would appreciate the opportunity to review and comment on CEQA addendums associated with this PEIR.

6-5

Project Components. Table ES-2: Summary of Impacts outlines the mitigation measures that are anticipated to be adopted once the PEIR is certified. For mitigation measures pertaining to biological resources, each measure states whether the mitigation measure applies to the Palmdale Dith Conversion, other Project components, or both. Given that the EIR is a programmatic planning document, mitigation measures should not have separate requirements for distinct Project components such as the Palmdale Ditch Conversion Project. CDFW recommends that all mitigation measures be applied to all components of the proposed Project as a whole. Mitigated measures specific to the Palmdale Ditch Conversion Project should be incorporated into a tiered Project-specific CEQA document. Conversely, CDFW recommends that the Palmdale Ditch Conversion Project be analyzed as its own project separate from this CEQA action. 6-6

Mitigation Measures. Mitigation measures pertaining to special-status species, in summary, state that avoidance will be prioritized and that if impacts cannot be avoided, then a compensatory mitigation ratio of 1:1 will be used. While CDFW acknowledges that avoidance is generally preferred over take of listed or otherwise sensitive species, we believe that the scope and breadth of the Project and associated individual Projects makes full avoidance of these species extraordinarily challenging and/or unlikely. Furthermore, CDFW does not concur that a 1:1 compensatory mitigation ratio will necessarily satisfy CESA's Fully Mitigated Standard. Any Incidental Take Permit (ITP) issued may require a higher ratio in order to meet this standard. Ratios associated with take of riparian habitat through a Streambed Alteration Agreement may also be higher than 1:1. Therefore, if special-status species are observed on site, CDFW requests that we be contacted as soon as possible to scope appropriate compensatory mitigation and outstanding permitting requirements. We recommend that mitigation measures BIO-2, 3, 4, 5, 6, 8, 9, 10, 11, 19, and 20 be amended to say that appropriate mitigation ratios for compensatory mitigation may be increased higher than a 1:1 ratio following consideration of all Project impacts and coordination with CDFW. CDFW is available to review and provide feedback on any mitigation measure language prior to the publication of the final PEIR and welcome collaboration with the PWD at this phase of the document development. 6-7

In addition to references to compensatory mitigation, CDFW also recommends the mitigation measures for arroyo toad, desert tortoise, tricolored blackbird, and least Bell's vireo be separate and distinct measures by species rather than consolidated into one measure. Impacts towards these species cannot be addressed uniformly, and each measure should describe what is needed in order to appropriately mitigate for each species. Mitigation should include avoidance as well as compensatory mitigation provisions and permitting obligations. 6-8

Mitigation Measure BIO-17. CDFW recommends that PWD revise Mitigation Measure BIO-17 to incorporate language underlined and omit language in strikethrough: 6-9

This mitigation measure is applicable to individual Projects in ~~the Palmdale Ditch Conversion project and other Project components for~~ which suitable habitat for nesting birds is identified during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. Project component construction activities shall occur outside of the bird breeding season (February 1 to August 31) ~~to the extent practicable~~. If construction must commence within the bird breeding season, PWD shall retain a qualified biologist to conduct a pre-construction nesting bird survey within a 500-foot radius of the project site ~~the disturbance footprint plus a 100-foot buffer (300 feet for raptors), where feasible~~, no more than seven days prior to initiation of ground disturbance (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation) ~~in each work area~~. If the Project component is phased or construction activities stop for more than one week, a subsequent pre-construction nesting bird survey shall be conducted prior to each phase of construction, if initiated during the bird breeding season.

Pre-construction nesting bird surveys shall be conducted during the time of day when birds are active and shall factor in sufficient time to perform this survey adequately and completely. A brief report of the nesting bird survey results, if applicable, shall be submitted to PWD for review and approval prior to ground disturbance and/or vegetation removal activities.

6-9 cont.

If no nesting birds are observed during pre-construction surveys, no further action is required. If nests are found, an appropriate avoidance buffer of up to 300 feet ~~ranging in size from 25 to 50 feet~~ for passerine (perching birds) nests and up to 500 feet ~~up to 300 feet~~ for active, non-listed raptor nests ~~(depending on the species and the proposed work activity)~~ shall be determined by the qualified biologist and demarcated with bright orange construction fencing or other suitable flagging. Active nests shall be monitored at a minimum of once per week until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or parental care for survival. No construction activity shall occur within this buffer until the qualified biologist confirms the breeding/nesting is completed and all the young have fledged. ~~If Project component activities must occur within the buffer, they shall only be conducted at the discretion of the qualified biologist.~~

Hydrology Report. The BRA identified 20 unnamed drainages along the Ditch area. During heavy rain events these drainages may enter and flow through the open Ditch. Once the Ditch is completely underground, the hydrological flow will be altered. The PEIR does not discuss hydrology, nor does it provide any technical study to demonstrate the hydrology pattern of surrounding drainage systems upon buildout of the pipeline. CDFW recommends the PWD provide a provide a hydrological study and basis of design report that includes information on how water and sediment is conveyed throughout the entirety of the ditch project, including water surface profiles in a 2-, 5-, 10-, 25-, 50-, 100-, and 200-year storm event. This report should provide information about how the enclosing the ditch will affect local drainages and will depict the anticipated post Project hydrology.

6-10

Fully Protected Species. The PEIR notes that there is a moderate potential for the golden eagle to occur within the Project area (page 3.3-29). Additionally, CDFW is aware of desert big horn sheep within the Project area and Antelope Valley. Fully Protected Species may not be taken or possessed at any time according to the Fish and Game Code § 3511. CDFW cannot authorize take for the golden eagle or desert big horn sheep and PWD must completely avoid impacts to these species during individual project's construction and operational activities. 6-11

Mitigation Measure BIO-3. CDFW appreciates the incorporation of Mitigation Measure BIO-3: Joshua Tree Census Survey, Avoidance, Minimization, and Compensation Measures in the PEIR. We recommend that the mitigation measure removes the in-lieu fee prices given that rates associated with the Western Joshua Tree Conservation Act may change prior to an invoice payment. 6-12

CESA. Several CESA protected species (e.g., western Joshua tree, burrowing owl, desert tortoise, Crotch's bumble bee) are either present within the Project area or have the potential of being present during individual project activities. As to CESA, take of any endangered, threatened, candidate species, or CESA-listed plant species that results from the Project is prohibited, except as authorized by state law (Fish & G. Code §§ 2080, 2085; Cal. Code Regs., tit. 14, §786.9). While CDFW appreciates the avoidance and minimization measures PWD has incorporated into the PEIR to avoid take of special status species, incidental take may still occur. Consequently, if the Project or any Project-related activity will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends that PWD seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from CDFW may include an ITP or a consistency determination in certain circumstances, among other options [Fish & G. Code, §§ 2080.1, 2081, subds. (b) and (c)]. 6-13

Early consultation is encouraged, as significant modification to a project and mitigation measures may be required to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the Project CEQA document addresses all Project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

ESA Consultation. Several project components of the proposed Project may result in take of special-status species protected under ESA. Take under the ESA includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. CDFW recommends consultation with the USFWS, in order to 6-14

comply with ESA, prior to Project construction and operational activities that may adversely impact ESA-listed or candidate species. 6-14 cont.

Mitigation and Monitoring Reporting Plan. CDFW recommends the Project's environmental document include the mitigation measures recommended in this letter. CDFW has provided comments via a mitigation monitoring and reporting plan to assist in the development of feasible, specific, detailed (i.e., responsible party, timing, specific actions, location), and fully enforceable mitigation measures (CEQA Guidelines, § 15097; Pub. Resources Code, § 21081.6). The Lead Agency is welcome to coordinate with CDFW to further review and refine the Project's mitigation measures. Per Public Resources Code section 21081.6(a)(1), CDFW has provided a summary of our suggested mitigation measures and recommendations in the form of an attached Draft Mitigation Monitoring and Reporting Plan (Attachment A). 6-15

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNDDB website[3] provides direction regarding the types of information that should be reported and allows on-line submittal of field survey forms (CDFW 2024a). 6-16

In addition, information on special status native plant populations and sensitive natural communities, should be submitted to CDFW's Vegetation Classification and Mapping Program using the Combined Rapid Assessment and Relevé Form[4] (CDFW 2024b).

PWD should ensure data collected for the preparation of the PEIR is properly submitted.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.) 6-17

[3] https://wildlife.ca.gov/Data/CNDDB https://wildlife.ca.gov/Data/CNDDB
[4] https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Submit

CONCLUSION

CDFW appreciates the opportunity to comment on the PEIR to assist PWD in identifying and mitigating Project impacts on biological resources. CDFW requests an opportunity to review and comment on any response that PWD has to our comments and to receive notification of any forthcoming hearing date(s) for the Project (CEQA Guidelines, § 15073(e)). 6-18

Questions regarding this letter or further coordination should be directed to Julisa Portugal[5], Environmental Scientist.

Sincerely,

DocuSigned by:
5991E19EF8094C3...
Victoria Tang
Environmental Program Manager
South Coast Region

ATTACHMENTS

Attachment A: Draft Mitigation, Monitoring, and Reporting Program

ec: California Department of Fish and Wildlife
Victoria Tang, Environmental Program Manager
Jennifer Turner, CEQA Senior Environmental Scientist (Supervisory)
Steve Gibson, CESA Senior Environmental Scientist (Supervisory)
Frederic Rieman, LSA Senior Environmental Scientist (Supervisory)
Julisa Portugal, Environmental Scientist
Cooper Wall, Environmental Scientist
Andrew Aitken, Environmental Scientist

Office of Planning and Research
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[5] Phone: 562-330-7563; Email: Julisa.Portugal@wildlife.ca.gov

REFERENCES

California Department of Fish and Wildlife. September 2023. Comments on the Notice of Preparation of a Programmatic Environmental Impact Report for the 2023 Strategic Water Resources Plan Update, Palmdale Water District, Los Angeles County, California (SCH No. 2023080290)

[CDFW] California Department of Fish and Wildlife. 2024a. California Natural Diversity Database. Available at: https://wildlife.ca.gov/Data/CNDDB

[CDFW] California Department of Fish and Wildlife. 2024b. Combined Rapid Assessment and Revele Form. Available at: https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Submit

[CNPS] California Native Plant Society. 2024. California Rare Plant Ranks. Available at: https://www.cnps.org/rare-plants/california-rare-plant-ranks

ATTACHMENT A: DRAFT MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

CDFW provides the following language to be incorporated into the MMRP for the Project.

Mitigation Measure	Timing	Responsible Party
Mitigation Measure #1: Mitigation Measure BIO-17 - This mitigation measure is applicable to individual Projects in which suitable habitat for nesting birds is identified during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. Project component construction activities shall occur outside of the bird breeding season (February 1 to August 31). If construction must commence within the bird breeding season, PWD shall retain a qualified biologist to conduct a pre-construction nesting bird survey within a 500-foot radius of the project site, no more than seven days prior to initiation of ground disturbance (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). If the Project component is phased or construction activities stop for more than one week, a subsequent pre-construction nesting bird survey shall be conducted prior to each phase of construction, if initiated during the bird breeding season. Pre-construction nesting bird surveys shall be conducted during the time of day when birds are active and shall factor in sufficient time to perform this survey adequately and completely. A brief report of the nesting bird survey results, if applicable, shall be submitted to PWD for review and approval prior to ground disturbance and/or vegetation removal activities. If no nesting birds are observed during pre-construction surveys, no further action is required. If nests are found, an appropriate avoidance buffer of up to 300 feet for passerine (perching birds) nests and up to 500 feet for active, non-listed raptor nests	Prior to and during Project activities	Qualified Biologist

Mitigation Measure	Timing	Responsible Party
shall be determined by the qualified biologist and demarcated with bright orange construction fencing or other suitable flagging. Active nests shall be monitored at a minimum of once per week until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or parental care for survival. No construction activity shall occur within this buffer until the qualified biologist confirms the breeding/nesting is completed and all the young have fledged.		
Recommendation #1: Wildlife Camera Study - CDFW recommends PWD conduct a camera survey by deploying motion-activated trail cameras intermittently along the drainage, using animal tracks, scat, trails, and other wildlife signs to set the cameras in areas where wildlife are likely to occur. Cameras should be placed by a biologist familiar with the local wildlife species and who has experience deploying, monitoring, and analyzing data from trail camera surveys. Cameras should be deployed for a minimum of one year to accurately capture the activity of local wildlife species.	Prior to adoption of PEIR	Lead Agency
Recommendation #2: Wildlife Movement - Following the results of the wildlife camera study, CDFW recommends that PWD reassess the Project's impact on the Ditch serving as a local wildlife corridor and wildlife movement.	Prior to adoption of PEIR	Lead Agency
Recommendation #3: Reduced Project Alternative - CDFW strongly recommends that PWD adopt the Reduced Project Alternative as the proposed Project. If PWD chooses to pursue the Palmdale Ditch Conversion Project, we believe that separate and distinct CEQA analysis would be appropriate.	Prior to adoption of PEIR	Lead Agency

Mitigation Measure	Timing	Responsible Party
Recommendation #4: CEQA Document Tiering - CDFW recommends that, for individual Projects nested under the proposed Project, findings of significance should be set aside when certifying the PEIR until those aspects can be fully studied in a subsequent or supplemental CEQA document (see CEQA Guidelines §§ 15162 and 15163). The PEIR should explicitly discuss what further CEQA actions are anticipated for these Projects, whether further analysis will be provided, and whether it will be available for public review.	Prior to adoption of PEIR	Lead Agency
Recommendation #5: Project Components - CDFW recommends that all mitigation measures should be applied to all components of the proposed Project as a whole. Mitigated measures specific to the Palmdale Ditch Conversion Project should be incorporated into a tiered Project-specific CEQA document. Conversely, CDFW recommends that the Palmdale Ditch Conversion Project be analyzed as its own project separate from this CEQA action.	Prior to adoption of PEIR	Lead Agency
Recommendation #6: Mitigation Measures - We recommend that mitigation measures BIO-2, 3,4,5,6, 8, 9, 10,11,19, and 20 be amended to say that appropriate mitigation ratios for compensatory mitigation will be scoped with CDFW. CDFW also recommends the mitigation measures for arroyo toad, desert tortoise, tricolored blackbird, and least Bell's vireo, be separate and distinct measures by species rather than clumped into one measure.	Prior to adoption of PEIR	Lead Agency
Recommendation #7: Hydrology Report - CDFW recommends the PWD provide a provide a hydrological study and basis of design report that includes information on how water and sediment is conveyed throughout the entirety of the ditch project, including water surface profiles in a 2-, 5-, 10-, 25-, 50-, 100-, and 200-year storm event. This report should provide information about how the enclosing the ditch will affect local drainages and will depict the anticipated post Project hydrology.	Prior to adoption of PEIR	Lead Agency

Mitigation Measure	Timing	Responsible Party
Recommendation #8: Fully protected Species - CDFW cannot authorize take for the golden eagle or desert big horn sheep and PWD must completely avoid impacts to these species during individual project's construction and operational activities.	During individual Projects	PWD
Recommendation #9: Mitigation Measure BIO-3 - We recommend that the mitigation measure removes the in-lieu fee prices given that rates associated with the Western Joshua Tree Conservation Act may change prior to an invoice payment.	Prior to adoption of PEIR	Lead Agency
Recommendation #10: CESA - CDFW recommends that PWD seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from CDFW may include an ITP or a consistency determination in certain circumstances, among other options.	Prior to ground-disturbing activities	PWD
Recommendation #11: ESA - CDFW recommends consultation with the USFWS, in order to comply with ESA, prior to Project construction and operational activities that may adversely impact ESA-listed or candidate species.	Prior to ground-disturbing activities	PWD

RESPONSE TO COMMENT LETTER 6

California Department of Fish and Wildlife, Victoria Tang, Environmental Program Manager, South Coast Region

Response to Comment 6-1:

The commenter's role as a trustee and responsible agency under CEQA is acknowledged. As indicated in Table 2-7: Regulatory Requirements and Authorization and Approvals on pages 2-38 and 2-39 of the Draft EIR, the Palmdale Ditch Conversion Project would require a Streambed Alteration Agreement and Incidental Take Permits from CDFW; therefore, CDFW is anticipated to serve as a responsible and trustee agency under CEQA for the Project.

Response to Comment 6-2:

The comment's summary of the Project description, location, timeframe, alternatives, and biological setting evaluated in the Draft EIR as well as a summary of the Project history is noted. The comment's intent to offer comments and recommendations to assist PWD in adequately identifying and/or mitigating the Project's impact on biological resources is appreciated. Refer to Response 6-3 through Response 6-17 for responses to the specific comments, recommendations, and suggested measures provided by the comment.

Response to Comment 6-3:

The following response responds to the comment's concerns about the analysis of impacts to wildlife species from the Palmdale Ditch Conversion Project in the Draft EIR. The comment suggests the conversion of the Palmdale Ditch (Ditch) would permanently remove a water source for wildlife between Littlerock Reservoir and Lake Palmdale and construction activities would potentially result in permanent and temporary habitat loss, direct mortality of rare plants and wildlife, and increased noise and disturbance during construction. The comment recommends conducting a wildlife camera study to gather data on the use of the Ditch as a water source and movement corridor and suggests PWD reassess the Project's impact based on the study's findings.

As described in Section 3.3.1.5, *Wildlife Movement Corridors*, and Section 3.3.1.6, *Aquatic Resources*, in Section 3.3, *Biological Resources*, of the Draft EIR (pages 3.3-35 and 3.3-39), while the Ditch may function as a source of water for local and migrating wildlife during times that water deliveries occur, the timing and amount of such deliveries have been unpredictable in the last decade as a result of drought years and changing climatic patterns affecting precipitation and thus water levels in Littlerock Reservoir. In the absence of a reliable and predictable water supply in the Ditch over the years, wildlife likely rely on other readily available sources of water within and adjacent to the Ditch. As discussed in Section 3.8, *Hydrology, Groundwater, and Water Quality*, of the Draft EIR and Response 6-10, below, the current conveyance capacity of the Ditch is a fraction of flood volumes that would be expected during the 2-year design storm or 100-year design storm. As a result, most flood waters flow over the Ditch (including across existing overcrossings over the Ditch) during such storm events and do not collect within the Ditch.

Other water sources for wildlife near the southern extent of the Ditch (which likely experience lower levels of human activity) include Littlerock Wash, Littlerock Reservoir (at which the comment indicates they have anecdotal evidence of desert big horn sheep drinking water), and sag ponds south of the region's urban areas. The northern extent of the Ditch is in proximity to paved roadways, development, and likely higher levels of human activity (including temporary shelters constructed by those experiencing homelessness, off-highway vehicle use, and other recreation users), which, as the comment notes, would likely discourage wildlife from preferentially selecting such a water source.

While wildlife may move along certain sections of the Ditch, they are likely crossing the Ditch as they move across the landscape of the San Gabriel Mountain foothills. In some areas, the current nature of the Ditch is not conducive to facilitating wildlife movement, such as in the Angeles National Forest where the Ditch is characterized by a concrete trough that would be difficult for wildlife to use as a movement corridor (refer to Photograph 1 of Appendix E, Site Photographs, of Appendix C-1, *Palmdale Ditch Conversion Project Biological Resources Assessment*, of the Draft EIR).

The Draft EIR has been prepared in accordance with CEQA Guidelines Section 15151, which states "An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible." The analysis of potential impacts to wildlife movement from the Palmdale Ditch Conversion Project in the Draft EIR is sufficient to inform decision makers of potential environmental consequences in light of what is reasonably feasible. A year-long wildlife camera study would not be reasonably feasible given the need to construct the pipeline to achieve water conservation goals and the anticipated construction schedule dictated by State and federal funding requirements. In addition, a year-long wildlife camera study of the Ditch alone would not be sufficient to decisively conclude whether the Ditch is a critical water source for wildlife between Littlerock Reservoir to Lake Palmdale relative to other water sources that wildlife can and likely do access in this area, as noted above. To determine whether wildlife preferentially select the Ditch as a water source over others would require a much broader study of water sources in the area, which is not reasonably feasible. Such a study would not be expected to meaningfully change the conclusions of the Draft EIR considering that the medium- to large-sized mammals identified by the comment are highly mobile (some with large ranges) and likely not solely reliant on the Ditch nor restricted from accessing other water sources in the vicinity, such as those noted previously. Therefore, no revisions to the Draft EIR are warranted.

Response to Comment 6-4:

The comment's support for the Reduced Project Alternative and suggestion that PWD prepare a separate CEQA analysis for the Palmdale Ditch Conversion Project if this project is pursued is noted.

CEQA Guidelines Section 15168 provides the requirements for preparing and utilizing a EIR. CEQA Guidelines Section 15168(b) indicates "If the agency finds that pursuant to Section 15162,

no subsequent EIR would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required. Whether a later activity is within the scope of a program EIR is a factual question that the lead agency determines based on substantial evidence in the record. Factors that an agency may consider in making that determination include, but are not limited to, consistency of the later activity with the ...geographic area analyzed for environmental impacts, and covered infrastructure, as described in the program EIR." CEQA Guidelines Section 15168(c)(5) also states "A program EIR will be most helpful in dealing with later activities if it provides a description of planned activities that would implement the program and deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed project description and analysis of the program, many later activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents would be required." Furthermore, CEQA Guidelines Section 15152(b) indicates "agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects...This approach can eliminate repetitive discussions of the same issues and focus the later EIR or negative declaration on the actual issues ripe for decision at each level of environmental review." It also states "Tiering does not excuse the lead agency from adequately analyzing reasonably foreseeable significant environmental effects of the project and does not justify deferring such analysis to a later tier EIR or negative declaration. However, the level of detail contained in a first tier EIR need not be greater than that of the program, plan, policy, or ordinance being analyzed."

The level of detail at which Project components are analyzed in the Draft EIR corresponds to the level of detail currently available for each Project component. The Palmdale Ditch Conversion Project is currently undergoing 90 percent design; therefore, there is a high degree of information known about this Project component and its potential environmental impacts. As encouraged by CEQA Guidelines Section 15168(c)(4), the Draft EIR deals with the effects of the proposed Program as specifically and comprehensively as feasible at the current stage of planning for each Project component. In addition, to comply with CEQA Guidelines Section 15152(b), PWD has adequately analyzed the reasonably foreseeable significant environmental effects from the Palmdale Ditch Conversion Project instead of deferring such analysis to a later tier EIR or negative declaration. Pursuant to CEQA Guidelines Section 15168(c)(2, 4), PWD may determine later activities (e.g., the Palmdale Ditch Conversion Project) are within the scope of the geographic area and covered infrastructure analyzed in the EIR and that no further environmental documents are required. At this time, PWD anticipates a separate CEQA analysis for the Palmdale Ditch Conversion Project will not be required because a project-level analysis was already conducted in the Draft EIR.

Response to Comment 6-5:

The comment states the Draft EIR states an opinion that the biological resources impact analysis in the Draft EIR related to the Pure Water Antelope Valley Project and rehabilitation and/or replacement of existing wells is speculative because it is not based on site-specific biological surveys and recommends deferring significance findings for individual projects until further

studies are completed in a subsequent or supplemental CEQA document. The comment suggests the Draft EIR disclose the future CEQA actions and public review availability for the Pure Water Antelope Valley Project and rehabilitation and/or replacement of existing wells. The comment requests CDFW be provided with the opportunity to review and comment on any addenda to the Draft EIR.

The Draft EIR has been prepared in accordance with CEQA Guidelines Section 15151, which states "An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible."

CEQA Guidelines Section 15168(c)(5) also states "A program EIR will be most helpful in dealing with later activities if it provides a description of planned activities that would implement the program and deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed project description and analysis of the program, many later activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents would be required." Furthermore, CEQA Guidelines Section 15152(b) indicates "agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects...This approach can eliminate repetitive discussions of the same issues and focus the later EIR or negative declaration on the actual issues ripe for decision at each level of environmental review." It also states "Tiering does not excuse the lead agency from adequately analyzing reasonably foreseeable significant environmental effects of the project and does not justify deferring such analysis to a later tier EIR or negative declaration. However, the level of detail contained in a first tier EIR need not be greater than that of the program, plan, policy, or ordinance being analyzed."

In the case of the proposed Project, programmatic analysis of later activities such as the Pure Water Antelope Valley Project and the rehabilitation and replacement of existing wells is consistent with CEQA's encouragement for tiering of CEQA analysis associated with separate but related projects such as those covered by the proposed Project. The level of detail in the Draft EIR was sufficient for PWD to make a decision on the project "intelligently tak[ing] account of environmental consequences]. The analysis of the Draft EIR was based on substantial evidence available at the time and that the level of detail in the analysis corresponds to the level of detail available in project component design. To comply with CEQA Guidelines Section 15152(b), PWD has adequately analyzed the Pure Water Antelope Valley Project and the rehabilitation and replacement of existing wells' reasonably foreseeable significant environmental effects from the Project. Measures have been incorporated into the Draft EIR to mitigate the reasonably foreseeable impacts associated with these activities and will be incorporated into the future siting and design of the facilities to avoid or mitigate potential impacts with sufficient performance standards to reduce any potential impact. Additionally, subsequent environmental documents will be prepared if any new significant, or substantially more severe significant, impacts are identified as Project component design is refined.

Response to Comment 6-6:

The comment stating an opinion that the mitigation measures pertaining to biological resources within Table ES-2 of the Draft EIR should not have separate requirements for distinct Project components because the Draft EIR is a programmatic planning document and that all mitigation measures be applied to all Project components with the mitigation measures specific to the Palmdale Ditch Conversion Project being handled as a separate tiered CEQA document is noted.

As stated in response to Comment 6-4 and 6-5, the CEQA Guidelines recommend lead agencies streamline CEQA documentation where feasible and capitalize on program environmental documentation to tier project-level environmental analysis when it is prepared in accordance with an overall program (CEQA Guidelines section 15152(b)). As encouraged by CEQA Guidelines Section 15168(c)(4), the Draft EIR deals with the effects of the proposed Program as specifically and comprehensively as feasible at the current stage of planning for each Project component. In addition, to comply with CEQA Guidelines Section 15152(b), PWD has adequately analyzed the reasonably foreseeable significant environmental effects from the Palmdale Ditch Conversion Project instead of deferring such analysis to a later tier EIR or negative declaration. Pursuant to CEQA Guidelines Section 15168(c)(2, 4), PWD may determine later activities (e.g., the Palmdale Ditch Conversion Project) are within the scope of the geographic area and covered infrastructure analyzed in the EIR and that no further environmental documents are required. At this time, PWD anticipates a separate CEQA analysis for the Palmdale Ditch Conversion Project will not be required because a project-level analysis was already conducted in the Draft EIR consistent with the CEQA Guidelines recommendation for streamlined environmental analysis. The Draft EIR sufficiently analyzes and mitigates impacts associated specifically with the Palmdale Ditch Conversion Project as well as the other components associated with the Project. Project components were analyzed for potential environmental effects and mitigated as necessary to reduce all possible significant effects to the extent feasible. Mitigation was specifically crafted to mitigate these particular potential effects and evaluated based on the Project component that could potentially cause the effect. Universally applying mitigation to all components would unnecessarily burden PWD to comply with mitigation measures that do not apply to certain components of the project because there is no potential for significant effect. No changes to the Draft EIR Executive Summary Table ES-2 or mitigation measures are warranted and the analysis and mitigation is sufficient to fully disclose and mitigate potential significant effects.

Response to Comment 6-7:

The comment indicates full avoidance of species will likely be challenging or unlikely due to the Project's scope. The comment states they do not concur with a 1:1 compensatory mitigation ratio will meet the California Endangered Species Act's (CESA) Fully Mitigated Standard. The comment notes that Incidental Take Permits as well as Streambed Alteration Agreement may require higher than a 1:1 ratio for state listed species and riparian habitat, respectively. The comment requests prompt notification if special-status species are found on site to discuss appropriate mitigation. The comment recommends amending Mitigation Measures BIO-2 through BIO-6, BIO-8 through BIO-11, BIO-19, and BIO-20 to allow for higher compensatory

mitigation ratios following coordination with CDFW. The comment offers to review and provide feedback on mitigation language prior to publication of the Final EIR.

Mitigation Measures BIO-2 through BIO-6, BIO-8 through BIO-11, BIO-19, and BIO-20 as presented in the Draft EIR are sufficient to reduce potential impacts to less-than-significant levels under CEQA and to maintain compliance with relevant laws and regulations. Nevertheless, the text of Mitigation Measures BIO-2, BIO-4, BIO-5, BIO-6, BIO-9, BIO-19, and BIO-20 in Section 3.3.3.2, *Mitigation Measures*, of the EIR has been revised to clarify the requirements in response to the comment's recommendations, as shown below. In all relevant instances, mitigation ratio discussions identify a minimum ratio, and coordination with CDFW is included for applicable resources under CDFW's jurisdiction. However, revisions were not incorporated into Mitigation Measures BIO-3, BIO-8, BIO-10 and BIO-11 in response to the comment's recommendations for the following reasons:

- Mitigation Measure BIO-3 includes mitigation for potential impacts to western Joshue tree through the Western Joshua Tree Conservation Act mitigation fee payment and/or relocation and includes consultation with CDFW; as a result, a compensatory mitigation ratio is not appropriate for this mitigation measure.
- Mitigation Measure BIO-8 includes avoidance of nesting Swainson's hawks in compliance with CESA as well as the Migratory Bird Treaty Act and California Fish and Game Code Sections 3503 and 3503.5; as a result, a compensatory mitigation ratio is not appropriate for this mitigation measure.
- Mitigation Measure BIO-10 requires consultation with CDFW for design and location of artificial bat roosts for special-status bats, if deemed necessary, which shall be of comparable size and quality to confirmed or formerly occupied bat roosting habitat destroyed during Project component construction. A compensatory mitigation ratio for the number of artificial bat roosts is not appropriate for this measure because the performance standard is the accommodation of a comparable number of bats.
- Mitigation Measure BIO-11 requires passive relocation of woodrats through "daylighting" of any occupied woodrat middens that may be impacted in Project work areas. A compensatory mitigation ratio is not appropriate for this measure considering that woodrats would move out of harm's way and rebuild middens as necessary in the surrounding areas.

Mitigation Measure BIO-2: Special-Status Plant Surveys, Avoidance Measures, Mitigation and Monitoring Plan

[…]

- Criteria and performance standards by which to measure the success of the mitigation, including replacement of impacted plants at a minimum 1:1 ratio, to be determined in consultation with CDFW if a Lake or Streambed Alteration Agreement pursuant to California Fish and Game Commission (CFGC) Section 1602 or Incidental Take Permit pursuant to CFGC Section 2081 is otherwise required for the Project component;

Mitigation Measure BIO-4: Arroyo Toad, Desert Tortoise, Tricolored Blackbird, and Least Bell's Vireo Avoidance, Minimization and Compensation Measures

[…]

If the proposed Project results in permanent impacts to habitat occupied by special-status wildlife species, United States Fish and Wildlife Service (USFWS) and CDFW shall be consulted to ensure compliance with the Endangered Species Act and/or requirements for avoidance, minimization, or mitigation measures (e.g., replacement of impacted occupied habitat at a minimum 1:1 ratio, to be determined in consultation with USFWS and/or CDFW, as applicable).

Mitigation Measure BIO-5: Crotch's Bumble Bee Avoidance, Minimization, and Compensation Measures

[…]

- If Crotch's bumble bee is determined to be present on the Project component site, floral resources associated with the species that will be removed or damaged by Project component activities in the areas of the Project component site where Crotch's bumble bee is detected and documented shall be replaced at a minimum 1:1 ratio, to be determined in consultation with CDFW as part of the Incidental Take Permit process pursuant to CFGC Section 2081 for the Project component. Planning and implementation of suitable habitat replacement may be integrated into the Habitat Revegetation, Restoration, and Monitoring Program described under Mitigation Measure BIO-19.

Mitigation Measure BIO-6: Burrowing Owl Breeding Season Survey and Foraging Habitat Mitigation

[…]

- Permanent foraging habitat loss shall be mitigated at a minimum 1:1 ratio, to be determined in consultation with CDFW as part of the Incidental Take Permit process pursuant to CFGC Section 2081 for the Project component.

Mitigation Measure BIO-9: Mohave Ground Squirrel Avoidance and Minimization Measures

[…]

- If burrows are identified during the survey that are suspected or known to be occupied by Mohave ground squirrel and cannot be avoided, the qualified biologist shall prepare a Mohave Ground Squirrel Relocation Plan outlining measures to relocate individual Mohave ground squirrels prior to construction start. The plan shall be submitted to PWD and CDFW for review and approval and shall be implemented prior to commencement of Project component activities in work areas with suspected or known Mohave ground squirrel burrows. The Plan shall outline measures for burrow excavation, handling of individuals, identification of proposed relocation areas, and release of relocated

individuals after the conclusion of all grading, clearing, and construction activities. The Plan shall also detail restoration of and/or compensatory mitigation, at a minimum 1:1 ratio, of occupied Mohave ground squirrel habitat that is temporarily or permanently impacted by the Project activities if required by CDFW as part of the Incidental Take Permit process pursuant to CFGC Section 2081 for the Project component. A report documenting relocation activities and outcomes shall be prepared by the qualified biologist and submitted to PWD and CDFW for review and approval after completion of relocation activities.

Mitigation Measure BIO-19: Sensitive Natural Communities and Jurisdictional Features Avoidance, Minimization Measures

[…]

- If impacts to sensitive natural communities cannot be avoided, PWD shall identify compensatory mitigation prior to disturbance of the features. Mitigation may take the form of permittee-responsible, on-site or off-site mitigation or the purchase of credits from an approved mitigation bank or through applicant-sponsored mitigation (e.g., purchase and/or dedication of land for mitigation). If required, compensatory mitigation for unavoidable impacts to sensitive vegetation communities shall be accomplished at a minimum ratio of 1:1; however, the final ratio shall be determined and approved by CDFW if a Lake or Streambed Alteration Agreement pursuant to CFGC Section 1602 or Incidental Take Permit pursuant to CFGC Section 2081 is required for the Project component.

Mitigation Measure BIO-20: Aquatic Resources Delineation and Compensatory Mitigation

[…]

- If impacts to jurisdictional waters and wetlands cannot be avoided, PWD shall identify compensatory mitigation prior to disturbance of the features. Compensatory mitigation for impacts to the jurisdictional extents of the Palmdale Ditch shall be provided at a minimum 0.5:1 ratio, unless a higher ratio is required by Lahontan Regional Water Quality Control Board (RWQCB), CDFW, and/or United States Army Corps of Engineers (USACE), given the Ditch's altered hydrology as a manmade structure constructed entirely in uplands that is artificially lined in a number of areas (concrete, synthetic liner, elevated flume) and its controlled flow that fluctuates in quantity and timing from year to year depending on annual climatic conditions and available water supply in Littlerock Reservoir. Compensatory mitigation for impacts to other jurisdictional waters and wetlands shall be provided at a minimum 1:1 ratio, unless a higher ratio is required by Lahontan RWQCB, CDFW, and/or USACE.

Response to Comment 6-8:

The comment recommends mitigation measures for arroyo toad, desert tortoise, tricolored blackbird, and least Bell's vireo be separate and distinct measures by species with species-specific language, avoidance measures, compensatory mitigation, and permitting obligations rather than consolidated into one measure.

Mitigation Measure BIO-4 as presented in the Draft EIR is sufficient to reduce potential impacts to arroyo toad, desert tortoise, tricolored blackbird, and least Bell's vireo to less-than-significant levels under CEQA. This mitigation measure includes species-specific language (including references to the appropriate, species-specific survey protocols), avoidance measures, mitigation, and permitting obligations (including a requirement to consult with USFWS and CDFW). The mitigation measure language allows for flexibility in implementing species-specific avoidance and mitigation measures, depending on which species are identified as present within each Project component site) if avoidance of special-status wildlife species is not feasible. Parsing them into separate measures would not change the effectiveness of the measure. Additionally, the Project will comply with all applicable laws and regulations including the permitting obligations set forth through consultation. Compliance with existing laws and regulations is a part of the Project baseline analyzed and does not require additional mitigation.

Response to Comment 6-9:

The comment recommends modifications to Mitigation Measure BIO-17.

Mitigation Measure BIO-17 as presented in the Draft EIR is sufficient to reduce potential impacts to nesting birds to less-than-significant levels under CEQA and maintains compliance with existing regulatory requirements of the Migratory Bird Treaty Act and California Fish and Game Code. Nevertheless, to clarify this measure, some of the comment's recommended revisions have been incorporated into the text of this Mitigation Measure BIO-17 in Section 3.3.3.2, *Mitigation Measures*, of the Draft EIR, as shown below. However, the comment's request to remove the distinction between the Palmdale Ditch Conversion project and other Project components was not incorporated because it would have rendered the Mitigation Measure BIO-17 inapplicable to the Palmdale Ditch Conversion project, which is not subject to Mitigation Measure BIO-1. The comment's request to remove certain phrases (e.g., "to the extent practicable," "in each work area," "if Project component activities must occur within the buffer, they shall only be conducted at the discretion of the qualified biologist") were not incorporated because this language provides necessary flexibility for: (a) construction to occur during the nesting bird season, if needed; (b) work areas to be treated separately for the purposes of mitigation measure implementation if they are spatially or temporally distinct and separate from one another; and (c) the qualified biologist to exercise professional judgment in the field regarding appropriate buffers for nesting birds based on species sensitivity, work activity, and ambient conditions.

Mitigation Measure BIO-17: Nesting Bird Surveys and Avoidance and Minimization Measures

This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for nesting birds is identified during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. Project component construction activities shall occur outside of the bird breeding season (February 1 to August 31) to the extent practicable. If construction must commence within the bird breeding season, PWD shall retain a qualified biologist to conduct a pre-construction nesting bird survey within the disturbance footprint plus a minimum buffer of 100 feet to a maximum buffer of 500 feet depending on species, work activity, and existing ambient conditions ~~100-foot buffer (300 feet for raptors), where feasible,~~ no more than seven days prior to initiation of ground disturbance (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation) in each work area. If the Project component is phased or construction activities stop for more than one week, a subsequent pre-construction nesting bird survey shall be conducted prior to each phase of construction, if initiated during the bird breeding season.

Pre-construction nesting bird surveys shall be conducted during the time of day when birds are active and shall factor in sufficient time to perform this survey adequately and completely. A brief report of the nesting bird survey results, if applicable, shall be submitted to PWD for review and approval prior to ground disturbance and/or vegetation removal activities.

If no nesting birds are observed during pre-construction surveys, no further action is required. If nests are found, an appropriate avoidance buffer of up to 300 feet ~~ranging in size from 25 to 50 feet~~ for passerine (perching birds) nests and up to 500 ~~300~~ feet for active, non-listed raptor nests ~~(depending on the species and the proposed work activity)~~ shall be determined by the qualified biologist and demarcated with bright orange construction fencing or other suitable flagging. Active nests shall be monitored at a minimum of once per week until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or parental care for survival. No construction activity shall occur within this buffer until the qualified biologist confirms the breeding/nesting is completed and all the young have fledged. If Project component activities must occur within the buffer, they shall only be conducted at the discretion of the qualified biologist.

Response to Comment 6-10:

The comment states an opinion that the Draft EIR does not discuss hydrology or provide any technical study to demonstrate the hydrology pattern of surrounding drainage systems upon completion of the Palmdale Ditch Conversion Project. The comment recommends PWD provide a hydrological study and basis of design report that evaluates water and sediment flow through the Ditch during various storm events and the impacts of enclosing the Ditch on local drainages and outlines the expected post-project hydrology.

Impacts to hydrology are discussed in Section 3.8, *Hydrology, Groundwater, and Water Quality*, of the Draft EIR. Impacts specifically to drainage pattern alteration as it pertains to erosion,

siltation, surface runoff, and flooding are evaluated under Impact HYD-3a through Impact HYD-3d on pages 3.8-21 to 3.8-31. As indicated throughout the discussion (e.g., pages 3.8-24 to 3.8-25, 3.8-27, and 3.8-28), "the Palmdale Ditch Conversion project would increase the amount of pervious surfaces within the Project area compared to existing conditions. Along segments of the Ditch where the pipeline is placed in the existing Ditch alignment, the Ditch would be backfilled, and minor site grading would be conducted to tie in drainage patterns above the pipeline to existing natural contours adjacent to the alignment. The remaining Ditch segments may either be left in place and continue to function as part of the drainage pattern of the immediate vicinity or be backfilled with the natural overland drainage courses restored to their natural state. The existing Ditch has a conveyance capacity of approximately 20 cubic-feet-per-second, which is approximately 23 percent of the two-year design storm and approximately 0.2 percent of the 100-year design storm for the approximately eight-square-mile area that drains towards the Ditch. Conversion of the Ditch to an underground pipeline is expected to increase surface flows of stormwater to downstream tributaries (which currently receive runoff during storm events) by approximately 1.6 percent, which would be minimal and would not substantially increase flooding on- or off-site (Hazen & Sawyer 2024)." The analysis concludes construction and operation of the Palmdale Ditch Conversion project would not 1) substantially alter the existing drainage pattern in a manner which would result in substantial erosion or siltation on- or off-site; 2) substantially alter the existing drainage pattern in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; 3) substantially alter the existing drainage pattern in a manner which would 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; or 4) substantially alter the existing drainage pattern in a manner which impedes or redirects flood flows. Impacts related to drainage pattern alteration resulting from the Palmdale Ditch Conversion project were determined by the Draft EIR to be less than significant under Impacts HYD-3a through 3d. Therefore, no additional analysis of the hydrological impacts of the Palmdale Ditch Conversion project in the Draft EIR is warranted.

Response to Comment 6-11:

The comment states the requirements for Fully Protected Species and indicates CDFW cannot authorize take for golden eagle (*Aquila chrysaetos*) or desert bighorn sheep (*Ovis canadensis nelsoni*). The comment states PWD must completely avoid impacts to these species during construction and operational activities for Project components.

This comment is noted. As described in *Impact BIO-1 Analysis*, in Section 3.3.3.4, *Impacts and Mitigation Measures*, of the Draft EIR (page 3.3-56), although there is moderate or high potential for golden eagle to forage within the Project area, it is not expected to nest in the Project area due to the lack of suitable nesting habitat. Therefore, take of golden eagle is not expected. Potential Project impacts to desert bighorn sheep are not addressed in the Draft EIR because there are no documented records of the species in the California Natural Diversity Database

(CNDDB) within the standard nine-quadrangle search area used for the Project (as described in Section 3.3.1.1, *Methodology for Establishing Environmental Setting*, of the Draft EIR). Regardless, take of desert bighorn sheep is not expected given the ability of this highly mobile species to move out of harm's way. PWD would be required by law to comply with the requirements for Fully Protected Species during implementation of the proposed Project.

Response to Comment 6-12:

The comment recommends removing the in-lieu fee prices from Mitigation Measure BIO-3 given that rates associated with the Western Joshua Tree Conservation Act may change prior to an invoice payment.

Mitigation Measure BIO-3 as presented in the Draft EIR is sufficient to reduce potential impacts to western Joshua to less-than-significant levels under CEQA and to maintain compliance with the Western Joshua Tree Conservation Act and/or CESA. Nevertheless, to clarify this measure, the comment's recommended revisions have been incorporated into the text of this mitigation measure in Section 3.3.3.2, *Mitigation Measures*, of the EIR, as shown below.

> **Mitigation Measure BIO-3: Joshua Tree Census Survey, Avoidance, Minimization, and Compensation Measures**
>
> […]
>
> - PWD shall submit payment of an in-lieu fee to CDFW pursuant to CDFW's standard mitigation fee structure for western Joshua tree in effect at the time of application for an Incidental Take Permit. ~~The current (2024) standard mitigation fee structure is as follows:~~
>   - ~~Trees five meters or greater in height - $2,500 per tree~~
>   - ~~Trees one meter or greater but less than 5 meters in height - $500 per tree~~
>   - ~~Trees less than one meter in height - $340 per tree~~

Response to Comment 6-13:

The comment recommends PWD consult with CDFW to obtain appropriate take authorization if the Project would result in the take of a species designated as endangered or threatened, or a candidate for listing under CESA; summarizes key requirements for an Incidental Take Permit; and recommends early consultation with CDFW.

This comment is noted. PWD is consulting with CDFW to obtain appropriate take authorizations for the Palmdale Ditch Conversion Project for potential take of western Joshua tree (*Yucca brevifolia*; protected under the Western Joshua Tree Conservation Act and a candidate threatened species under CESA) and Crotch's bumble bee (*Bombus crotchii*; candidate endangered species under CESA). PWD would consult with CDFW and apply for take authorizations for other Project components analyzed in the Draft EIR, if determined necessary.

Response to Comment 6-14:

The comment recommends engaging in consultation with the USFWS to comply with the federal Endangered Species Act (ESA) prior to Project construction and operational activities that may adversely impact ESA-listed or candidate species.

The comment is noted. The United States Bureau of Reclamation (the lead federal action agency for the Palmdale Ditch Conversion Project) is proceeding to fulfill their obligations to comply with the federal ESA. If other Project components analyzed in the Draft EIR have a federal nexus or would potentially result in adverse effects to federally listed species, PWD would fulfill necessary obligations under the federal ESA for those Project components in coordination with the lead federal action agency(ies) and/or the USFWS.

Response to Comment 6-15:

The comment recommends updating the mitigation measures for biological resources in the Draft EIR to include their suggested measures and indicates they have provided a summary of their suggested mitigation measures and recommendations in a Mitigation Monitoring and Reporting Plan included as an attachment to their letter.

This comment is noted. Please refer to Responses 6-3 through -14 for discussions on the comment's suggested mitigation measures and other recommendations. A Mitigation Monitoring and Reporting Plan has been prepared for the Project and is included as **Appendix A** to the Final EIR.

Response to Comment 6-16:

The comment states the requirements for reporting observations of special status species and sensitive natural communities and requests submittal of observation data to the CNDDB should any special status species be detected and provides guidance for submittal.

In accordance with the requirements of Public Resources Code Section 21003(e), all observations of special status species would be recorded on CNDDB field sheets and sent to CDFW. PWD also intends to submit information on special status native plant populations and sensitive natural communities via CDFW's Combined Rapid Assessment and Relevé Form. All Crotch's bumble bee observations for the Palmdale Ditch Conversion Project were submitted to the CNDDB on September 3, 2024 as required in the *CDFW Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (2023) (Rincon Consultants, Inc. 2024). All short-joint beavertail (*Opuntia basilaris* var. *brachyclada*) observations for the Palmdale Ditch Conversion Project were also submitted to the CNDDB on November 13, 2024.

Response to Comment 6-17:

The comment stating CDFW's filing fee requirements are required is noted. PWD would be required by law to pay all appropriate CDFW filing fees upon filing the Notice of Determination.

Response to Comment 6-18:

The comment requests the opportunity to review and comment on responses to their comments, requests notification of future public hearings on the project, and provides their contact information.

This comment is noted. PWD will provide CDFW with a copy of these responses to comments prior to consideration of the Final EIR by the PWD Board of Directors and will notify CDFW of future public hearings associated with the Project.

Comment Letter 7

State Water Resources Control Board

November 12, 2024

Scott Rogers
Palmdale Water District
2029 E Avenue Q
Palmdale, CA 93550

PALMDALE WATER DISTRICT (WATER SYSTEM), ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE 2023 STRATEGIC WATER RESOURCES PLAN DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT PROJECT (PROJECT); STATE CLEARINGHOUSE # 2023080290

Dear Scott Rogers:

Thank you for the opportunity to review the EIR for the proposed Project. The State Water Resources Control Board, Division of Drinking Water (State Water Board, DDW) is responsible for issuing water supply permits pursuant to the Safe Drinking Water Act. This Project is within the jurisdiction of the State Water Board, DDW's Hollywood District. DDW Hollywood District issues domestic water supply permit amendments to public water systems pursuant to Waterworks Standards (Title 22 California Code of Regulations [Cal Code Regs.] chapter 16 et. seq.). A public water system requires a water supply permit amendment when changes are made to a domestic water supply source, storage, or treatment and for the operation of new water system components- as specified in the Cal. Code Regs. § 64556. 7-1

The State Water Board, DDW, as a responsible agency under the California Environmental Quality Act (CEQA), has the following comments on the Water System's EIR: 7-2

- The Water System may need to apply for a domestic water supply permit amendment from the State Water Resources Control Board, Division of Drinking Water for new sources of supply. Please add the agency and the permit to section 2.5.9 Anticipated Permits and Approvals, Table 2-7, Regulatory Requirements and Authorizations and Approvals (PDF page 110).
- The Water System may replace five wells in the near term (PDF page 105) but provides conflicting accounts of where these wells will be located (PDF pages 79, 85,105, 382, et cetera). In the Project Description and figures, please describe all the proposed and possible areas where the rehabilitated and replacement wells could be located. 7-3

When the CEQA review process is completed, please forward the following items with the permit application to the State Water Board, DDW Hollywood District Office at DWPDIST07@waterboards.ca.gov:

- Copy of the EIR and Mitigation Monitoring and Reporting Plan (MMRP);
- Copy of all comment letters received and the lead agency responses as appropriate;
- Copy of the Resolution or Board Minutes certifying the EIR and adopting the MMRP; and
- Copy of the date stamped Notice of Determination filed at the Los Angeles County Clerk's Office and the Governor's Office of Planning and Research, State Clearinghouse.

7-4

Please contact Lori Schmitz of the State Water Board at (916) 449-5285 or Lori.Schmitz@waterboards.ca.gov, for questions regarding this comment letter.

Sincerely,

Lori Schmitz

Digitally signed by Lori Schmitz
Date: 2024.11.12 15:04:41 -08'00'

Water Boards

Lori Schmitz
Environmental Scientist
Division of Financial Assistance
Special Project Review Unit
1001 I Street, 16th floor
Sacramento, CA 95814

Cc:

Office of Planning and Research, State Clearinghouse

Dmitriy Ginzburg
District Engineer
Hollywood District

Milagros Alora
Sanitary Engineer
Hollywood District

RESPONSE TO COMMENT LETTER 7

State Water Resources Control Board, Lori Schmitz, Environmental Scientist

Response to Comment 7-1:

PWD acknowledges the State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW) is responsible for issuing water supply permits pursuant to the Safe Drinking Water Act as illustrated in Table 2-7 of the Draft EIR. PWD recognizes the proposed Project is within DDW's jurisdiction in Hollywood and would require a water supply permit amendment if changes to a domestic water supply source, storage, or treatment are required or if there is operation of new water system components.

Response to Comment 7-2:

The comment notes that the water system may need to apply for a domestic water supply permit amendment from the SWRCB, DDW for new sources of supply. The comment requests adding the water supply permit amendment to Table 2-7: Regulatory Requirements and Authorizations and Approvals.

The SWRCB requirements in Table 2-7: Regulatory Requirements and Authorizations and Approvals were updated to reflect this required easement as follows:

Agency	Type of Approval	Water Supply Element
State Water Resources Control Board	Approval of the Stormwater Pollution Prevention Plan (SWPPP) under the statewide National Pollution Discharge Elimination System (NPDES) Construction General Permit	Local Supplies – Palmdale Ditch Conversion
State Water Resources Control Board	Water Supply Permit Amendment	Recycled Water – Pure Water Antelope Valley

Response to Comment 7-3:

As described on page 2-15 within the Draft EIR Project Description Section 2.5.3.1 Existing Wells Rehabilitation or Replacement well rehabilitation and replacement within the proposed Project and considered in the SWRP is based on the conclusion and recommendations of the 2020 Well Rehabilitation Prioritization Program. As stated within this Draft EIR section the north wellfield (also known as pressure zone 2800) was recommended as an area known for high groundwater production rates, however, the placement of the replacement wells would be determined as the well is sited and designed at optimal locations within PWD district boundaries. As described, wells will be rehabilitated as identified and prioritized in the 2020 Well Rehabilitation Prioritization Program at or adjacent to the existing well sites.

CEQA Guidelines Section 15168 provides the requirements for preparing and utilizing a EIR. CEQA Guidelines Section 15168(b) indicates "If the agency finds that pursuant to Section 15162, no subsequent EIR would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required. Whether a later activity is within the scope of a program EIR is a factual question that the lead agency determines based on substantial evidence in the record. Factors that an agency may consider in making that determination include, but are not limited to, consistency of the later activity with the ...geographic area analyzed for environmental impacts, and covered infrastructure, as described in the program EIR." CEQA Guidelines Section 15168(c)(5) also states "A program EIR will be most helpful in dealing with later activities if it provides a description of planned activities that would implement the program and deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed project description and analysis of the program, many later activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents would be required." Furthermore, CEQA Guidelines Section 15152(b) indicates "agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects...This approach can eliminate repetitive discussions of the same issues and focus the later EIR or negative declaration on the actual issues ripe for decision at each level of environmental review." It also states "Tiering does not excuse the lead agency from adequately analyzing reasonably foreseeable significant environmental effects of the project and does not justify deferring such analysis to a later tier EIR or negative declaration. However, the level of detail contained in a first tier EIR need not be greater than that of the program, plan, policy, or ordinance being analyzed."

Due to the need for flexibility in location of rehabilitation and replacement wells the associated impacts were assessed programmatically within the Draft EIR and beyond illustrating existing well locations of the figures should be assumed to occur within the boundaries of PWD service area. As PWD advances the well replacement projects, they will be further evaluated once locations are selected to determine if there are any site-specific impacts that vary or are greater than those evaluated programmatically within the Draft EIR. If additional impacts are identified at that time, further environmental review will be conducted specific to the exact location of the replacement well. The following sentence has been added for clarification to the second paragraph on page 2-15 of Chapter 2 Project Description:

> ...The 2020 Well Rehabilitation Prioritization Program noted that a well site assessment and preliminary design had been completed on two potential new replacement production wells, designated Well 36 and 37, which would be situated in the north wellfield (pressure zone 2800). However, siting of wells will take into account a number of factors including groundwater production rates, district owned facilities, potential environmental effects, cost, and other engineering factors and may occur anywhere within the PWD boundaries. No CEQA documentation was prepared for the 2020 Well Rehabilitation Prioritization Program.

Response to Comment 7-4:

PWD appreciates the information provided regarding necessary information required to accompany the permit application. PWD will plan to submit the permit application to SWRCB, DDW Hollywood District Office along with a copy of the EIR and MMRP, copy of all comment letters received and responses, copy of the resolution of Board minutes certifying the EIR and adopting the MMRP, and copy of the date stamped Notice of Determination filed at the Los Angeles County Clerk's Office and the Governor's Office of Planning Research, State Clearinghouse once the CEQA review process is complete.

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 897- 0673
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TTY 711
www.dot.ca.gov

Comment Letter 8

Making Conservation a California Way of Life

November 8, 2024

Scott Rogers, Engineering Manager
Palmdale Water District
2029 E Avenue Q
Palmdale, CA 93550

RE: 2023 Strategic Water Resources Plan Draft Program Environmental Impact Report– Draft Environmental Impact Report (DEIR)
SCH #2023080290
GTS #07-LA-2023-04639
Vic. LA Multiple

Dear Scott Rogers,

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The Palmdale Water District (PWD) has updated its Strategic Water Resources Plan (SWRP) to reevaluate PWD's ability to meet the demands of both current and future customers through the year 2050. The SWRP Update, completed in June 2023, analyzes PWD's current mix of water sources, which includes groundwater, surface water, imported water, and recycled water, to find the best way to meet the needs of a growing population under changing future conditions. A Preferred Strategy was identified that optimizes PWD's mix of water sources up to the year 2050. The Preferred Strategy, referred to as the 'proposed Project', includes proposed actions that make the most of local water supplies and facilities and increase water storage in the Antelope Valley Groundwater Basin. 8-1

After reviewing the DEIR, Caltrans has the following comments:

Caltrans concurs with Mitigation Measure TRA-1: Traffic Control Plan from the Initial Study. Prior to construction, PWD shall require its construction contractor(s) to prepare and implement a Traffic Control Plan, to be approved by the City of Palmdale and/or the County of Los Angeles, based on jurisdiction. The plan shall include traffic counts at intersections near the proposed Project facilities to determine existing traffic conditions. Based on these traffic counts, the plan shall recommend mitigation to minimize impacts 8-2

"Provide a safe and reliable transportation network that serves all people and respects the environment"

to existing traffic conditions. The plan shall also include provisions for traffic control measures including barricades, warning signs, cones, lights, and flag persons, to allow safe circulation of vehicle, bicycle, pedestrian, and emergency response traffic.

Any transportation of heavy construction equipment and/or materials that requires the use of oversized transport vehicles on State Highways will require a Caltrans transportation permit. Caltrans recommends limiting construction traffic to off-peak periods to minimize the potential impact on State facilities. If construction traffic is expected to cause issues on any State facilities, please submit a construction traffic control plan detailing these issues for Caltrans' review. We look forward to the coordination of our efforts to ensure potential impacts to the highway facilities and traveling public are discussed and addressed before work begins.

8-3

8-4

If you have any questions, please contact project coordinator Frances Duong, at frances.duong@dot.ca.gov and refer to GTS #07-LA-2023-04639.

Sincerely,

Anthony Higgins

Anthony Higgins
Acting LDR/CEQA Branch Chief

Cc: State Clearinghouse

RESPONSE TO COMMENT LETTER 8

Department of Transportation, Anthony Higgins, Acting LDR/CEQA Branch Chief

Response to Comment 8-1:

PWD would like to thank the comment for their time and consideration in submitting a comment letter for the proposed Project.

Response to Comment 8-2:

PWD acknowledges the comment's support with Mitigation Measure TRA-1: Traffic Control Plan.

Response to Comment 8-3:

The text of Table 2-7 was revised to include a Caltrans transportation permit based on the comment that any transportation of heavy construction equipment and/or materials that requires the use of oversized transport vehicles on State Highways will require a Caltrans transportation permit.

On page 2-38 of the Draft EIR the following was added to Table 2-7: Regulatory Requirements and Authorizations and Approvals was updated to reflect this required permit.

Agency	Type of Approval	Water Supply Element
California Department of Transportation	Transportation Permit and construction control plan	All

Response to Comment 8-4:

PWD acknowledges the comment and will submit a construction control plan to Caltrans if applicable. The revision of Draft EIR Table 2-7 in the previous response addresses this comment.

Comment Letter 9

From: Reyes, Joy <jreyes@cityoflancasterca.gov>
Sent: Tuesday, November 12, 2024 8:40 AM
To: Scott Rogers <srogers@palmdalewater.org>
Cc: Diaz, Marissa <mdiaz@cityoflancasterca.gov>
Subject: FW: Public Review of Draft Environmental Impact Report for the 2023 Strategic Water Resources Plan Update – Palmdale Water District

Good morning Mr. Rogers

On behalf of the City of Lancaster Public Works Director Marissa Diaz, please be advised the City has no comment on this Draft EIR. 9-1

Thank you,

Joy Reyes
Sr. Administrative Assistant – PW Administration

City of Lancaster
44933 Fern Ave. | Lancaster, CA 93534
T 661.723.6107
jreyes@cityoflancasterca.gov | cityoflancasterca.gov

Creating a better tomorrow. Together.

1

RESPONSE TO COMMENT LETTER 9

City of Lancaster, Joy Reyes, Senior Administrative Assistant

Response to Comment 9-1:

This comment is noted. PWD would like to thank the comment for their time and consideration.

Comment Letter 10

TRIBAL HISTORIC PRESERVATION OFFICE

VIA ELECTRONIC MAIL

srogers@palmdalewater.org

Scott Rogers,
Engineering Manager
Palmdale Water District
2029 E Avenue Q, Palmdale,
CA 93550

MORONGO BAND OF MISSION INDIANS
A SOVEREIGN NATION

November 11, 2024

RE: **AB-52 Consultation for Palmdale Water District 2023 Strategic Water Resources Plan (SWRP) Draft EIR**

The Morongo Band of Mission Indians (Tribe/MBMI) Tribal Historic Preservation Office received the City of Palmdale (City) letter regarding the above referenced project on September 30, 2024. The proposed Strategic Water Resource Plan (SWRP) (Project) is located within the ancestral territory and traditional use area of the Cahuilla and Serrano people of the Morongo Band of Mission Indians.

Tribal cultural resources are non-renewable resources and therefore of high importance to the Morongo Tribe, therefore, tribal participation (a.k.a. tribal monitors) is recommended during all ground disturbing activities. We look forward to working with the City to protect these irreplaceable resources out of respect for ancestors of the Morongo people who left them there, and for the people of today and for generations to come. 10-1

Projects within this area are sensitive for cultural resources regardless of the presence or absence of remaining surface artifacts and features. Tribal cultural resources are non-renewable resources and therefore of high importance to the Morongo Tribe and tribal participation (a.k.a. Tribal Monitors) is requested by MBMI THPO during all ground disturbing activities. 10-2

After reviewing the DEIR, there are several concerns that the Tribe has with the "Ethnographic Setting" section (3.4.1.5) and the "Impacts and Mitigation Measures" section (3.4.3.3). These concerns include:

Ethnographic Setting:

1. On page 3.4-7 of the DEIR, the "Vanyumé" are mentioned as inhabiting the southeastern portion of the Valley, including the Mojave River. The Vanyumé are the desert division of the Serrano; they were first mentioned an the "Beñemé" by Father Francisco Garcés in 1776. Later, the ethnic designation Vanyumé was adopted by Kroeber who mistranslated the name. Sutton and Earle (2017) discuss the relationship between the Mountain and Desert divisions of the Serrano at depth, suggesting that they are two divisions of the Serrano proper, not independent political, linguistic, or cultural entities (Earle 1997). In order to accurately represent the prehistory of the area, the "Ethnographic Setting" section of the DEIR should edit this section to better represent the two Serrano divisions, rather than just mentioning the Vanyumé *once* as inhabiting a specific portion of the Valley. 10-3

Impact and Mitigation Measures:

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1. The retention and participation of a Tribal Monitor in the event that any inadvertent discoveries are made. See MBMI CR-6. 10-4
2. The treatment and disposition of inadvertent discoveries. See MBMI CR-6, A-D. 10-5
3. The treatment of inadvertently discovered human remains. Most importantly, including the security that **no photographs are to be taken except by the coroner, with written approval by the consulting Tribe[s].** See MBMI CR-7, A-D. 10-6
4. A final report(s) created as part of the project shall be submitted to the Lead Agency and Consulting Tribe(s) for review and comment. 10-7

Other Comments/Concerns:

1. In the "Prehistoric Setting" (3.4.1.3), please avoid describing local groups that inhabited the landscape as "Tribe(s)." During these periods, these groups are not known as "Tribe(s);" a better term might be "local groups." 10-8
2. When mentioning specific sites located in the Antelope Valley, for example, Lovejoy Springs (mentioned on page 3.4-3), please include the trinomial of the site. Lovejoy Springs' trinomial is CA-LAN-192. 10-9
3. The citation for Price et al. should have the corresponding date of 2009, not 2008. 10-10
4. Robinson (1977:47) is the first to suggest that the local groups which inhabited the Antelope Valley occupied a central geographical location. These groups were a "central point of contact between four major centers of cultural development in central and southern California;" this included Shoshonean people of the desert proper to the east, the Yokuts to the north, the Chumash to the west, and the Gabrieliño to the south. 10-11

We look forward to working with the City to protect these irreplaceable resources out of respect for ancestors of the Morongo people who left them there, and for the people of today and for generations to come. 10-12

Please see the following Mitigation Measures to be included in the Project Environmental Document:

Cultural Resource Mitigation Measures:

CR-1: Tribal Monitoring Services Agreement Prior to the issuance of grading permits, the applicant shall enter into a Tribal Monitoring Services Agreement with the Morongo Band of Mission Indians (MBMI) for the Project. The Tribal Monitor shall be on-site during all ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind). The Tribal Monitor shall have the authority to temporarily divert, redirect, or halt the ground-disturbing activities to allow identification, evaluation, and potential recovery of cultural resources. 10-13

CR-2: Retention of Archaeologist Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind), and prior to the issuance of grading permits, the Applicant shall retain a Qualified Archaeologist who meets the U.S. Secretary of the Interior Standards (SOI). The Archaeologist shall be present during all ground disturbing activities to identify any known or suspected archaeological and/or cultural resources. The Archaeologist will conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe[s] Tribal Historic Preservation Officer (THPO), and/or designated Tribal Representative. The training session will focus on the archaeological and tribal cultural resources that may be encountered during ground-disturbing activities as well as the procedures to be followed in such an event. 10-14

CR-3: Cultural Resource Management Plan Prior to any ground-disturbing activities the project Archaeologist shall develop a Cultural Resource Management Plan (CRMP) and/or Archaeological

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Monitoring and Treatment Plan (AMTP) to address the details, timing, and responsibilities of all archaeological and cultural resource activities that occur on the project site. This Plan shall be written in consultation with the consulting Tribe[s] and shall include the following: approved Mitigation Measures (MM)/Conditions of Approval (COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM or COA, and an overview of the project schedule. 10-14

CR-4: Pre-Grade Meeting The retained Qualified Archeologist and Consulting Tribe[s] representative shall attend the pre-grade meeting with the grading contractors to explain and coordinate the requirements of the monitoring plan. 10-15

CR-5: On-site Monitoring During all ground-disturbing activities the Qualified Archaeologist and the Tribal Monitor shall be on-site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and Tribal Monitoring will be discontinued when the depth of grading and the soil conditions no longer retain the potential to contain cultural deposits. The Qualified Archaeologist, in consultation with the Tribal Monitor, shall be responsible for determining the duration and frequency of monitoring. 10-16

CR-6: Inadvertent Discovery of Cultural Resources In the event that previously unidentified cultural resources are unearthed during construction, the Qualified Archaeologist and the Tribal Monitor shall have the authority to temporarily divert and/or temporarily halt ground-disturbance operations in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

If a potentially significant cultural resource(s) is discovered, work shall stop within a 60-foot perimeter of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. All work shall be diverted away from the vicinity of the find, so that the find can be evaluated by the Qualified Archaeologist and Tribal Monitor[s]. The Archaeologist shall notify the Lead Agency and consulting Tribe[s] of said discovery. The Qualified Archaeologist, in consultation with the Lead Agency, the consulting Tribe[s], and the Tribal Monitor, shall determine the significance of the discovered resource. A recommendation for the treatment and disposition of the Tribal Cultural Resource shall be made by the Qualified Archaeologist in consultation with the Tribe[s] and the Tribal Monitor[s] and be submitted to the Lead Agency for review and approval. Below are the possible treatments and dispositions of significant cultural resources in order of CEQA preference: 10-17

A. Full avoidance.

B. If avoidance is not feasible, Preservation in place.

C. If Preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or Deed Restriction

D. If all other options are proven to be infeasible, data recovery through excavation and then curation in a Curation Facility that meets the Federal Curation Standards (CFR 79.1)

CR-7: Inadvertent Discovery of Human Remains The Morongo Band of Mission Indians requests the following specific conditions to be imposed in order to protect Native American human remains and/or cremations. **No photographs are to be taken except by the coroner, with written approval by the consulting Tribe[s].** 10-18

A. Should human remains and/or cremations be encountered on the surface or during any and all ground-disturbing activities (i.e., clearing, grubbing, tree and bush removal, grading, trenching,

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TRIBAL HISTORIC PRESERVATION OFFICE

fence post placement and removal, construction excavation, excavation for all water supply, electrical, and irrigation lines, and landscaping phases of any kind), work in the immediate vicinity of the discovery shall immediately stop within a 100-foot perimeter of the discovery. The area shall be protected; project personnel/observers will be restricted. The County Coroner is to be contacted within 24 hours of discovery. The County Coroner has 48 hours to make his/her determination pursuant to State and Safety Code §7050.5. and Public Resources Code (PRC) § 5097.98.

10-18

B. In the event that the human remains and/or cremations are identified as Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours of determination pursuant to subdivision (c) of HSC §7050.5.

C. The Native American Heritage Commission shall immediately notify the person or persons it believes to be the Most Likely Descendant (MLD). The MLD has 48 hours, upon being granted access to the Project site, to inspect the site of discovery and make his/her recommendation for final treatment and disposition, with appropriate dignity, of the remains and all associated grave goods pursuant to PRC §5097.98

D. If the Morongo Band of Mission Indians has been named the Most Likely Descendant (MLD), the Tribe may wish to rebury the human remains and/or cremation and sacred items in their place of discovery with no further disturbance where they will reside in perpetuity. The place(s) of reburial will not be disclosed by any party and is exempt from the California Public Records Act (California Government Code § 6254[r]). Reburial location of human remains and/or cremations will be determined by the Tribe's Most Likely Descendant (MLD), the landowner, and the City Planning Department.

CR-8: FINAL REPORT: The final report[s] created as a part of the project (AMTP, isolate records, site records, survey reports, testing reports, etc.) shall be submitted to the Lead Agency and Consulting Tribe[s] for review and comment. After approval of all parties, the final reports are to be submitted to the appropriate Information Center, and the Consulting Tribe[s].

10-19

This letter does not conclude consultation. Upon review of the requested Measures the MBMI THPO may further provide recommendations or guidance.

10-20

The lead contact for this Project is Bernadette Ann Brierty, Tribal Historic Preservation Officer (THPO). MBMI Tribal Archaeologist, Sarah Bertman will be assisting the Tribe in the review of this project. Please do not hesitate to contact us at ABrierty@morongo-nsn.gov, THPO@morongo-nsn.gov, sbertman@morongo-nsn.gov or (951) 663-2842, should you have any questions. The Tribe looks forward to meaningful government-to-government consultation with the City.

Respectfully,

Bernadette Ann Brierty

Bernadette Ann Brierty
Tribal Historic Preservation Officer
Morongo Band of Mission Indians

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RESPONSE TO COMMENT LETTER 10

Morongo Band of Mission Indians, Bernadette Ann Brierty, Tribal Historic Preservation Officer

Response to Comment 10-1:

PWD acknowledges that the proposed Project is located within the ancestral territory and traditional use area of the Cahuilla and Serrano people of the Morongo Band of Mission Indians (MBMI). As indicated in Mitigation Measure TCR-1: Native American Resources Monitoring, full-time Tribal monitoring shall be conducted for ground-disturbing activities unless the Qualified Archaeologist has established as part of the archaeological assessment that previous disturbances have reduced the sensitivity to the extent that Tribal monitoring is not warranted. With respect to all tribes and groups who have engaged with the District on the Project the District will work with consulting tribes to equitably select tribal monitors on each individual component of the proposed Project. Further response to monitoring is discussed in comment 10-13

Response to Comment 10-2:

PWD acknowledges the comment indicating that project is within the ancestral territory are sensitive for cultural resources regardless of the present or absence of remaining surface artifacts. Please refer to response to Comment 10-1 regarding response to requests Tribal monitoring during all ground-disturbing activities.

Response to Comment 10-3:

As requested, Section 3.4.1.5 Ethnographic Setting has been edited to better present the two Serrano divisions, rather than just mention the Vanyumé once as inhabiting a specific portion of the Valley.

Text in Section 3.4.1.5 Ethnographic Setting om page 3.4-7 has been edited.

> At the time of European contact, numerous groups occupied the area in and surrounding the Antelope Valley. The southeastern portion of the Valley, around the Mojave River, was inhabited by the Serrano and Vanyumé. The Vanyumé are the desert division of the Serrano; they were first mentioned as the Beneme by Father Francisco Garces in 1776. Later, the ethnic designation Vanyume was adopted by Kroeber who mistranslated the name. Sutton and Earle (2017) discuss the relationship between the Mountain and Desert divisions of the Serrano at depth, suggesting that they are two divisions of the Serrano proper, not independent political, linguistic, or cultural entities (Earle 1997).

Response to Comment 10-4:

The comment notes that the retention and participation of Tribal Monitor in the event that any inadvertent discoveries are made. Please refer to Mitigation Measure TCR-1 on Page 3.4-49 of the Draft EIR which includes requirements for Native American monitors. Potential impacts to

tribal cultural resources were adequately evaluated and the mitigation does not warrant revision. See the response for comment 10-17 below for a more detailed discussion.

Response to Comment 10-5:

The comment notes the treatment and disposition of inadvertent discoveries. Please refer to Mitigation Measure CUL-4 and CUL-9 on page 3.4-45 and 3.4-48 of the Draft EIR regarding training, treatment, and disposition of inadvertent resource discoveries that adequately meet the regulator requirements governing archaeological, tribal cultural, and human remain resources. See the response for comment 10-17 below for a more detailed discussion.

Response to Comment 10-6:

The comment notes the treatment of inadvertently discovered remains and requests that no photographs are to be taken except by the coroner, with written approval by the consulting Tribe(s). This comment is discussed in detail in the response to Comment 10-18 below.

Response to Comment 10-7:

The comment notes that a final report shall be created as part of the project shall be submitted to the Lead Agency and Consulting Tribe(s) for review and comment. See the response to Comment 10-19 below that discusses the final report.

Response to Comment 10-8:

The comment requests that PWD avoid describing local groups that inhabited the landscape as "Tribes" in Section 3.4.1.3 Prehistoric Setting because these groups are not known as "Tribe(s)" during this period. The comment recommends using the term "local groups."

PWD reviewed Section 3.4.1.3 and did not find any references describing local groups that inhabited the landscape as "Tribes."

Response to Comment 10-9:

The comment requests that trinomial of the site be included when mentioning specific sites located in the Antelope Valley. PWD acknowledges this comment; however, PWD will not be able to include trinomials in the EIR because not all trinomials are available and typically not publicly available. The addition of trinomials does not change the outcome of the proposed Project, as some commonly known sites may not have been included in the proposed Project.

Response to Comment 10-10:

The comment notes that the citation for Price et al. should have the corresponding date of 2009, not 2008. The citation for Price et al. has been revised to 2009 throughout the EIR.

Response to Comment 10-11:

The comment notes that Robinson (1977:47) is the first to suggest that the local groups which inhabited the Antelope Valley occupied a central geographical location, and that these groups were a "central point of contract between four major centers of cultural development in central and southern California," which included the Shoshonean people of the desert proper to the east, the Yokuts to the north, the Chumash to the west, and the Gabrielino to the south.

Text in Section 3.4.1.5 Ethnographic Setting on page 3.4-7 has been revised.

> Robinson (1977) is the first to suggest that the local groups, which inhabited the Antelope Vvlley occupied a central geographical location. There groups were "a central point of contact between four major centers of cultural development in central and southern California;" this included Shoshonean people of the desert proper to the east, the Yokuts to the north, the Chumash to the west, and the Gabrieliño to the south. The territory of the Tataviam centered on the southwestern extent of the Antelope Valley, the Santa Clara River drainage, and possibly the Sierra Pelonas and the Palmdale area (Sutton 1988). The Kitanemuk inhabited the southern Tehachapi Mountains and the northern and central portion of the Antelope Valley. Finally, during the historic period, there is some evidence for the occupation of the Western Mojave by the Chemehuevi. The groups that are known to have lived in the vicinity of the proposed project area (Kitanemuk, Tataviam, Serrano, and Chemehuevi) are described in more detail below.

Robinson (1977) was also added to the list of references:

> Robinson, R.W. 1977. The Prehistoric of the Antelope Valley, California: An Overview. Kern County Archaeological Society Journal 1: 43-48.

Response to Comment 10-12:

The comment notes that MBMI is looking forward to working with PWD to protect these irreplaceable resources out of respect for the ancestors of the Morongo people.

PWD acknowledges this comment and is also looking forward to working with the MBMI and other Tribal groups to protect cultural and Tribal resources in the proposed Project area.

Response to Comment 10-13:

The comment requests that CR-1: Tribal Monitoring Services Agreement be included in the EIR. The comment notes that PWD shall enter into a Tribal Monitoring Services Agreement with the MBMI for the Project. The Tribal monitor shall be on-site during all ground-disturbing activities. The Tribal monitor will have the authority to temporarily divert, redirect, or halt the ground-disturbing activities to allow identification, evaluation, and potential recovery of cultural resources.

Mitigation Measure TCR-1: Native American Resources Monitoring adequately mitigates the potential significant effects of the Project identified within the Draft EIR. Incorporation of a monitoring agreement with a specific tribe in an area where several tribes are consulting on projects does not further reduce potential environmental impacts associated with the proposed

Project. Entering into a tribal monitoring agreement with MBMI would grant priority to MBMI over the other tribes that have consulted with PWD on the Project. PWD aims to maintain open channels of communication and to work equitably with all consulting tribes for resource monitoring associated with the proposed Project, therefore, no change has been made to Mitigation Measure TCR-1: Native American Resources Monitoring.

Mitigation Measure TCR-1: Native American Resources Monitoring states that PWD will retain Tribal monitor(s) the monitoring from a California Native American Tribe that is culturally and geographically affiliated in the area within which the project component is located. If more than one Tribe is interested in monitoring a project component, PWD shall prepare a monitoring rotation schedule. The Tribal monitor(s) shall be on site during ground-disturbing activities had have the authority 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 PWD and the Tribal monitor(s). All Tribal groups will be given the same opportunity.

Response to Comment 10-14:

The comment notes that a Qualified Archaeologist will be retain prior to any ground-disturbing activities who meets the U.S. Secretary of the Interior Standards. The Qualified Archaeologist shall be present during all ground disturbing activities to identify any known or suspected archaeological and/or cultural resources. The Qualified Archaeologist will also conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe's Tribal Historic Preservation Officer, and/or designated Tribal Representative, which will focus on the archaeological and tribal cultural resources that may be encountered during ground-disturbing activities.

As indicated in Mitigation Measure CUL-1: Cultural Resources Personnel Professional Qualifications Standards, PWD shall retain an archaeologist that meets the minimum professional qualifications set forth by the Secretary of the Interior. Mitigation Measure CUL-4: Construction Worker Cultural Resources Sensitivity Training states that the Qualified Archaeologist will implement a cultural resources sensitivity training program that will instruct all construction personnel of the types of cultural materials that may be encountered, cultural sensitivity issues, applicable laws protecting cultural resources, the proper treatment procedures to be enacted in the event of an inadvertent discovery of cultural materials or human remains, and confidentiality of discoveries. Additionally, Tribal representatives from each of the tribes consulting on the Palmdale Ditch Conversion Project shall be allowed to attend and/or participate in the training. Mitigation Measure CUL-1: Cultural Resources Personnel Professional Qualifications Standards and Mitigation Measure CUL-4: Construction Worker Cultural Resources Sensitivity Training meets the requirements of CEQA and does not require any modifications.

Response to Comment 10-15:

The comment requests that the project Archaeologist develop a Cultural Resource Management Plan and/or Archaeological Monitoring and Treatment Plan prior to any ground-disturbing

activities. The plan(s) shall be written in consultation with the consulting Tribe(s) and shall include approved Mitigation Measures/Conditions of Approval (MM/COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM/COA, and overview of the project schedule.

A Cultural Resources Monitoring Plan (CRMP) will be developed prior to the start of Project-related ground disturbance by a qualified archaeologist as indicated in Mitigation Measure CUL-5. The CRMP will discuss the monitoring protocols to be carried out during Project construction and should outline the appropriate measures to be followed in the event that cultural resources are encountered. The CRMP shall be submitted to PWD for dissemination to the Tribes consulting on the Project. Mitigation Measure CUL-5 as written meets the requirements of CEQA and Tribes will be given the opportunity to review the CRMP before PWD adopts the CRMP.

Response to Comment 10-16:

The comment offers an opinion that during all ground-disturbing activities, the Qualified Archaeologist and the Tribal Monitor shall be on-site full time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources ad defined in California Public Resources Code Section 21074. Archaeological and Tribal Monitoring will be discounted when the depth of grading and the soil conditions no longer retain the potential to contain cultural deposits. The Qualified Archaeologist, in consultation with the Tribal Monitor, shall be responsible for determining the duration and frequency of monitoring.

Mitigation Measure CUL-5: Archaeological Resources Monitoring and Mitigation Measure TCR-1: Native American Resources Monitoring state that full time archaeological monitoring and full time Tribal monitoring shall be conducted unless the Qualified Archaeologist determines that previous disturbances have sufficiently lowered the sensitivity for encountering prehistoric archaeological resources. Mitigation Measure CUL-5: Archaeological Resources Monitoring and Mitigation Measure TCR-1: Native American Resources Monitoring as written satisfies all requirements of CEQA as on-site monitoring of the proposed Project area will be determined by Qualified Archaeologist.

Response to Comment 10-17:

The comment notes that in an event of inadvertent discovery of cultural resources is discovered during construction, the Qualified Archaeologist and the Tribal Monitor has the authority to temporarily divert and/or temporarily halt ground-disturbance operations in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly nonsignificant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

The comment notes protocols that should be implemented if a potentially significant cultural resource(s) is discovered and includes possible treatments and dispositions of significant cultural resources in order of CEQA preference: full avoidance; if avoidance is not feasible, preservation

in place; if preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or deed restriction; if all other options are proven to be infeasible, data recovery through excavation and then curation in a curation facility that meets the Federal Curation Standards.

Mitigation Measure CUL-6: Archaeological Resources Discoveries describe the protocols in the event there is an inadvertent discovery of cultural remains in the proposed Project Area. PWD will halt work within 60 feet of any discovered cultural resources, install an environmentally sensitive area barrier, and contact a qualified archaeologist immediately for evaluation. If the Qualified Archaeologist determines that the resource is Native American, then a representative from the consulting Tribe(s) shall be contacted to participate in the evaluation of the resource. An archaeological testing will be conducted to determine eligibility for the California Register of Historical Resources or National Register of Historic Place. If the resource is eligible and impacts cannot be avoided, the Qualified Archaeologist will prepare a data recovery plan, which will be tailored to the physical nature and characteristics of the resource, pursuant to the requirements of CEQA Guidelines 15126.4(b)(3)(c).The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to the resource. Mitigation Measure CUL-6 as written satisfies all requirements of CEQA and provides Tribes with sufficient opportunities to evaluate the resource.

Response to Comment 10-18:

The comment notes that the MBMI request that no photographs are to be taken except by the coroner, with written approval by the consulting Tribe(s) in the event of inadvertent discovery of human remains. The comment notes specific conditions to be implemented to protect Native American human remains and/or cremations: immediate work in the vicinity shall stop within 100-foot perimeter of the discovery and area shall be protection, County Coroner has to be contacted within 24 hours of discovery and has 48 hours to make their determination pursuant to State and Safety Code Section 7050.5 and Public Resources Code Section 5097.98; County Coroner has 24 hours to notify the Native American Heritage Commission (NAHC) if the remains are Native American; the NAHC shall notify the Most Likely Descendant (MLD) and the MLD has 48 hours to inspect the site of discovery and give their recommendation; and if the MBMI has been named the MBMI, the MBMI may rebury the human remains and/or cremation and sacred items in their place of discovery with no further disturbance where they will reside in perpetuity; the place of reburial will not be disclosed to any party and is exempt from the California Public Records Act. The reburial location of human remains and/or cremations will be determined by the MLD, the landowner, and the City Planning Department.

Mitigation Measure CUL-9: Inadvertent Discovery of Human Remains as written satisfies all CEQA requirements as PWD will halt work within 100 feet of discovered human remains, contact the County Coroner, and will follow all protocols for Native American remains as designated by the California NAHC.

Response to Comment 10-19:

The comment requests that the final report(s) created as part of the proposed Project shall be submitted to the lead agency and consulting Tribe(s) for review and comment. After approval of all parties, the final reports are to be submitted to the appropriate information center, and the consulting Tribe(s).

Text in Mitigation Measure CUL-5: Archaeological Resources Monitoring on page 3.4-45 to 3.4-46 has been edited to clarify the CRMP.

> **Proposed Project Requirements.** Archaeological monitoring shall be determined by the Qualified Archaeologist based on the results of the archaeological resources assessment conducted under CUL-3 and requires the preparation of a Cultural Resources Monitoring Plan (CRMP) prior to the start of Project-related ground disturbance. The CRMP should discuss the monitoring protocols to be carried out during Project construction and should outline the appropriate measures to be followed in the event that cultural resources are encountered and outline requirements for the final monitoring report.

Response to Comment 10-20:

The comment notes that the comment letter does not conclude consultation. Upon review of the requested measures, the MBMI Tribal Historic Preservation Officer may provide further recommendations or guidance.

PWD acknowledges the comment. As part of the AB 52 process for the proposed Project, PWD mailed letters on June 27, 2024 to representatives from each of the six tribes identified by the NAHC inviting them to consult on the proposed Project pursuant to AB 52, including the MBMI. Other Tribes consulted, but PWD did not receive a response from the MBMI Tribal Historic Preservation Officer. The deadline for Tribal consultation has passed.

CHAPTER 3. DRAFT EIR TEXT REVISIONS

Chapter 3 presents text changes to the Draft EIR that have been made in response to the comments and/or PWD self-initiated changes that amplify, clarify, or make modifications or corrections. These changes do not change the results or conclusions of the Draft EIR. Changes in the text are indicated by strikeout where text is removed and by double underline where text is added. Section numbers correspond to the section numbers of the Draft EIR.

These revisions derive from comments raised in one or more of the comment letters received by the District on the Draft EIR, or by changes made by PWD to clarify information contained in the Draft EIR.

DRAFT EIR SECTION ES.1 EXECUTIVE SUMMARY

Text in the Draft EIR in the Executive Summary on page ES-2 has been revised accordingly to provide this clarification, and reads as follows:

> In addition to the Table A amount, PWD supplements Table A water with carryover water, Article 21 water, and ~~turnback pool water~~ Water Management Amendment.

Text in the Draft EIR in the Executive Summary on page ES-8 has been revised accordingly to provide this clarification, and reads as follows:

> Under the Reduced Project Alternative, PWD would not purchase 1,000 ~~2,000~~ AFY of production rights from other groundwater users in the Antelope Valley Groundwater Basin.

The following rows of Table ES-2 in the Draft EIR in the Executive Summary has been revised accordingly to provide clarification, and reads as follows:

Impact Statement	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
3.1 Aesthetics			
AES-3: In an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.	~~PS~~ LTS	~~**Mitigation Measure AES-1:** Above, shall apply~~ ~~**Mitigation Measure AES-2:** Above, shall apply~~ ~~**Mitigation Measure AES-3:** Above, shall apply~~ No Mitigation Required	~~LSM~~ LTS
3.2 Air Quality and Greenhouse Gas Emissions			
AIR-3: Expose sensitive receptors to substantial pollutant concentrations.	~~LTS~~ PS	~~No mitigation required.~~ **Mitigation Measure AIR-2:** Above shall, apply **Mitigation Measure AIR-3:** Above shall, apply	LT~~S~~M
3.3 Biological Resources			
BIO-1: Have a substantial adverse effect, 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 CDFW or USFWS.	PS	**Mitigation Measure BIO-1:** Habitat Assessment This mitigation measure is applicable to all Project components except the Palmdale Ditch Conversion project. A habitat assessment shall be conducted prior to ground-disturbing activities within 500 feet of each proposed Project component footprint. If no suitable habitat occurs to support special-status plant species, special-status wildlife species, nesting bird species, sensitive plant communities, and/or native desert vegetation, then no further mitigation is necessary. If suitable habitat occurs, implementation of Mitigation Measures BIO-2 through BIO-19 shall be required based on the resources identified. **Mitigation Measure BIO-2:** Special-Status Plant Surveys, Avoidance Measures, Mitigation and Monitoring Plan This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for special-status plant species is identified within the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. PWD shall retain a qualified biologist to conduct surveys for special-status plants prior to any vegetation removal, grubbing, or other construction activity within each proposed Project component footprint. The surveys shall be floristic in nature and seasonally timed to coincide with the blooming periods of the following special-status species with potential to occur: 1. **All Project Components except Palmdale Ditch Conversion Project:** Horn's milk-vetch, Palmer's mariposa-lily, alkali mariposa-lily, white pygmy-poppy, Mojave paintbrush, short-joint beavertail, Greata's aster, Peirson's morning-glory, sagebrush loeflingia, and Robbins' nemacladus. 2. **Palmdale Ditch Conversion Project:** Horn's milk-vetch, Palmer's mariposa-lily, alkali mariposa-lily, white pygmy-poppy, Mojave paintbrush, short-joint beavertail, and Greata's aster. The surveys shall be conducted during the relevant target species' blooming periods no more than two years prior to construction. Special-status plant species identified on site shall be mapped onto a site-specific aerial photograph. Surveys shall be conducted in accordance with the most current CDFW and USFWS protocols. A report of the survey results shall be submitted to PWD for review and approval. If special-status plants other than western Joshua trees are detected during special-status plant surveys, the observed special-status plants shall be avoided through Project component design where feasible, and vegetation clearing within 50 feet (15 meters) of any identified special-status plant shall be conducted by hand by the construction contractor(s), if practicable. An avoidance buffer of at least	LSM

Impact Statement	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
		50 feet (15 meters), or other distance as approved by a qualified biologist, shall be established around any identified special-status plants that can be feasibly avoided, and the avoidance buffer shall be delineated with bright orange protective fencing. The avoidance buffers shall be maintained for the duration of construction activities at each construction site and shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site. If special-status plants other than western Joshua tree are detected during special-status plant surveys and would be impacted by Project component construction, PWD shall retain a qualified restoration specialist to develop a Special-Status Plant Mitigation and Monitoring Plan that provides for the on-site or off-site replacement of the species impacted by the Project component. The Special-Status Plant Mitigation and Monitoring Plan shall specify the following: 3. A summary of impacts; 4. The location of the mitigation site; 5. Methods for harvesting seeds or salvaging and transplanting individuals to be impacted; 6. Measures for propagating plants or transferring living plants from the salvage site to the mitigation site; 7. Site preparation procedures for the mitigation site; 8. A schedule and action plan to maintain and monitor the mitigation site; 9. Criteria and performance standards by which to measure the success of the mitigation, including replacement of impacted plants at a minimum 1:1 ratio, <u>to be determined in consultation with CDFW if a Lake or Streambed Alteration Agreement pursuant to CFGC Section 1602 or Incidental Take Permit pursuant to CFGC Section 2081 is otherwise required for the Project component</u>; 10. Measures to exclude unauthorized entry into the mitigation areas; and 11. Contingency measures such as replanting or weeding if mitigation efforts are not successful. 12. The performance standards for the Special-Status Plant Mitigation and Monitoring Plan shall be, at a minimum, the following: o Within five years after introducing the plants to the mitigation site, the number of established, reproductive plants shall equal the number impacted during Project component construction; and o Restoration shall be considered successful after the success criteria have been met for a period of at least two years without any maintenance or remediation activities other than invasive species control. The Special-Status Plant Mitigation and Monitoring Plan shall be initiated prior to Project component construction (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation) and shall be implemented over a five-year period. The plan may also be combined with the Habitat Revegetation, Restoration, and Monitoring Program described under **Mitigation Measure BIO-19**. Annual reports discussing the implementation and management of the Special-Status Plant Mitigation and Monitoring Plan shall be submitted to PWD for review and approval. Five years after the start of the mitigation for the Project component, a final report shall be submitted to PWD for review and approval and shall, at a minimum, discuss the implementation and management of the Special-Status Plant Mitigation and Monitoring Plan over the five-year period and indicate whether the Special-Status Plant Mitigation and Monitoring Plan has been successful based on the established performance standards. Should the success criteria be met before Year Five, the mitigation effort can be deemed complete.	

Impact Statement	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
		Mitigation Measure BIO-3: Joshua Tree Census Survey, Avoidance, Minimization, and Compensation Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for western Joshua tree is identified within 50 feet of the Project component site during the habitat assessment conducted pursuant to **Mitigation Measure BIO-1**. A western Joshua tree census survey shall be conducted for that component by a qualified arborist in accordance with CDFW's Western Joshua Tree Census Instructions, which requires a census of all western Joshua trees within the Project component area and a 50-foot buffer. Impacts to western Joshua trees and within a minimum 50-foot buffer shall be avoided to the extent feasible. An avoidance buffer of at least 50 feet shall be established around western Joshua tree individuals that can be feasibly avoided. If a 50-foot buffer is not feasible, a reduced buffer can be established if a qualified desert native plant specialist and CDFW determine the reduced buffer would avoid direct impacts to individual western Joshua tree(s). No activities shall occur within the buffer. The avoidance buffers shall be maintained for the duration of construction activities in each work area and shall be removed only after the conclusion of all grading, clearing, and construction activities at each Project component construction site. For each dead or live western Joshua tree individual that cannot be avoided through Project component design, PWD shall implement one of the following measures: The western Joshua tree individual shall be trimmed or relocated under the guidance of a desert native plant specialist. Tree relocation shall be implemented in accordance with the following measures and CDFW-provided guidelines and relocation protocols, if made available prior to Project component construction, to assist the survival of the relocated tree: ○ The relocated western Joshua tree shall be placed in a suitable location and with proper orientation to improve its survival. ○ The western Joshua tree shall be relocated at a time that maximizes its survival, when feasible. ○ A desert native plant specialist shall be on site to oversee relocation of the tree. • PWD shall submit payment of an in-lieu fee to CDFW pursuant to CDFW's standard mitigation fee structure for western Joshua tree in effect at the time of application for an Incidental Take Permit. ~~The current (2024) standard mitigation fee structure is as follows:~~ ~~○ Trees five meters or greater in height - $2,500 per tree~~ ~~○ Trees one meter or greater but less than 5 meters in height - $500 per tree~~ ~~○ Trees less than one meter in height - $340 per tree~~ **Mitigation Measure BIO-4:** Arroyo Toad, Desert Tortoise, Tricolored Blackbird, and Least Bell's Vireo Avoidance, Minimization and Compensation Measures This mitigation measure is applicable to the Project components for which suitable habitat for arroyo toad, desert tortoise, tricolored blackbird, and/or least Bell's vireo is identified within 500 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1 and does not apply to the Palmdale Ditch Conversion project. Focused protocol surveys shall be conducted by a qualified biologist following the protocol outlined in the most recent USFWS and/or CDFW protocol guidelines. These currently include: 1999 Survey Protocol for the Arroyo Toad; 2018 Preparing for Any Action That May Occur Within the Range of the Mojave Desert Tortoise (Gopherus agassizii); 2015 Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding	

Impact Statement	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
		Colonies on Agricultural Fields in 2015; and 2001 Least Bell's Vireo Survey Guidelines). If any special-status wildlife species are observed during the focused surveys, these species and their habitat shall be avoided by the proposed Project. If avoidance of the special-status wildlife species is not feasible, and special-status wildlife may be potentially impacted by the proposed Project, additional avoidance and mitigation measures will be required, such as constructing proposed Project facilities outside the breeding season, establishing a suitable buffer around known territories, and restricting activities around certain times of year. If the proposed Project results in permanent impacts to habitat occupied by special-status wildlife species, USFWS and CDFW shall be consulted to ensure compliance with the Endangered Species Act and/or requirements for avoidance, minimization, or mitigation measures (e.g., replacement of impacted occupied habitat at a minimum 1:1 ratio, to be determined in consultation with USFWS and/or CDFW, as applicable). If species are identified and cannot be avoided, species-specific mitigation measures included in this section shall apply as applicable. **Mitigation Measure BIO-5:** Crotch's Bumble Bee Avoidance, Minimization, and Compensation Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for Crotch's bumblebee is identified within 50 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. If Crotch's bumble bee is still considered a CESA candidate species or has been listed as threatened or endangered under CESA at the time construction of Project components commences, PWD shall implement the following avoidance, minimization, and compensation measures for this species: • A qualified biologist shall conduct a protocol-level presence/absence survey for Crotch's bumble bee in areas of the Project component site with suitable habitat during the peak active period for Crotch's bumble bee (highest detection probability) that occurs prior to the start of the Project component's initial ground disturbing activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). The peak active period for Crotch's bumble bee in the Project area is anticipated to be April through June given the expected desiccation of Crotch's bumble bee floral resources within the Project area by mid-summer, though this timing could depend on annual climatic factors. Survey methodology shall be based on Section 4.1.1 of CDFW's Survey Considerations for CESA Candidate Bumble Bee Species (CDFW 2023b), or the most current CDFW guidance in effect at the time. Inaccessible areas outside of the Project component site can be surveyed using binoculars from the Project component edge or from public roads. The timing of the presence/absence survey can be phased with Project component build-out, if feasible. • If construction starts one year or more after the conclusion of the surveys described above, PWD shall consult with CDFW as to whether additional surveys are required and shall retain a qualified biologist to conduct additional surveys if recommended by CDFW. • If Crotch's bumble bee is present, the qualified biologist shall identify the location of nests in or adjacent to the Project component site to the extent feasible. Inaccessible land adjacent to the Project component site shall be observed using binoculars. If nests are identified within the Project component site or immediately adjacent to the site, a qualified biologist shall determine the need to establish a no-disturbance buffer around the nest, where feasible, to reduce the risk of disturbance or accidental take. The buffer shall provide at least 50 feet (15 meters) of clearance around active nest entrances. If Project component	

Impact Statement	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
		activities may result in disturbance or potential take, the qualified biologist, in coordination with CDFW, shall expand the buffer zone as necessary to prevent disturbance or take. If establishment of a no-disturbance buffer is feasible, construction activities shall not occur within the buffer until a qualified biologist determines the colony is no longer active (i.e., no Crotch's bumble bees are seen flying in or out of the nest for three consecutive days, indicating the colony has completed its nesting season and the next season's queens have dispersed from the colony). Once the nest has been determined to be inactive, construction activities within the no-disturbance buffer(s) shall be allowed to resume. Otherwise, the no-disturbance buffer shall be maintained for the duration of Project component construction activities in each work area and shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site. • If establishment of a no-disturbance buffer and/or avoidance of the nest is not feasible, the qualified biologist shall consult with CDFW regarding potential encroachment into the no-disturbance buffer and for Project component activities that may result in take of Crotch's bumble bee. • If Crotch's bumble bee is determined to be present on the Project component site, floral resources associated with the species that will be removed or damaged by Project component activities in the areas of the Project component site where Crotch's bumble bee is detected and documented shall be replaced at a minimum 1:1 ratio, to be determined in consultation with CDFW as part of the Incidental Take Permit process pursuant to CFGC Section 2081 for the Project component. Planning and implementation of suitable habitat replacement may be integrated into the Habitat Revegetation, Restoration, and Monitoring Program described under Mitigation Measure BIO-19. **Mitigation Measure BIO-6**: Burrowing Owl Breeding Season Survey and Foraging Habitat Mitigation o This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for burrowing owl is identified within 500 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. PWD shall retain a qualified biologist to conduct focused breeding season surveys for burrowing owl in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012), or the most current CDFW guidance in effect at the time. Surveys shall be conducted during the burrowing owl breeding season immediately prior to the start of Project component construction. o The focused surveys shall be conducted by a qualified biologist in the portions of the Project component site with suitable burrowing owl habitat plus a 500-foot buffer (burrowing owl survey area). The surveys shall be conducted in the morning or evening to evaluate the presence/absence of burrowing owl during the nesting season. All potential burrowing owls and burrows with burrowing owl sign shall be recorded using a GPS unit capable of submeter accuracy. Observations shall be conducted to determine if individual owls and/or nesting pairs are present and their status/disposition (e.g., late winter migrant, actively nesting, single individual not nesting). Representative photos of the habitat, potential and occupied burrows, and vegetation within the burrowing owl survey area shall be taken and included as an appendix to the survey report. All vertebrate fauna detected in the burrowing owl	

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		survey area shall be recorded in field notes. Inaccessible areas of the burrowing owl survey area outside the Project component site shall be surveyed using binoculars and/or spotting scopes to determine if owls are present. ○ A survey report shall be prepared that includes survey methodology, survey results, an analysis of potential Project component impacts to actively nesting pairs, and a calculation of the compensatory mitigation for foraging habitat, if impacted. Late winter migrants and non-nesting individuals located outside of the Project component impact area shall not require habitat mitigation unless passive relocation is necessary. Maps showing burrow locations, a delineation of suitable habitat areas, and burrowing owls observed shall be included in the survey report. ○ If actively breeding owls are observed within 500 feet of Project component activities, PWD shall implement compensatory mitigation for impacts to foraging habitat based on the following methodology: • A 500-foot buffer shall be established around each active nest burrow to indicate the primary foraging habitat area for each nesting pair. • Permanent Project component disturbance areas shall be overlain onto the foraging buffer zone(s) to calculate the area(s) of habitat loss. • Permanent foraging habitat loss shall be mitigated at a 1:1 ratio. ○ Compensatory mitigation for loss of foraging habitat shall be implemented on- or off-site and may include purchase of Conservation Bank credits, payment of an in-lieu fee to benefit burrowing owl, or permanent conservation and management of burrowing owl habitat through the recordation of a conservation easement, funding of a non-wasting endowment, and/or implementation of a Mitigation Land Management Plan based on the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). Mitigation lands shall be identified through coordination with CDFW on, adjacent, or proximate to the impact site where practicable and where habitat is suitable to support burrowing owl. **Mitigation Measure BIO-7**: Burrowing Owl Pre-Construction Clearance Survey And Occupied Burrow Avoidance And Minimization Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for burrowing owl is identified within 500 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. PWD shall retain a qualified biologist to conduct a pre-construction burrowing owl clearance survey of areas within the Project component site and a 500-foot buffer that contain suitable burrowing owl habitat to confirm presence/absence of burrowing owl individuals no more than 14 days prior to start of construction in each work area. The survey methodology shall be consistent with the methods outlined in the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). If no active breeding or wintering owls or evidence of occupied habitat is identified, then Project component construction in the work area may begin, and no further action is required. If active breeding or wintering owls or evidence of occupied habitat is detected in the Project component work area or within a 500-foot buffer, PWD shall implement the following measures for mitigation of potential burrowing owl presence in the Project area in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012): • A qualified biologist shall be present on site during initial ground disturbing activities in	

Impact Statement	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
		potential burrowing owl habitat identified in the habitat assessment. • Occupied burrows shall not be disturbed during the nesting season (February 1 to August 31). • No ground disturbing activities shall be permitted within a buffer no less than 656 feet (200 meters) from an active burrowing owl burrow during the breeding season, depending on the level of disturbance, unless the qualified biologist determines a reduced buffer would not adversely affect the burrowing owl(s). • During the nonbreeding (winter) season (September 1 to January 31), ground disturbing work can proceed near active burrowing owl burrows at the discretion of the qualified biologist as long as the work occurs no closer than 165 feet (50 meters) from the burrow, depending on whether the level of disturbance is low and if the active burrow is not directly affected by the Project component activity. A smaller/larger buffer may be established by the qualified biologist following monitoring and assessment of the Project component's effects on the burrowing owl(s). • If active winter burrows are found that would be directly affected by ground disturbing activities, owls can be excluded from winter burrows according to recommendations in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). The qualified biologist shall prepare a passive relocation program in accordance with Appendix E (Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012) and submit the passive relocation program to PWD and CDFW for review and approval prior to the commencement of ground disturbance activities. If required, a compensatory mitigation agreement shall be developed in coordination with CDFW prior to passive relocation of owls. • Smaller non-disturbance buffers may be permitted in the winter (and sometimes breeding season) for the burrowing owl individuals if a noise and visual barrier, such as hay bale walls, is installed between the occupied burrowing owl burrow and construction activities, as long as the qualified biologist determines the reduced buffer will provide adequate protection. • When a qualified biologist determines burrowing owls are no longer occupying the Project component site and passive relocation is complete, ground disturbing activities may begin. A final letter shall be prepared by a qualified biologist documenting the results of the passive relocation. The letter shall be submitted to CDFW. **Mitigation Measure BIO-8**: Swainson's Hawk Avoidance And Minimization Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for Swainson's hawk is identified within 0.5-mile of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. Construction activities shall be limited to the period between September 16 and February 28 to the extent feasible. If construction activities cannot be completed within this timeframe, PWD shall retain a qualified biologist(s) with Swainson's hawk survey experience to conduct a Swainson's hawk nest survey within the Project component site and a 0.5-mile buffer during the nesting season immediately prior to the commencement of Project component construction. While the proposed Project does not propose to construct renewable energy facilities, nest survey methods and timing shall follow those outlined in the CEC and CDFW protocol for the Antelope Valley (CDFW 2010) with the exception that the nest survey shall occur within a 0.5-mile buffer of the Project component site. A report	

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		documenting results of the survey shall be prepared and submitted to PWD for review and approval prior to commencement of Project component activities. If no Swainson's hawk nests are documented within 0.5 mile of the Project area, no additional action shall be required. If an active Swainson's hawk nest is detected within 0.5 mile of the Project component site, PWD shall implement the following measures: • Retain a qualified biologist to prepare a Swainson's Hawk Nest Monitoring and Mitigation Plan that incorporates the following measures to avoid and minimize impacts to Swainson's hawk nests in and near the construction areas during the breeding season (March 1 to September 15): ○ If nesting Swainson's hawks are detected within 0.5 mile of Project component activities during the breeding season, CDFW shall be consulted regarding the establishment of a no-disturbance buffer to avoid impacts to the active nest. Construction activities shall maintain a 0.25-mile no-disturbance buffer around an active nest unless a reduced buffer is approved in consultation with the qualified biologist and CDFW. ○ If construction activities are necessary within the buffer zone, PWD shall consult with CDFW as to the potential for take. Monitoring of the nest site by a qualified biologist and funding of Swainson's hawk recovery efforts may be necessary. ○ If a hawk is found injured during Project component activities on the Project component site, the injured hawk shall be immediately relocated to a raptor recovery center approved by CDFW. The qualified biologist shall notify CDFW personnel via telephone or email, followed by a written report that includes the date, time, location, and circumstances of the incident. PWD and its construction contractor(s) shall implement the provisions of the Swainson's Hawk Nest Monitoring and Mitigation Plan. A report documenting measures taken to avoid and minimize impacts to Swainson's hawk nests shall be prepared by the qualified biologist following the completion of Project component construction and submitted to PWD for review and approval. **Mitigation Measure BIO-9**: Mohave Ground Squirrel Avoidance and Minimization Measures. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for Mohave ground squirrel is identified within 50 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. PWD shall retain a qualified biologist to conduct a focused habitat assessment (visual survey) of the Project component site following the CDFW's Mohave Ground Squirrel Survey Guidelines (CDFW 2023c) to assess the potential habitat suitability for the species. If suitable habitat is identified, protocol live-trapping surveys shall be conducted in areas of suitable habitat to assess the potential presence and relative abundance of Mohave ground squirrel within the Project component site. Pursuant to the protocol outlined in the Mohave Ground Squirrel Survey Guidelines, trapping surveys shall take place over three terms in specific timing windows in the period of March 15 and July 15 immediately prior to commencement of Project component activities. If construction starts one year or more after the conclusion of surveys, PWD shall consult with CDFW as to whether additional surveys are required and shall retain a qualified biologist to conduct additional surveys if recommended by CDFW. Findings of the habitat assessment and live-trapping surveys shall be documented in a report that also details survey methodology, timing, and surveyor qualifications. If no Mohave ground squirrels are discovered	

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		during the protocol surveys, no further action is required. If Mohave ground squirrels are observed during the surveys, PWD shall retain a qualified biologist to develop a Mohave ground squirrel biological monitoring plan, in coordination with CDFW, that includes measures to avoid, minimize, and/or mitigate potential impacts as a result of Project component activities, including, but not limited to: • A qualified biologist shall conduct pre-construction clearance surveys for Mohave ground squirrel no more than 30 days prior to the start of any ground-disturbing activities in areas of the Project component site that contain suitable habitat for the species, as documented in the Mohave ground squirrel habitat assessment and survey report. The survey shall cover 100 percent of the anticipated impact area intersecting suitable Mohave ground squirrel habitat and a 50-foot buffer (survey area). A qualified biologist shall document locations of potential Mohave ground squirrel burrows. A 50-foot no-disturbance buffer shall be established around suspected or known Mohave ground squirrel burrows. Project component activities shall not be conducted within the no-disturbance buffer unless at the discretion of the qualified biologist. A report documenting the results of the survey, locations of suspected or known Mohave ground squirrel burrows, and recommended no-disturbance buffers shall be submitted to PWD for review and approval prior to commencement of Project component activities in the survey area. • If burrows are identified during the survey that are suspected or known to be occupied by Mohave ground squirrel and cannot be avoided, the qualified biologist shall prepare a Mohave Ground Squirrel Relocation Plan outlining measures to relocate individual Mohave ground squirrels prior to construction start. The plan shall be submitted to PWD and CDFW for review and approval and shall be implemented prior to commencement of Project component activities in work areas with suspected or known Mohave ground squirrel burrows. The Plan shall outline measures for burrow excavation, handling of individuals, identification of proposed relocation areas, and release of relocated individuals after the conclusion of all grading, clearing, and construction activities. A report documenting relocation activities and outcomes shall be prepared by the qualified biologist and submitted to PWD and CDFW for review and approval after completion of relocation activities. <u>The Plan shall also detail restoration of and/or compensatory mitigation, at a minimum 1:1 ratio, of occupied Mohave ground squirrel habitat that is temporarily or permanently impacted by the Project activities if required by CDFW as part of the Incidental Take Permit process pursuant to CFGC Section 2081 for the Project component.</u> • Within occupied Mohave ground squirrel habitat (as determined by the results of the focused habitat assessment and live trapping survey results as well as the pre-construction clearance survey results), the area of disturbance of vegetation and soils shall be the minimum required for the Project component. Clearing of vegetation and grading shall be minimized. Wherever practicable, rather than clearing vegetation and grading access routes, equipment and vehicles shall use existing surfaces or previously disturbed areas. Where grading is necessary, surface soils shall be stockpiled and replaced following construction. To the extent practicable, disturbance of shrubs and surface soils due to stockpiling shall be minimized. A qualified biologist shall monitor Project component activities during initial ground disturbance in suitable Mohave ground squirrel habitat. The qualified biologist shall work with the construction foreman and crew to implement and	

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		achieve compliance with the Mohave ground squirrel biological monitoring plan prepared for the Project component. **Mitigation Measure BIO-10**: Roosting Bats Avoidance And Minimization Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for special-status bats is identified within the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. PWD shall implement the following measures for special-status roosting bats: • To the extent feasible, demolition or disturbance of suitable bat roosting habitat (e.g., live and dead trees, rock outcrops) shall be scheduled between October 1 and February 28, outside of the maternity roosting season. • If suitable roost trees must be encroached during the maternity season (March 1 to September 30) or structures must be removed at any time of the year, PWD shall retain a qualified bat specialist to conduct a pre-construction survey no more than seven days prior to the start of Project component construction in a given work area to identify those trees or structures proposed for disturbance that could provide hibernacula or nursery colony roosting habitat for bats. The trees or structures shall be closely inspected by the bat specialist to determine the presence or absence of roosting bats. If potentially suitable hibernacula or nursery colony roosting habitat for bats is not present in areas anticipated to be directly impacted by Project component activities, no additional action is required. • Trees or structures determined to be maternity roosts shall be left in place until the end of the maternity season (March 1 to September 30). Any structure containing a hibernating colony shall be left in place until a qualified bat specialist determines the bats are no longer hibernating. • If bats are not detected, but the bat specialist determines roosting bats may be present at any time of year, trees or structures shall be brought down in a controlled manner using heavy machinery. To ensure the optimum warning for any roosting bats that may still be present, the trees or structures shall be nudged lightly two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active. Trees or structures may then be pushed to the ground slowly under the supervision of a qualified bat specialist. Felled trees shall remain in place until they are inspected by a bat specialist. Trees that are known to be bat roosts shall not be sawed up or mulched immediately. A period of at least 48 hours shall elapse prior to such operations to allow bats to escape. • The bat specialist shall document all demolition monitoring activities and prepare a summary report for review and approval by PWD upon completion of tree disturbance or structure demolition activities. • In exceptional circumstances, such as when roosts cannot be avoided and bats cannot be evicted by non-invasive means, it may be necessary to capture and transfer the bats to appropriate natural or artificial bat roosting habitat in the surrounding area. Bats raising young or hibernating shall not be captured and relocated. Capture and relocation shall be performed by a qualified bat specialist in coordination with CDFW requirements and shall be subject to approval by CDFW. • If confirmed occupied or formerly occupied bat roosting habitat is destroyed during Project component construction, the bat specialist shall determine the need for artificial bat roosts based on the availability and condition of suitable bat roosts in the immediate	

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		vicinity of the Project component site. If artificial bat roosts are deemed necessary due to a potential lack of suitable bat roosts in the area, the artificial roosts shall be of comparable size and quality and shall be constructed and maintained at a suitable undisturbed area. The design and location of the artificial bat roosts shall be determined by the bat specialist in consultation with CDFW and pursuant to the following standards: ○ A monitoring plan shall be prepared for the replacement roosts, which shall include performance standards for the use of the replacement roosts by the displaced species, as well as provisions to prevent harassment, predation, and disease of relocated bats. The performance standards shall consider the location and condition of habitat where replacement roosts are placed and shall be sufficient to serve the number of bats estimated to be displaced by Project component impacts to suitable roosting habitat. Annual reports detailing the success of roost replacement and bat relocation shall be prepared and submitted to PWD and CDFW for five years following relocation. If artificial roosts are not in use by the third year of monitoring, PWD shall consult with CDFW as to larger trends in bat populations in the area that may be affecting roost use and/or determine if adjustments to roost location or design are needed. **Mitigation Measure BIO-11**: Woodrat Midden Avoidance And Minimization Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for special-status woodrat species is identified within 10 feet of the Project component site during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. PWD shall retain a qualified biologist to conduct a pre-construction survey for active woodrat middens in and adjacent to areas anticipated for ground disturbance or vegetation removal in the Project component site within 30 days prior to initial site disturbance at each construction site. A report documenting pre-construction survey results, including the location of any active woodrat middens, shall be submitted to PWD for review and approval. If no active woodrat middens are observed during the pre-construction survey, no additional action shall be required. All occupied woodrat middens shall be mapped and flagged for avoidance to the extent feasible, with a minimum 10-foot buffer surrounding the active midden. If avoidance is not feasible, middens shall be "daylighted" by a qualified biologist one night before anticipated vegetation removal or ground disturbance within each construction site to allow for the rats to escape and passively relocate prior to disturbance of the area. A brief report documenting the passive relocation actions taken shall be submitted to PWD for review and approval prior to commencement of Project component construction activities within 10 feet of the active woodrat middens. **Mitigation Measure BIO-12**: Preconstruction Surveys For Special-Status Wildlife Species PWD shall implement the following preconstruction surveys for special-status wildlife species: • All Project Components except Palmdale Ditch Conversion Project: If suitable habitat for any special-status wildlife species with the potential to occur (e.g., western pond turtle, Northern California legless lizard, California legless lizard, California glossy snake, coast horned lizard, two-striped gartersnake, pallid bat, Townsend's big-eared bat, San Diego desert woodrat) is identified during the habitat assessment conducted pursuant to	

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		Mitigation Measure BIO-1, pre-construction surveys shall be required prior to ground-disturbing activities. If any of these species are identified on or near construction areas during the preconstruction survey, Mitigation Measures BIO-13 through BIO-16 shall be implemented. Additional avoidance measures may include establishing a buffer around the species or host plants if a population of a special-status species is observed. • Palmdale Ditch Conversion Project: PWD shall retain a qualified biologist to conduct a pre-activity clearance survey for special-status reptile species no more than seven days prior to commencement of ground or vegetation disturbing activities at each work area within the Palmdale Ditch Conversion project site. The pre-activity survey shall utilize methods to detect special-status reptile species with potential to occur at the site. Prior to commencement of Palmdale Ditch Conversion project construction activities at each work area, the methods and results of the surveys and, if a special-status reptile species is found, recommended species-specific avoidance and/or relocation measures, shall be submitted in a report for review and approval by PWD, and implemented during construction activities. These measures may include, but would not be limited to, the qualified biologist conducting a sweep of the proposed impact areas before the daily start of construction in each work area in the locations where special-status reptile individuals were observed during the pre-construction survey, or have moderate or high potential to occur based on habitat suitability as determined by the qualified biologist, and avoidance of work in the sweep areas until the qualified biologist confirms special-status reptiles are not present, or if present, until they have moved out of harm's on their own, as determined by the qualified biologist, or have been moved out of harm's way to adjacent suitable habitat by the qualified biologist. **Mitigation Measure BIO-13**: General Best Management Practices. This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which special-status wildlife species are identified during the pre-construction survey conducted pursuant to Mitigation Measure BIO-12 and/or for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted. PWD shall require construction contractor(s) and their personnel to adhere to the following general BMPs during construction: • Construction-related vehicles shall observe a 10-mile-per-hour speed limit within the unpaved limits of construction. • All open trenches or excavations shall be fenced and/or sloped to prevent entrapment of wildlife species. • All food-related trash items such as wrappers, cans, bottles, and food scraps generated during construction shall be disposed of in closed containers only and removed daily from the construction site. • No deliberate feeding of wildlife shall be allowed. • No pets shall be allowed on the construction site. • No firearms shall be allowed on the construction site. • Vehicle or equipment maintenance shall be performed in designated staging areas. • Access to the construction area outside of established work hours for the proposed Palmdale Ditch Conversion project shall be prohibited. • If construction must occur at night (i.e., between dusk and dawn), all lighting shall be	

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		shielded and directed downward to minimize the potential for glare or spillover. • During construction, heavy equipment shall be operated in accordance with standard BMPs. All equipment used on-site shall be properly maintained to avoid leaks of oil, fuel, or residues. Provisions shall be in place to remediate accidental spills. • While encounters with special-status species are not anticipated, any worker who inadvertently injures or kills a special-status species or finds one dead, injured, or entrapped shall immediately report the incident to the construction foreman or biological monitor (required under Mitigation Measure BIO-16). The construction foreman or biological monitor shall immediately notify PWD. **Mitigation Measure BIO-14:** Work Limit Delineation This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which special-status wildlife species are identified during the pre-construction survey conducted pursuant to Mitigation Measure BIO-12 and/or for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted. PWD shall clearly identify work area limits on design and construction plans and shall require its construction contractor(s) to delineate and clearly mark approved construction work area limits with flagging or temporary orange construction fencing in the field prior to initial ground disturbing activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). The marked boundaries shall be maintained for the duration of construction activities in each work area and shall be clearly visible to personnel on foot and by heavy equipment operators. Fencing or other barriers shall be placed on the impact side of the work area limit (i.e., within the construction site boundaries) to reduce the potential for encroachment and additional vegetation loss within adjacent open space. Fencing shall be installed pursuant to the approved construction and grading plans. Prior to initial ground disturbing activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation), the biological monitor (if required under Mitigation Measure BIO-16) shall verify the limits of construction have been properly staked and are readily identifiable. Employees shall strictly limit their activities and vehicles to the designated construction area, staging areas, and routes of travel. Intrusion by unauthorized vehicles outside of construction limits shall be prohibited, with control exercised by an on-site foreman. All temporary fencing shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site. **Mitigation Measure BIO-15:** Construction Worker Environmental Awareness Program This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which special-status wildlife species are identified during the pre-construction survey conducted pursuant to Mitigation Measure BIO-12 and/or for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted. PWD shall retain a qualified biologist to conduct a preconstruction Worker Environmental Awareness Program (WEAP) training for all personnel working on the Project component. The WEAP shall aid workers in recognizing special-status species and regulated biological resources known to occur (e.g., western Joshua trees, sensitive natural communities, jurisdictional waters or wetlands) or potentially occurring on the Project component site (as determined by the preconstruction survey conducted pursuant to Mitigation Measure BIO-12 and the qualified biological monitor identified in Mitigation Measure BIO-16 and as confirmed by the results of the focused surveys conducted pursuant to Mitigation Measures	

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		BIO-2 through BIO-11) and focus on conditions and protocols necessary to avoid and minimize potential impacts to biological resources. All personnel associated with construction of the Project component shall attend the WEAP training prior to initiation of construction activities (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). The training shall include information about the special-status species potentially occurring within the Project component site, identification of special-status species and habitats, a description of the regulatory status and general ecological characteristics of special-status resources, and a review of the limits of construction and measures required to avoid and minimize impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employees, and other personnel involved with construction. All employees working at the Project component construction site shall sign a form provided by the trainer documenting they have attended the WEAP and understand the information presented to them. The signed form shall be provided to PWD as documentation of training completion. The crew foreman shall be responsible for ensuring crew members adhere to the guidelines and restrictions designed to avoid impacts to special-status species and other regulated biological resources. If new personnel are brought onto the Project component after completion of the initial WEAP training, the training shall be conducted for all new personnel before they can participate in Project component construction activities. Construction personnel shall be instructed to not directly harm any special-status species on site by halting activities until the species can move to off-site areas or contact a qualified biologist to move the species out of harm's way, if appropriate. **Mitigation Measure BIO-16**: Qualified Biological Monitor This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which special-status wildlife species are identified during the pre-construction survey conducted pursuant to Mitigation Measure BIO-12 and/or for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted. PWD shall retain a qualified biological monitor with relevant experience with the taxa and species in the Antelope Valley desert and mountain foothills for which pre-construction surveys, monitoring, or other support is required during Project component construction (potentially including, but not limited to, special-status plants, Northern California legless lizard, coast horned lizard, raptors, nesting birds, roosting bats, woodrats, and those special-status species with potential to occur based on the results of pre-activity and focused surveys conducted prior to Project component initiation in accordance with Mitigation Measures BIO-2 through BIO-12 and Mitigation Measure BIO-17). The qualified biologist role may be satisfied by one or more individuals depending on qualifications and experience with one or more species and taxa. The qualified biologist shall be present during initial ground disturbance or vegetation removal activities and shall have the authority to temporarily stop work if one or more special-status species are observed that may be impacted by Project component activities. The biologist shall relocate special-status amphibian, reptile, or mammals present within anticipated Project component impact areas to suitable undisturbed habitat outside the areas directly and indirectly affected by construction activities. The biologist shall hold the requisite incidental take permits or authorizations for the capture and handling of the species, if applicable. The biologist shall recommend measures to ensure compliance with avoidance and minimization measures, applicable permit conditions, and conditions required for observed special-status species. When the biologist is present on site, they shall be responsible for: • Verifying Project compliance with environmental mitigation measures and requirements;	

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		• Establishing lines of communication and reporting methods in coordination with the construction crew foreman and PWD; • Conducting pre-construction clearance sweeps for special-status species and nesting birds, as needed; • Documenting special-status species observations; • Recommending preventative or protective actions to avoid and minimize potential Project impacts to regulated biological resources where feasible; • Recommending actions to be taken in the event of non-compliance; and • Daily and weekly reporting of compliance. Monitoring logs documenting the above shall be submitted to PWD for review and approval for the duration of Project component construction. **Mitigation Measure BIO-17:** Nesting Bird Surveys And Avoidance And Minimization Measures This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for nesting birds is identified during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. Project component construction activities shall occur outside of the bird breeding season (February 1 to August 31) to the extent practicable. If construction must commence within the bird breeding season, PWD shall retain a qualified biologist to conduct a pre-construction nesting bird survey within the disturbance footprint plus a minimum buffer of 100 feet to a maximum buffer of 500 feet depending on species, work activity, and existing ambient conditions ~~100-foot buffer (300 feet for raptors), where feasible~~, no more than seven days prior to initiation of ground disturbance (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation) in each work area. If the Project component is phased or construction activities stop for more than one week, a subsequent pre-construction nesting bird survey shall be conducted prior to each phase of construction, if initiated during the bird breeding season. Pre-construction nesting bird surveys shall be conducted during the time of day when birds are active and shall factor in sufficient time to perform this survey adequately and completely. A brief report of the nesting bird survey results, if applicable, shall be submitted to PWD for review and approval prior to ground disturbance and/or vegetation removal activities. If no nesting birds are observed during pre-construction surveys, no further action is required. If nests are found, an appropriate avoidance buffer of up to 300 feet ~~ranging in size from 25 to 50 feet~~ for passerine (perching birds) nests and up to 500 ~~300~~ feet for active, non-listed raptor nests ~~(depending on the species and the proposed work activity)~~ shall be determined by the qualified biologist and demarcated with bright orange construction fencing or other suitable flagging. Active nests shall be monitored at a minimum of once per week until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or parental care for survival. No construction activity shall occur within this buffer until the qualified biologist confirms the breeding/nesting is completed and all the young have fledged. If Project component activities must occur within the buffer, they shall only be conducted at the discretion of the qualified biologist. **Mitigation Measure BIO-18:** Invasive Plant Species Control Measures For the Palmdale Ditch Conversion project and other Project components for which protected oak trees, oak woodlands, California juniper, or native desert vegetation may be impacted, PWD shall require the construction contractor(s) and their construction personnel to ensure equipment is free of	

Impact Statement	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
		invasive plant seeds, propagules, and any material which may contain them (e.g., soil). For purposes of this mitigation measure, invasive plant species shall include all species with a California Invasive Plant Council rating of moderate or high. Prior to entering the construction site, equipment shall be inspected to confirm it is free of mud, dirt, and debris. Tire track stations shall be installed at construction site entrances and exits. Staging areas and access routes shall avoid weed infestations, and infestations within the work area(s) shall be flagged and avoided to the maximum extent feasible. Only certified weed-free materials (e.g., fiber rolls, straw, and fill) shall be used during construction. **Mitigation Measure BIO-19:** Sensitive Natural Communities And Jurisdictional Features Avoidance, Minimization Measures Sensitive natural communities and jurisdictional features identified for avoidance within the Project component site shall be demarcated using brightly colored flagging, as necessary, and avoided to the extent feasible during Project component construction. The marked boundaries shall be maintained for the duration of Project component construction activities in each work area and shall be clearly visible to personnel on foot and by heavy equipment operators. Construction personnel shall be instructed to avoid these areas as much as feasible. All temporary flagging shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site. Compliance with this measure shall be documented in the biological monitoring reporting, if required under Mitigation Measure BIO-16. In addition, PWD shall require its construction contractor(s) and their personnel to implement the following measures: • Any material/spoils generated from construction shall be located away from sensitive natural communities and jurisdictional features and protected from stormwater run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate. • Materials, hand-held equipment and other non-heavy or non-vehicle equipment shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from sensitive natural communities and jurisdictional areas. • Any spillage of material shall be stopped if it can be done safely. The contaminated area shall be cleaned, and any contaminated materials shall be properly disposed of. For all spills, the Project foreman and biological monitor (if required under Mitigation Measure BIO-16) shall be notified. If impacts to sensitive natural communities cannot be avoided, PWD shall identify compensatory mitigation prior to disturbance of the features. Mitigation may take the form of permittee-responsible, on-site or off-site mitigation or the purchase of credits from an approved mitigation bank or through applicant-sponsored mitigation (e.g., purchase and/or dedication of land for mitigation). If required, compensatory mitigation for unavoidable impacts to sensitive vegetation communities shall be accomplished at a minimum ratio of 1:1; however, the final ratio shall be determined and approved by CDFW if a Lake or Streambed Alteration Agreement pursuant to CFGC Section 1602 or Incidental Take Permit pursuant to CFGC Section 2081 is required for the Project component. If on-site or off-site restoration would occur, PWD shall retain a qualified biologist to develop a Habitat Revegetation, Restoration, and Monitoring Program and submitted for CDFW approval prior to the commencement of Project component construction (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). At a minimum, the	

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		program shall include the following: • A description of the purpose and goals of the restoration • Identification of success criteria and performance standards • Methods of site preparation, including topsoil salvage and replacement procedures • Irrigation plan and schedule • Best Management Practices (BMPs) • Maintenance and monitoring program • Adaptive management strategies • Key stakeholders and responsible parties • Funding • Contingencies **Mitigation Measure BIO-20:** Aquatic Resources Delineation and Compensatory Mitigation An aquatic resources delineation shall be conducted to determine the limits of potential jurisdictional aquatic resources within the vicinity of proposed Project components. The results of the aquatic resources delineation shall be used during proposed Project component design to determine if aquatic resources can be avoided. If aquatic resources can be avoided, then no compensatory measures are necessary. Avoidance of aquatic resources within Project component sites shall be implemented according to Mitigation Measure BIO-19. If impacts to jurisdictional waters and wetlands cannot be avoided, PWD shall identify compensatory mitigation prior to disturbance of the features. Compensatory mitigation for impacts to the jurisdictional extents of the Palmdale Ditch shall be provided at a minimum 0.5:1 ratio given the Ditch's altered hydrology as a manmade structure constructed entirely in uplands that is artificially lined in a number of areas (concrete, synthetic liner, elevated flume) and its controlled flow that fluctuates in quantity and timing from year to year depending on annual climatic conditions and available water supply in Littlerock Reservoir. Compensatory mitigation for impacts to other jurisdictional waters and wetlands shall be provided at a minimum 1:1 ratio, unless a higher ratio is required by Lahontan RWQCB, CDFW, and/or USACE. Mitigation may take the form of permittee-responsible, on-site or off-site mitigation or the purchase of credits from an approved mitigation bank. If on-site or off-site mitigation is proposed, a Compensatory Mitigation Plan shall be prepared that outlines the compensatory mitigation in coordination with the Lahontan RWQCB, CDFW, and/or USACE. If on-site mitigation is proposed, the Compensatory Mitigation Plan can be integrated with the Habitat Revegetation, Restoration, and Monitoring Program described in Mitigation Measure BIO-19 and shall identify those portions of the site, such as relocated drainage routes, that contain suitable characteristics (e.g., hydrology) for restoration. Determination of mitigation adequacy shall be based on comparison of the restored habitat with similar, undisturbed habitat in the site vicinity. The Compensatory Mitigation Plan shall include remedial measures if performance criteria are not met. If the Compensatory Mitigation Plan is not integrated with the Habitat Revegetation, Restoration, and Monitoring Program described in Mitigation Measure BIO-19, the same reporting requirements shall apply for monitoring and evaluation of Compensatory Mitigation Plan implementation as detailed in Mitigation Measure BIO-19. If off-site mitigation is proposed, off-site land shall be preserved through a deed restriction or conservation easement and the Compensatory Mitigation Plan shall identify an approach for funding assurance for the long-term management of the conserved land.	

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		Mitigation Measure BIO-21: Groundwater-Dependent Ecosystems If the proposed Project (particularly rehabilitation of groundwater wells 6A, 15, 18, 19, 30, and/or 33 and/or replacement wells) is in proximity to mapped groundwater dependent ecosystems (GDEs), then representative groundwater monitoring stations shall be installed within GDEs to track groundwater levels and vegetation responses over time. Prior to implementation of the proposed Project, the GDEs that may potentially be affected by the proposed Project shall be mapped to identify the baseline conditions, including the extent of vegetation communities (e.g., via vegetation mapping on the ground and via remote sensing) and composition of vegetation (e.g., percent cover via transects on the ground) that comprises each vegetation community. Baseline data shall be collected, and long-term monitoring shall be conducted for areas of potential affect as well as representative control sites with similar conditions (to account for other variables, such as changes in climate, precipitation, etc.). Thresholds for changes in vegetation over time shall be established prior to proposed Project implementation (e.g., greater than 20 percent vegetation decline that correlates with increased pumping and decreased groundwater levels). Monitoring shall be conducted for a minimum 5-year period following any increase in groundwater pumping that is beyond the existing range of pumping currently conducted (i.e., prior to the Project) for the life of the proposed Project. If there is no impact to GDEs, then no further mitigation is necessary. If GDEs are impacted by the proposed Project, then adaptative management measures shall be implemented to reduce pumping to changes in vegetation to allow for re-establishment of vegetation communities to pre-existing conditions, which will be determined by monitoring for a minimum of an additional three years or until pre-existing conditions (i.e., both groundwater monitoring well levels and GDE vegetative cover) are obtained. Alternatively, if adaptive management measures cannot be implemented to reduce pumping and re-establish pre-existing conditions, then mitigation for permanent impacts to GDEs would include: On- and/or off-site creation, restoration, and/or enhancement of in-kind GDE habitat at a ratio no less than 1:1 for permanent impacts. Off-site creation, restoration, and/or enhancement at a ratio no less than 1:1 may include the purchase of mitigation credits at an off-site mitigation bank or in-lieu fee program.	
BIO-2: The proposed project could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.	PS	**Mitigation Measure BIO-19:** Above, shall apply ~~Sensitive Natural Communities And Jurisdictional Features Avoidance, Minimization Measures~~ ~~Sensitive natural communities and jurisdictional features identified for avoidance within the Project component site shall be demarcated using brightly colored flagging, as necessary, and avoided to the extent feasible during Project component construction. The marked boundaries shall be maintained for the duration of Project component construction activities in each work area and shall be clearly visible to personnel on foot and by heavy equipment operators. Construction personnel shall be instructed to avoid these areas as much as feasible. All temporary flagging shall be removed only after the conclusion of all grading, clearing, and construction activities at each construction site. Compliance with this measure shall be documented in the biological monitoring reporting, if required under Mitigation Measure BIO-16.~~ ~~In addition, PWD shall require its construction contractor(s) and their personnel to implement the following measures:~~ • ~~Any material/spoils generated from construction shall be located away from sensitive natural communities and jurisdictional features and protected from stormwater run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers,~~	LSM

Impact Statement	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
		~~sand/gravel bags, and straw bale barriers, as appropriate.~~ • ~~Materials, hand-held equipment and other non-heavy or non-vehicle equipment shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from sensitive natural communities and jurisdictional areas.~~ • ~~Any spillage of material shall be stopped if it can be done safely. The contaminated area shall be cleaned, and any contaminated materials shall be properly disposed of. For all spills, the Project foreman and biological monitor (if required under Mitigation Measure BIO-16) shall be notified.~~ ~~If impacts to sensitive natural communities cannot be avoided, PWD shall identify compensatory mitigation prior to disturbance of the features. Mitigation may take the form of permittee-responsible, on-site or off-site mitigation or the purchase of credits from an approved mitigation bank or through applicant-sponsored mitigation (e.g., purchase and/or dedication of land for mitigation). If required, compensatory mitigation for unavoidable impacts to sensitive vegetation communities shall be accomplished at a minimum ratio of 1:1; however, the final ratio shall be determined and approved by CDFW~~ ~~if a Lake or Streambed Alteration Agreement pursuant to CFGC Section 1602 or Incidental Take Permit pursuant to CFGC Section 2081 is required for the Project component~~. ~~If on-site or off-site restoration would occur, PWD shall retain a qualified biologist to develop a Habitat Revegetation, Restoration, and Monitoring Program and submitted for CDFW approval prior to the commencement of Project component construction (including, but not limited to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation). At a minimum, the program shall include the following:~~ • ~~A description of the purpose and goals of the restoration~~ • ~~Identification of success criteria and performance standards~~ • ~~Methods of site preparation, including topsoil salvage and replacement procedures~~ • ~~Irrigation plan and schedule~~ • ~~Best Management Practices (BMPs)~~ • ~~Maintenance and monitoring program~~ • ~~Adaptive management strategies~~ • ~~Key stakeholders and responsible parties~~ • ~~Funding~~ • ~~Contingencies~~ **Mitigation Measure BIO-20:** Above, shall apply **Mitigation Measure BIO-21:** Above, shall apply	
3.4 Cultural Resources and Tribal Resources			
CUL-1: Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.	PS	**Mitigation Measure CUL-1:** Cultural Resources Professional Qualifications Standards PWD shall retain an archaeologist and architectural historian meeting the minimum professional qualifications standards set forth by the Secretary of the Interior (SOI) (codified in 36 Code of Federal Regulations [CFR] Part 61; 48 FR 44738-44739) (Qualified Archaeologist and Qualified Architectural Historian) to oversee the implementation of all mitigation related to cultural resources. All cultural resources documentation resulting from the program shall be filed with the South-Central Coastal Information Center upon document completion. **Mitigation Measure CUL-2:** Historic Resources Assessment	SU

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		Prior to Project-related construction activities involving demolition or alteration of buildings and/or structures or the construction of above ground infrastructure, the Qualified Architectural Historian shall conduct a historic resources assessment of affected properties over 45 years in age. The assessment shall include a records search at the South-Central Coastal Information Center or review of a prior record search conducted within the previous one year; a review of other pertinent archives and sources; a pedestrian field survey; recordation of all identified historic architectural resources on California Department of Parks and Recreation 523 forms; evaluation of resources which may be eligible for listing in the California Register under Criteria 1-4 (i.e., meets the definition for historical resource in CEQA Guidelines subdivision 15064.5[a]), and for local listing; and preparation of a technical report documenting the methods and results of the assessment. If a historic architectural resource is found eligible, the Qualified Architectural Historian shall coordinate with the PWD to ensure the Project component is constructed in a manner consistent with the Secretary of the Interior's Standards. **Mitigation Measure CUL-3:** Archaeological Resources Assessment Prior to development of previously unevaluated Project components that involve ground disturbance, PWD shall retain a Qualified Archaeologist, defined as meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (codified in 36 CFR Part 61; 48 FR 44738-44739), to conduct an archaeological resources assessment including: a records search update at the South Central Coastal Information Center; a pedestrian field survey, where deemed appropriate by the Qualified Archaeologist; recordation of all identified archaeological resources on California Department of Parks and Recreation 523 forms; and preparation of a technical report documenting the methods and results of the study, and providing an assessment of the Project area's archaeological sensitivity and the potential to encounter subsurface archaeological resources and human remains. All identified archaeological resources shall be assessed for the Project's potential to result in direct and/or indirect effects to those resources and any archaeological resource that cannot be avoided shall be evaluated for its potential significance prior to PWD's approval of Project plans and publication of subsequent CEQA documents. The Qualified Archaeologist shall provide recommendations regarding archaeological monitoring to be conducted in accordance with Mitigation Measure CUL-4, protection of avoided resources and/or recommendations for additional work or treatment of significant resources that will be affected by the Project. **Mitigation Measure CUL-4:** Construction Worker Cultural Resources Sensitivity Training For Project components involving ground disturbance, the Qualified Archaeologist shall implement a cultural resources sensitivity training program. The Qualified Archaeologist, or their designee, shall instruct all construction personnel of the types of archaeological resources cultural materials that may be encountered, cultural sensitivity issues, applicable laws protecting cultural resources, the proper treatment procedures to be enacted in the event of an inadvertent discovery of archaeological cultural resources materials or human remains, applicable laws protecting archaeological resources, and confidentiality of discoveries. Tribal representatives from each of the tribes consulting on the Palmdale Ditch Conversion Project shall be allowed to attend and/or participate in the training should they elect to and shall be given a minimum of ten days' notice prior to the training. In the event that construction crews are phased, additional trainings shall be conducted for new construction personnel. The PWD, or their construction contractor(s), shall ensure construction personnel are made available for and attend	

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		the training. PWD shall retain documentation demonstrating attendance. **Mitigation Measure CUL-5:** Archaeological Resources Monitoring Archaeological monitoring shall be required for programmatic Project components and for the Palmdale Ditch Conversion Project as outlines below. • **Proposed Project Requirements.** Archaeological monitoring shall be determined by the Qualified Archaeologist based on the results of the archaeological resources assessment conducted under CUL-3 and requires the preparation of a Cultural Resources Monitoring Plan (CRMP) prior to the start of Project-related ground disturbance. The CRMP should discuss the monitoring protocols to be carried out during Project construction and should outline the appropriate measures to be followed in the event that cultural resources are encountered and outline requirements for the final monitoring report. In general, for ground- disturbing activities in geologic units/sediments of Higher Sensitivity for encountering subsurface prehistoric archaeological resources or human remains, full time archaeological monitoring shall be conducted, unless the Qualified Archaeologist has established as part of the archaeological assessment that previous disturbances have reduced the sensitivity for prehistoric archaeological resources to the extent that no or limited archaeological monitoring is warranted. No archaeological monitoring shall be required in geologic units/sediments of Lower Sensitivity for encountering subsurface prehistoric archaeological resources or human remains, or in those areas that have been previously subject to monitoring as part of the Project. If the Qualified Archaeologist determines as a result of the archaeological assessment that areas proposed for ground disturbance may be sensitive for historic-period archaeological resources, those areas shall also be subject to archaeological monitoring at a frequency determined by the Qualified Archaeologist. In all cases, the Qualified Archaeologist shall have the discretion to modify the frequency of monitoring based on soils and stratigraphy observed, the extent of past disturbances, and the type of construction methods employed. Generally, monitoring will not be required of activities employing construction methods such as tunneling and well drilling where soil profiles and spoils are not observable to monitors. The archaeological monitor(s) shall be familiar with the types of resources that could be encountered and shall work under the direct supervision of the Qualified Archaeologist. The number of archaeological monitors required to adequately observe ground-disturbing activities is dependent on the archaeological sensitivity of the area and construction scenario and shall be established by the Qualified Archaeologist. The archaeological monitor(s) shall keep daily logs detailing the types of activities and soils observed, and any discoveries. Archaeological monitor(s) shall have the authority 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 the PWD and the Native American monitor(s) pursuant to TCR-1. • **Palmdale Ditch Conversion Project Requirements.** Prior to the start of Project-related ground-disturbing activities, a qualified archaeologist shall be retained to prepare a CRMP and provide archaeological monitoring for the Project. The CRMP shall discuss the monitoring protocols to be carried out during Project construction and shall outline the	

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		appropriate measures to be followed in the event that cultural resources are encountered. The CRMP shall be submitted to Palmdale Water District (PWD) for dissemination to the tribes consulting on the Project. Once all parties review and agree to the plan, it shall be adopted by PWD – the plan must be adopted prior to permitting for the Project. Any and all findings shall be subject to the protocol detailed within the CRMP. A copy of the final CRMP shall be provided to PWD (and United States Bureau of Reclamation [USBR]/United States Forest Service [USFS], depending on land jurisdiction) and the tribes consulting on the Project upon completion. Archaeological monitoring shall be limited to initial ground disturbance, which is defined as construction-related earthmoving of sediments from their native place of deposition (which includes, but is not limited to, tree/shrub removal and planting, clearing/grubbing, grading, leveling, excavation, trenching, compaction, plowing, fence/gate removal and installation, drainage and irrigation removal and installation, hardscape installation [boulders, walls, etc.], and archaeological work) and does not include any secondary movement of sediment that might be required for the Project (e.g., backfilling). Archaeological monitoring shall be performed under the direction of an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (National Park Service 1983). The archaeological monitor shall have the authority to halt and redirect work should any archaeological resources be identified during monitoring. If archaeological resources are encountered during ground-disturbing activities, work within 60 feet of the find shall halt, and the find shall be evaluated for listing in the California Register of Historic Resources (CRHR)/National Register of Historic Places (NRHP). A sufficient number of archaeological monitors shall be present each workday to ensure simultaneously-occurring ground-disturbing activities receive thorough levels of monitoring coverage. Archaeological monitoring may be reduced or halted at the discretion of PWD (and USBR/USFS, depending on land jurisdiction), in consultation with the qualified archaeologist and the tribes consulting on the Project, as warranted by conditions such as encountering bedrock, sediments being excavated are fill, or negative findings during the first 50 percent of ground disturbance. If monitoring is reduced to spot-checking, spot-checking shall occur when ground disturbance moves to a new location within the Project site and/or when ground disturbance extends to depths not previously reached (unless those depths are within bedrock). Furthermore, monitoring may be terminated if it is determined the soils within the Area of Potential Effects do not have the potential to contain cultural resources. **Mitigation Measure CUL-6**: Archaeological Resources Discoveries In the event that archaeological cultural resources are unexpectedly encountered during ground-disturbing activities, work within 60 feet of the find shall halt, an Environmentally Sensitive Area physical demarcation/barrier installed, and a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) contacted immediately to evaluate the resource. If the resource is determined by the qualified archaeologist to be prehistoric Native American in origin, then a Native American representative from the tribes consulting on the Project shall also be contacted to participate in the evaluation of the resource. If the qualified archaeologist and/or Native American representative from the tribes consulting on the Project determines it to be appropriate, archaeological testing for CRHR/NRHP eligibility shall be	

Impact Statement	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
		completed. If the resource proves to be eligible for the CRHR/NRHP and significant impacts to the resource cannot be avoided via Project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, pursuant to the requirements of CEQA Guidelines Section 15126.4(b)(3)(C). Should the find be prehistoric deemed Native American in origin, all plans for analysis shall be reviewed and approved by PWD (and USBR/USFS, depending on land jurisdiction) and the tribes consulting on the Project prior to implementation, and all removed material shall be temporarily curated on site. The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative(s) from the tribes consulting on the Project, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. PWD shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, pursuant to CEQA Guidelines Section 15126.4(b)(3)(C). PWD shall work with the tribes consulting on the Project to determine the final disposition of any cultural materials removed. However, if the tribes consulting on the Project are not in agreement on the final disposition, PWD shall rebury the artifacts within the Project site in a location free from future disturbance and share the location with the tribes consulting on the Project. Items recovered from USFS lands must be curated in accordance with 36 CFR 79 and cannot be reburied. All draft records/reports containing the significance and treatment findings and data recovery results shall be prepared by the qualified archaeologist and submitted to PWD (and USBR/USFS, depending on land jurisdiction) and the tribes consulting on the Project for their review and comment. A copy of the final report and all site/isolate records shall be submitted to PWD (and USBR/USFS, depending on land jurisdiction), the tribes consulting on the Project, and the South Central Coastal Information Center. **Mitigation Measure CUL-7: Curation and Disposition of Cultural Materials** PWD shall arrange curation for all Native American archaeological materials, with the exception of funerary objects or grave goods (i.e., artifacts associated with Native American human remains). For eligible Native American archaeological materials, the PWD shall first consider repositories that are accredited by the American Association of Museums and that meet the standards outlined in 36 CFR 79.9. If a suitable accredited repository is not identified, then the PWD shall consider non-accredited repositories as long as they meet the minimum standards set forth by 36 CFR 79.9. If a suitable non-accredited repository is not identified, then the PWD shall donate the collection to a local California Native American Tribe(s). Ineligible archeological materials shall also be donated to a local California Native American Tribe(s). If neither an accredited or non-accredited repository or Tribe accepts the collection, then the PWD may offer the collection to a public, non-profit institution with a research interest in the materials, or to a local school or historical society in the area for educational purposes. Disposition of Native American human remains and associated funerary objects or grave goods shall be determined by the landowner in consultation with the PWD and the Most Likely Descendant (MLD). The PWD shall curate all eligible historic-period archaeological material, or portions thereof at the discretion of the Qualified Archaeologist, at a repository accredited by the American Association of Museums that meets the standards outlined in 36 CFR 79.9. If no accredited repository accepts the collection, then the PWD may curate it at a non-accredited repository as long as it meets the minimum standards set forth by 36 CFR 79.9. If neither an accredited nor a non-accredited repository accepts the	

Impact Statement	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
		collection, then the PW may offer the collection to a public, non-profit institution with a research interest in the materials, or to a local school or historical society in the area for educational purposes. **Mitigation Measure CUL-8:** Historic American Engineering Survey-Like Documentation Package Prior to the demolition of the Palmdale Ditch (CA-LAN-1534H), PWD should document the structure in a Historic American Engineering Record -like documentation package. The report shall generally comply with the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation (68 Federal Register 43159), Level III. At a minimum, the Historic American Engineering Record Historical Report should include digital photographs of views of Palmdale Ditch and a short-form narrative historical report. Digital copies of the Historic American Engineering Record-like documentation package should be made available to the Los Angeles County Library Acton Agua Dulce Branch and the Palmdale City Library.	

DRAFT EIR CHAPTER 2 PROJECT DESCRIPTION

Text in the Draft EIR in Chapter 2 Project Description on page 2-10 has been revised accordingly to provide clarification, and reads as follows:

> These include carryover water, "Article 21" water, and ~~turnback pool water~~ Water Management Amendment which are defined as:
>
> - **Carryover water** is Table A water that is allocated to a contractor but not used by the end of the SWP contract year. If space is available, contractors may store up to 5,000 acre-feet (AF) of Table A water in the part of the San Luis Reservoir owned by the SWP for delivery the following year. However, if the San Luis Reservoir must spill that season, the contractor's carryover water will be lost. PWD has stored an average of 2,442 AFY of this water from 2011 and 2021.
> - **Article 21 water** is additional water that PWD may receive temporarily, in addition to its approved Table A water. This water is only offered occasionally, usually in wet hydrologic years, when there is more water in the Delta than the SWP contractors are entitled to. Historically, PWD has not received much of its water. Between 2011 and 2021, PWD has received a total of 335 AFY of Article 21 water.
> - ~~**Turnback pools** are a mechanism for contractors with extra Table A water to sell their water back to other contractors. Since 2011, PWD has only brought about 26 AF of water from turnback pools to supplement its water supplies.~~
> - **Water Management Amendment** allows SWP contractors to buy or sell their Table A, Carryover water, previously banked Table A water, and Article 21 water with each other.

The text in the Draft EIR on page 2-12 under Section 2.5-2 Recycled Water has been revised to as follows:

> The Palmdale Water Reclamation Plant currently provides tertiary treatment for approximately ~~12,000~~ 10,200 AFY of wastewater generated in and around the City and produces an average of ~~10,700~~ 9,000 AFY of Title 22 recycled water. A contract with LACSD entitles PWD to up to 5,325 AFY of recycled water. There is also an agreement with the LACSD for 2,000 AFY of recycled water to provide to customers throughout the City's service area, which has since been transferred to PRWA.
>
> The City is a recycled water customer through PRWA for landscape irrigation and construction water. The remaining portion of Palmdale Water Reclamation Plant recycled water is beneficially used for agricultural irrigation.

The following sentence has been added to the second paragraph on page 2-15 of Chapter 2 Project Description:

…The 2020 Well Rehabilitation Prioritization Program noted that a well site assessment and preliminary design had been completed on two potential new replacement production wells, designated Well 36 and 37, which would be situated in the north wellfield (pressure zone 2800). However, siting of wells will take into account a number of factors including groundwater production rates, district owned facilities, potential environmental effects, cost, and other engineering factors and may occur anywhere within the PWD boundaries. No CEQA documentation was prepared for the 2020 Well Rehabilitation Prioritization Program.

On page 2-38 Table 2-7: Regulatory Requirements and Authorizations and Approvals was updated to reflect this required easement.

Agency	Type of Approval	Water Supply Element
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement	Local Supplies – Palmdale Ditch Conversion
California Department of Fish and Wildlife	Incidental Take Permit	Local Supplies – Palmdale Ditch Conversion
Antelope Valley Air Quality Management District (AVAQMD)	Permit to Construct and Operate	Local Supplies – Palmdale Ditch Conversion
LA Metro	License Agreement, Encroachment Permit	Local Supplies – Palmdale Ditch Conversion
Metrolink	Encroachment Permit	Local Supplies – Palmdale Ditch Conversion
Los Angeles County	Grading Permit, Road Permit, Encroachment Permit	Local Supplies – Palmdale Ditch Conversion
Los Angeles County Sanitation District	Industrial Wastewater (IW) Discharge permit; Trunk Sewer Connection permit to discharge brine or other wastewater into sewerage system	Recycled Water – Pure Water Antelope Valley
Los Angeles County Sanitation District	Submittal of detailed project plans and specifications	Groundwater - injection wells and conveyance pipelines Recycled Water – Pure

Agency	Type of Approval	Water Supply Element
		Water Antelope Valley
Los Angeles County Sanitation District	Sewer easement	Recycled Water – Pure Water Antelope Valley
Los Angeles County Airport Land Use Commission	Submittal of plans for facilities occurring within the Palmdale Regional Airport airport influence area prior to final design	Recycled Water – Pure Water Antelope Valley
Federal Aviation Administration	Notice of Proposed Construction or Alteration	Recycled Water – Pure Water Antelope Valley
Los Angeles Department of Water and Power	Encroachment Permit	Local Supplies – Palmdale Ditch Conversion
City of Palmdale	Encroachment Permit, Grading Permit	Local Supplies – Palmdale Ditch Conversion
U.S. Army Corps of Engineers	Clean Water Act Section 404 Permit	Local Supplies – Palmdale Ditch Conversion
United States Forest Service	Special Use Permit	Local Supplies – Palmdale Ditch Conversion
Lahontan Regional Water Quality Control Board	Clean Water Act Section 401 Water Quality Certification	Local Supplies – Palmdale Ditch Conversion
State Water Resources Control Board	Approval of the SWPPP under the statewide NPDES Construction General Permit	Local Supplies – Palmdale Ditch Conversion
State Water Resources Control Board	Water Supply Permit Amendment	Recycled Water – Pure Water Antelope Valley
California Department of Transportation	Transportation Permit	All
California Department of Water Resources	Encroachment Permit for facilities that cross the California Aqueduct	Local Supplies – Palmdale Ditch Conversion
California Department of Water Resources	Encroachment Permit, Turnout Agreement	Local Supplies – Palmdale Ditch Conversion
California Division of Occupational Safety and Health	Mining and Tunneling Unit Permit	Local Supplies – Palmdale Ditch Conversion

DRAFT EIR SECTION 3.1 AESTHETICS

Text in the Draft EIR Section 3.1 Aesthetics on page 3.1-17 has been revised accordingly to provide clarification, and reads as follows:

IMPACT AES-3 FINDINGS

Significance before Mitigation: ~~Potentially Significant~~ Less than Significant

~~**Mitigation Measures**: Mitigation Measures AES-1, AES-2, AES-3.~~

~~**Significance after Mitigation**: Less than Significant after Mitigation Incorporated~~

DRAFT EIR SECTION 3.2 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Text in the Draft EIR in Section 3.2 Air Quality and Greenhouse Gas Emissions on page 3.2-24 has been revised accordingly to provide clarification, and reads as follows:

As such, **Mitigation Measures AIR-1** through **AIR-3** would apply to the construction phase. Implementation of **Mitigation Measures AIR-1, AIR-2**, and **AIR-3** would reduce construction-related emissions to below significance thresholds. Impacts would be less than significant with mitigation incorporated.

DRAFT EIR SECTION 3.3 BIOLOGICAL RESOURCES

On page 3.3-70, Impact Findings for Impact BIO-1 is revised as follows:

IMPACT BIO-1 FINDINGS

Significance before Mitigation: Potentially Significant

Mitigation Measures: Mitigation Measures BIO-1 through ~~BIO-18, BIO-20 and~~ BIO-21.

Significance Determination: Less than Significant with Mitigation.

Mitigation Measure BIO-2: Special-Status Plant Surveys, Avoidance Measures, Mitigation and Monitoring in the Draft EIR in Section 3.3 Biological Resources on page 3.3-89 has been revised accordingly in response to comment:

Mitigation Measure BIO-2: Special-Status Plant Surveys, Avoidance Measures, Mitigation and Monitoring Plan

[…]

- Criteria and performance standards by which to measure the success of the mitigation, including replacement of impacted plants at a minimum 1:1 ratio, to be determined in consultation with CDFW if a Lake or Streambed Alteration Agreement pursuant to CFGC Section 1602 or Incidental Take Permit pursuant to CFGC Section 2081 is otherwise required for the Project component;

Mitigation Measure BIO-3: Joshua Tree Census Survey, Avoidance, Minimization and Compensation Measures on page 3.3-90 has been revised accordingly in response to comment:

Mitigation Measure BIO-3: Joshua Tree Census Survey, Avoidance, Minimization, and Compensation Measures

[…]

- PWD shall submit payment of an in-lieu fee to CDFW pursuant to CDFW's standard mitigation fee structure for western Joshua tree in effect at the time of application for an Incidental Take Permit. ~~The current (2024) standard mitigation fee structure is as follows:~~
  - ~~Trees five meters or greater in height - $2,500 per tree~~
  - ~~Trees one meter or greater but less than 5 meters in height - $500 per tree~~
  - ~~Trees less than one meter in height - $340 per tree~~

Mitigation Measure BIO-4: Arroyo Toad, Desert Tortoise, Tricolored Blackbird, and Least Bell's Vireo Avoidance, Minimization and Compensation Measures on page 3.3-91 has been revised accordingly in response to comment:

Mitigation Measure BIO-4: Arroyo Toad, Desert Tortoise, Tricolored Blackbird, and Least Bell's Vireo Avoidance, Minimization and Compensation Measures

[…]

If the proposed Project results in permanent impacts to habitat occupied by special-status wildlife species, USFWS and CDFW shall be consulted to ensure compliance with the Endangered Species Act and/or requirements for avoidance, minimization, or mitigation measures (e.g., replacement of impacted occupied habitat at a minimum 1:1 ratio, to be determined in consultation with USFWS and/or CDFW, as applicable).

Mitigation Measure BIO-5: Crotch's Bumble Bee Avoidance, Minimization, and Compensation Measures on page 3.3-92 has been revised accordingly in response to comment:

Mitigation Measure BIO-5: Crotch's Bumble Bee Avoidance, Minimization, and Compensation Measures

[…]

- If Crotch's bumble bee is determined to be present on the Project component site, floral resources associated with the species that will be removed or damaged by Project component activities in the areas of the Project component site where Crotch's bumble bee is detected and documented shall be replaced at a minimum 1:1 ratio, to be determined in consultation with CDFW as part of the

Incidental Take Permit process pursuant to CFGC Section 2081 for the Project component. Planning and implementation of suitable habitat replacement may be integrated into the Habitat Revegetation, Restoration, and Monitoring Program described under Mitigation Measure BIO-19.

Mitigation Measure BIO-9: Mohave Ground Squirrel Avoidance and Minimization Measures on page 3.3-97 has been revised accordingly in response to comment:

Mitigation Measure BIO-9: Mohave Ground Squirrel Avoidance and Minimization Measures

[…]

- If burrows are identified during the survey that are suspected or known to be occupied by Mohave ground squirrel and cannot be avoided, the qualified biologist shall prepare a Mohave Ground Squirrel Relocation Plan outlining measures to relocate individual Mohave ground squirrels prior to construction start. The plan shall be submitted to PWD and CDFW for review and approval and shall be implemented prior to commencement of Project component activities in work areas with suspected or known Mohave ground squirrel burrows. The Plan shall outline measures for burrow excavation, handling of individuals, identification of proposed relocation areas, and release of relocated individuals after the conclusion of all grading, clearing, and construction activities. The Plan shall also detail restoration of and/or compensatory mitigation, at a minimum 1:1 ratio, of occupied Mohave ground squirrel habitat that is temporarily or permanently impacted by the Project activities if required by CDFW as part of the Incidental Take Permit process pursuant to CFGC Section 2081 for the Project component. A report documenting relocation activities and outcomes shall be prepared by the qualified biologist and submitted to PWD and CDFW for review and approval after completion of relocation activities.

Mitigation Measure BIO-17: Nesting Bird Surveys and Avoidance and Minimization Measures on page 3.3-104 has been revised in response to comment:

Mitigation Measure BIO-17: Nesting Bird Surveys and Avoidance and Minimization Measures

This mitigation measure is applicable to the Palmdale Ditch Conversion project and other Project components for which suitable habitat for nesting birds is identified during the habitat assessment conducted pursuant to Mitigation Measure BIO-1. Project component construction activities shall occur outside of the bird breeding season (February 1 to August 31) to the extent practicable. If construction must commence within the bird breeding season, PWD shall retain a qualified biologist to conduct a pre-construction nesting bird survey within the disturbance footprint plus a minimum buffer of 100 feet to a maximum buffer of 500 feet depending on species, work activity, and existing ambient conditions ~~100-foot buffer (300 feet for raptors), where feasible~~, no more than seven days prior to initiation of ground disturbance (including, but not limited

to, site preparation, staging and mobilization, vegetation clearance/mowing/trimming, grading, and excavation) in each work area. If the Project component is phased or construction activities stop for more than one week, a subsequent pre-construction nesting bird survey shall be conducted prior to each phase of construction, if initiated during the bird breeding season.

Pre-construction nesting bird surveys shall be conducted during the time of day when birds are active and shall factor in sufficient time to perform this survey adequately and completely. A brief report of the nesting bird survey results, if applicable, shall be submitted to PWD for review and approval prior to ground disturbance and/or vegetation removal activities.

If no nesting birds are observed during pre-construction surveys, no further action is required. If nests are found, an appropriate avoidance buffer of up to 300 feet ~~ranging in size from 25 to 50 feet~~ for passerine (perching birds) nests and up to 500 ~~300~~ feet for active, non-listed raptor nests ~~(depending on the species and the proposed work activity)~~ shall be determined by the qualified biologist and demarcated with bright orange construction fencing or other suitable flagging. Active nests shall be monitored at a minimum of once per week until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or parental care for survival. No construction activity shall occur within this buffer until the qualified biologist confirms the breeding/nesting is completed and all the young have fledged. If Project component activities must occur within the buffer, they shall only be conducted at the discretion of the qualified biologist.

Mitigation Measure BIO-19: Sensitive Natural Communities and Jurisdictional Features Avoidance, Minimization Measures on page 3.3-106 has been revised accordingly in response to comment:

Mitigation Measure BIO-19: Sensitive Natural Communities and Jurisdictional Features Avoidance, Minimization Measures

[…]

- If impacts to sensitive natural communities cannot be avoided, PWD shall identify compensatory mitigation prior to disturbance of the features. Mitigation may take the form of permittee-responsible, on-site or off-site mitigation or the purchase of credits from an approved mitigation bank or through applicant-sponsored mitigation (e.g., purchase and/or dedication of land for mitigation). If required, compensatory mitigation for unavoidable impacts to sensitive vegetation communities shall be accomplished at a minimum ratio of 1:1; however, the final ratio shall be determined and approved by CDFW if a Lake or Streambed Alteration Agreement pursuant to CFGC Section 1602 or Incidental Take Permit pursuant to CFGC Section 2081 is required for the Project component.

Mitigation Measure BIO-20: Aquatic Resources Delineation and Compensatory Mitigation on page 3.3-107 has been revised accordingly in response to comment:

> **Mitigation Measure BIO-20: Aquatic Resources Delineation and Compensatory Mitigation**
>
> […]
>
> - If impacts to jurisdictional waters and wetlands cannot be avoided, PWD shall identify compensatory mitigation prior to disturbance of the features. Compensatory mitigation for impacts to the jurisdictional extents of the Palmdale Ditch shall be provided at a minimum 0.5:1 ratio, unless a higher ratio is required by Lahontan RWQCB, CDFW, and/or USACE, given the Ditch's altered hydrology as a manmade structure constructed entirely in uplands that is artificially lined in a number of areas (concrete, synthetic liner, elevated flume) and its controlled flow that fluctuates in quantity and timing from year to year depending on annual climatic conditions and available water supply in Littlerock Reservoir. Compensatory mitigation for impacts to other jurisdictional waters and wetlands shall be provided at a minimum 1:1 ratio, unless a higher ratio is required by Lahontan RWQCB, CDFW, and/or USACE.

DRAFT EIR SECTION 3.4 CULTURAL AND TRIBAL CULTURAL RESOURCES

Texts in Draft EIR Section 3.4 Cultural and Tribal Cultural Resources on page 3.4-3 has been edited to provide clarification on reference:

> At a site Lovejoy Springs, which has a prominent Gypsum component, a group inhumation with at least nine individuals was uncovered, including a child buried with approximately 3,000 Olivella shell beads from the southern Californian coast (Price et al. ~~2008~~ 2009).
>
> […]
>
> Rose Springs sites along Amargosa Creek, west of Palmdale, contain workshops for the production of beads made out of steatite and chlorite schist, materials native to that area (Price et al. ~~2008~~ 2009).
>
> […]
>
> The frequent use of obsidian is a defining feature of the Rose Springs period. Obsidian from the Coso volcanic field, 70 miles north of Mojave, was imported in near-finished form for use in making lithic tools (Price et al. ~~2008~~ 2009).

Text in the Draft EIR in Section 3.4 Cultural and Tribal Resources on page 3.4-7 has been revised accordingly in response to comment:

> At the time of European contact, numerous groups occupied the area in and surrounding the Antelope Valley. The southeastern portion of the Valley, around the Mojave River, was inhabited by the Serrano and Vanyume. The Vanyume are the desert division of the Serrano; they were first mentioned as the Beneme by Father Francisco Garces in 1776. Later, the ethnic designation Vanyume was adopted by Kroeber who mistranslated the name. Sutton and Earle (2017) discuss the relationship between the Mountain and Desert divisions of the Serrano at depth, suggesting that they are two divisions of the Serrano proper, not independent political, linguistic, or cultural entities (Earle 1997).
>
> Robinson (1977) is the first to suggest that the local groups, which inhabited the Antelope Vvlley occupied a central geographical location. There groups were "a central point of contact between four major centers of cultural development in central and southern California;" this included Shoshonean people of the desert proper to the east, the Yokuts to the north, the Chumash to the west, and the Gabrieliño to the south. The territory of the Tataviam centered on the southwestern extent of the Antelope Valley, the Santa Clara River drainage, and possibly the Sierra Pelonas and the Palmdale area (Sutton 1988). The Kitanemuk inhabited the southern Tehachapi Mountains and the northern and central portion of the Antelope Valley. Finally, during the historic period, there is some evidence for the occupation of the Western Mojave by the Chemehuevi. The groups that are known to have lived in the vicinity of the proposed project area (Kitanemuk, Tataviam, Serrano, and Chemehuevi) are described in more detail below.

Texts in Draft EIR Section 3.4 Cultural and Tribal Cultural Resources on page 3.4-8 has been edited to provide clarification on reference:

> They lived in small villages where extended families lived in circular, dome-shaped structures made of willow frames covered with tule thatching. Each clan had one or more principal villages in addition to numerous smaller villages associated with the principal village (Price et al. ~~2008~~ 2009).

Texts in Mitigation Measure CUL-5: Archaeological Resources Monitoring on page 3.4-45 to 3.4-46 has been edited in response to comment:

> **Proposed Project Requirements.** Archaeological monitoring shall be determined by the Qualified Archaeologist based on the results of the archaeological resources assessment conducted under CUL-3 and requires the preparation of a Cultural Resources Monitoring Plan (CRMP) prior to the start of Project-related ground disturbance. The CRMP should discuss the monitoring protocols to be carried out during Project construction and should outline the appropriate measures to be followed in the event that cultural resources are encountered and outline requirements for the final monitoring report.

Text in the Draft EIR in Section 3.4 Cultural and Tribal Cultural Resources on page 3.4-54 has been revised accordingly to provide clarification on reference:

Price, Barry, Alan G. Gold, Barbara S. Tejada, David D. Earle, Suzanne Griset, Jay B. Lloyd, Mary Baloian, Nancy Valente, Virginia S. Popper, and Liza Anderson. The Archaeology of CA-LAN-192: Lovejoy Springs and Western Mojave Desert Prehistory. Prepared by Applied Earthworks for the County of Los Angeles, September ~~2008~~ 2009.

DRAFT EIR SECTION 3.7 HAZARDS, HAZARDOUS MATERIALS, AND WILDFIRE

Text in the Draft EIR in Section 3.7 Hazards, Hazardous Materials, and Wildfire on page 3.7-20 has been revised accordingly to provide clarification, and reads as follows:

> Operation of ~~existing~~ rehabilitated wells ~~that have been rehabilitated~~ would not have any impact as existing wells are ~~not~~ located ~~within~~ near ~~any~~ active hazardous sites. **Mitigation Measure HAZ-3** ensures ~~ensured~~ replacement wells ~~would~~ will not be located ~~within~~ near or within ~~any~~ active hazard ~~hazardous~~ sites. Therefore, there would be no impact.

DRAFT EIR CHAPTER 4 ALTERNATIVES

Text in the Draft EIR in Chater 4 Alternatives on page 4-7 has been revised accordingly to provide clarification, and reads as follows:

> SWRP Update Alternative 3 was selected as the Reduced Project Alternative. Under the Reduced Project Alternative, PWD would not implement the Palmdale Ditch Conversion project and would not purchase ~~2,000~~ 1,000 AFY of production rights from other groundwater users in the Antelope Valley Groundwater Basin

Text in the Draft EIR in Chater 4 Alternatives on page 3-8 has been revised accordingly to provide clarification, and reads as follows:

> Without the purchase ~~2,000~~ 1,000 AFY of production rights from other groundwater users in the Antelope Valley Groundwater Basin…

CHAPTER 4. FINAL EIR REPORT PREPARERS

4.1 LEAD AGENCY – PALMDALE WATER DISTRICT

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4.2 CONSULTANTS

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CHAPTER 5. REFERENCES

CEQA. California Public Resources Code Sections 21000 et. Seq.

CEQA Guidelines. Code of Regulations, Title 14, Division 6, Chapter 3.

Price, Barry, Alan G. Gold, Barbara S. Tejada, David D. Earle, Suzanne Griset, Jay B. Lloyd, Mary Baloian, Nancy Valente, Virginia S. Popper, and Liza Anderson. The Archaeology of CA-LAN-192: Lovejoy Springs and Western Mojave Desert Prehistory. Prepared by Applied Earthworks for the County of Los Angeles, September ~~2008~~ 2009.

Robinson, R.W. 1977. The Prehistoric of the Antelope Valley, California: An Overview. Kern County Archaeological Society Journal 1: 43-48.

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PVD
EST. 1918

Exhibit D:
Strategic Water Resources Plan
June 2023

STRATEGIC WATER RESOURCES PLAN

June 2023

0012222.00

Palmdale Water District

Woodard & Curran

woodardcurran.com

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EXECUTIVE SUMMARY

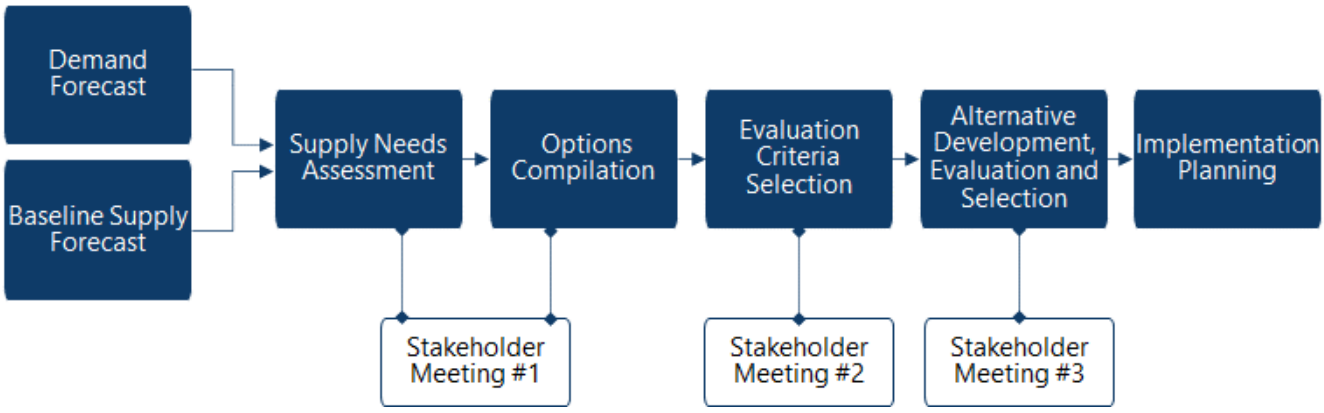
Palmdale Water District (PWD or the District), located in the Antelope Valley in Los Angeles County, provides water to the City of Palmdale and adjacent unincorporated areas of Los Angeles County. PWD has served water to the area in three different centuries, having started as the Palmdale Water Company in the late 1800s and later as the Palmdale Irritation District in the early 1900s to serve irrigation water to agricultural lands. The area has grown and developed significantly since that time, and today the District serves only municipal and industrial water. It continues serving and evolving in the 2000s to meet the needs of its customers.

PWD currently serves over 126,000 customers using a combination of groundwater from the Antelope Valley Groundwater Basin, surface water from Littlerock Reservoir, imported water from the State Water Project (SWP), and recycled water from the Palmdale Water Reclamation Facility.

PWD has developed this Strategic Water Resources Plan (SWRP) to provide a long-term water supply strategy that meets the needs of a growing population under changing future conditions and determines the appropriate funding sources.

The planning timeline for this study focused on three fundamental timeframes: today, near-term (2025 to 2035), and long term (2035 to 2050), and used the process depicted below. Throughout the process, PWD staff were engaged to gather technical information and feedback. In addition, stakeholder meetings were conducted with PWD staff and Board members at key points in the process to present information and decision points to be agreed upon.

Figure ES-1: SWRP Process and Stakeholder Engagement Points



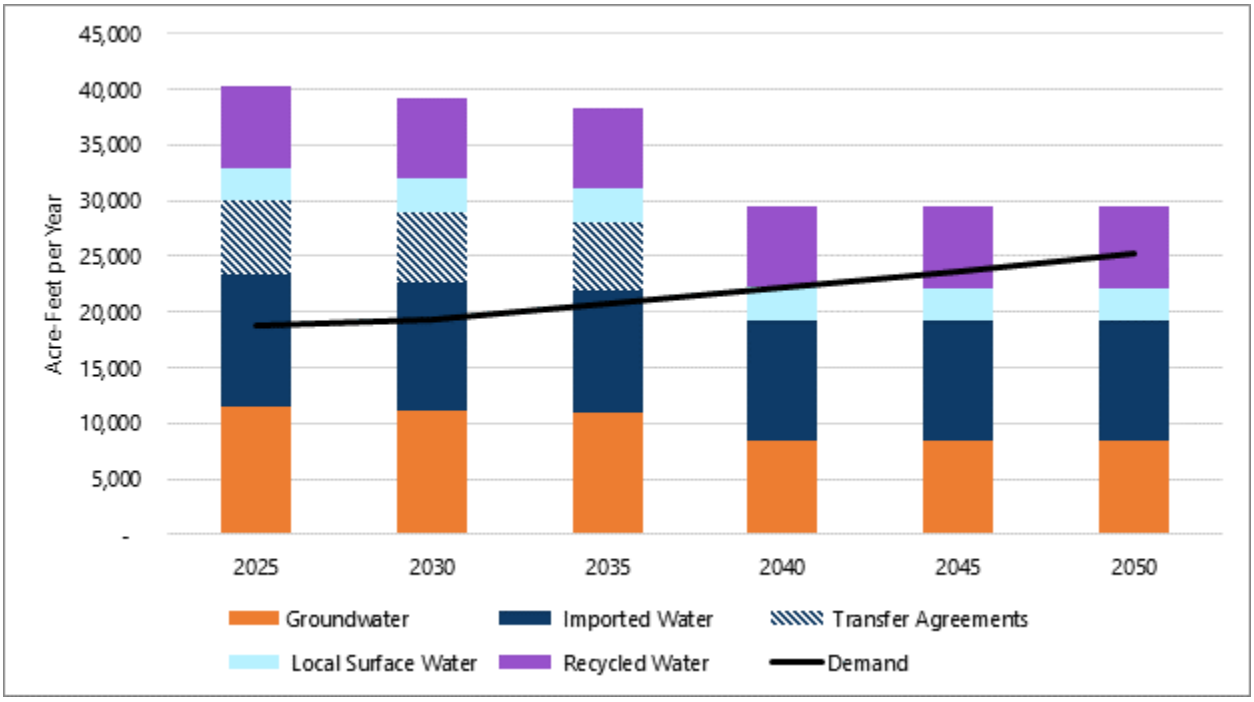
Supply Need

Demand in the PWD service area is projected to increase by 18,700 AFY to 25,200 AFY (an increase of 6,500 AFY) by 2050, as shown in **Figure ES-2**. Demand growth is expected to be driven by a combination of new residential development and densification of existing residential developments.

As mentioned above, PWD relies on a combination of groundwater, local surface water, imported water, transfer agreements and recycled water to meet demand. Through 2035, available potable and non-potable supplies are anticipated to average at least 38,000 AFY. These will be reduced to about 30,000 AFY in the period after 2035 through 2050, partly due to the expiration of transfer agreements with Butte County and

Littlerock Creek Irrigation District in 2035. In addition, while there is approximately 7,300 AFY of recycled water available for use, PWD currently only has non-potable demands for 100 AFY of recycled water. Projected average annual baseline water supplies available within PWD's service area are shown in **Figure ES-2.**

Figure ES-2: Projected Baseline Water Supplies Available within PWD Service Area (Facility Unconstrained) versus Demand Forecast



Due to a combination of growing demand, facility limitations that restrict the ability to access all of the supplies shown in **Figure ES-2**, and reduced supply reliability due to climate change, shortages are expected to occur every year starting in 2030. The projected water supply shortage frequency and depth of unmet demand through 2050 is summarized in **Table ES-1**.

Table ES-1: Projected Water Supply Shortage Frequency and Depth of Unmet Demand

	2025	2030	2035	2040	2045	2050
Shortage Probability	56%	100%	100%	100%	100%	100%
Average Annual Shortage (AF)	380	540	1,030	2,080	3,490	5,360
Average Annual Shortage (% of demand)	2%	3%	5%	9%	15%	21%
Maximum Annual Shortage (AF)	4,280	4,620	5,730	8,490	14,360	17,370
Maximum Annual Shortage (% of demand)	23%	24%	28%	38%	60%	67%

There are several water resources options available to address these projected water supply shortages, including imported water, groundwater, recycled water, local surface water, banking, and conservation. PWD evaluated these options with respect to a variety of factors including supply reliability under droughts and emergency outages, cost efficiency, water quality, sustainability, funding potential, implementability, and institutional independence. Through this evaluation process, PWD has developed the following recommended preferred alternative to meet PWD's future water supply needs.

Preferred Alternative

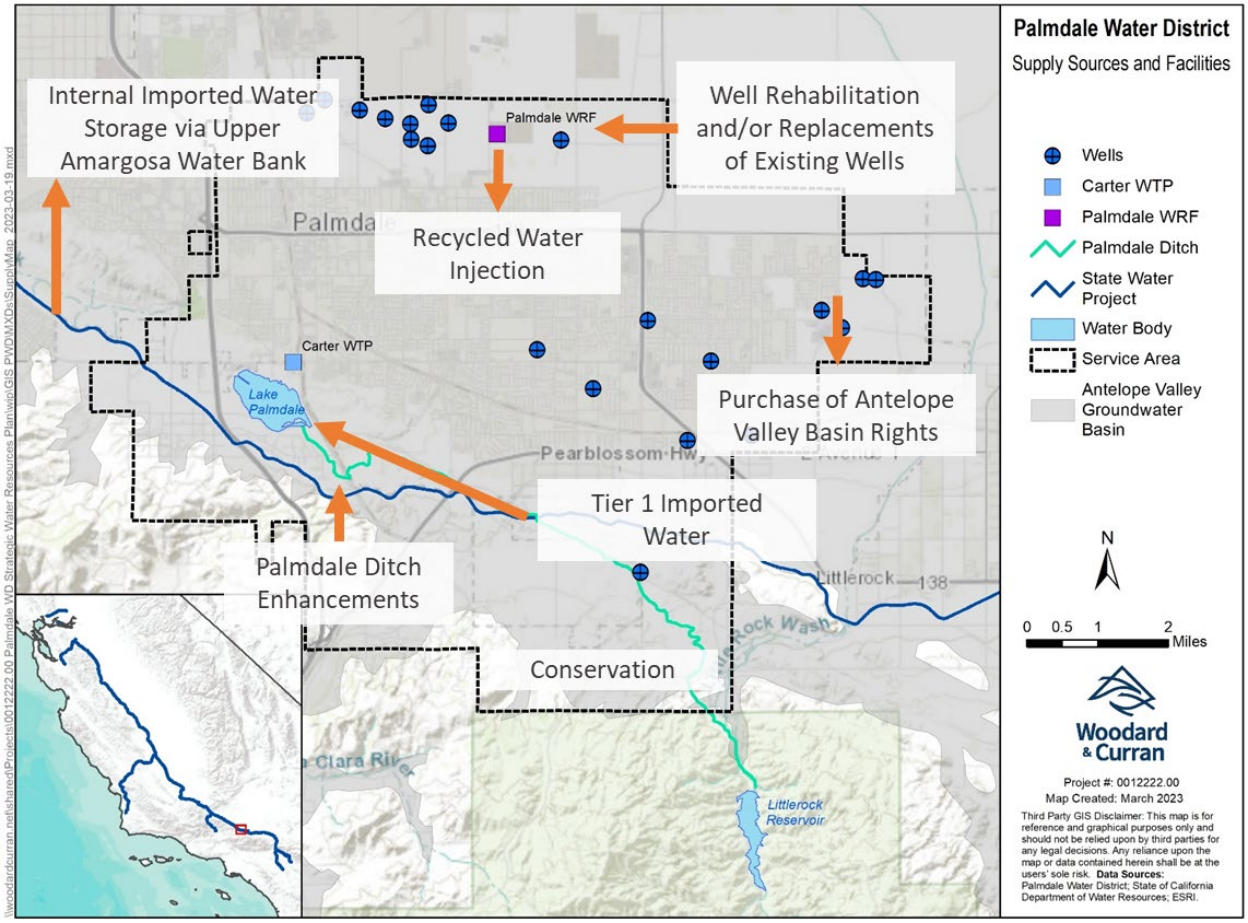
The preferred alternative focuses on maximizing local water supplies while storing water in the Antelope Valley for use during periods of supply shortage. The projects and water supply targets for the preferred alternative are shown in **Table ES-2**. The locations of new facilities included in the preferred alternative are shown in **Figure ES-3.**

Table ES-2: Water Supply Targets for the Preferred Alternative

Water Supply Element	Current	Target for 2050
Supply Volumes (average)		
Imported Water - Potable - Recharge	 6,400 AFY 0 AFY	 9,600 AFY[1] 1,200 AFY[1]
Groundwater Pumping	8,000 AFY	11,200 AFY
Littlerock Reservoir	3,000 AFY	4,500 AFY
Recycled Water - Non-potable - Recharge via injection	 100 AFY 0 AFY	 100 AFY 5,000 AFY
Facility Capacities		
Leslie O. Carter WTP (Carter WTP)	35 mgd	35 mgd
Pure Water Treatment	0 mgd	5 mgd
Injection Wells	0 mgd	4.5 mgd
Production Wells	9.8 mgd	32 mgd
Water Storage in Antelope Valley Basin	0 AF	32,500 AF

1. Actual volume of imported water used will vary significantly depending on Table A allocations. In years of lower imported water availability, it's assumed that pumping will be increased to meet demands.

Figure ES-3: Preferred Alternative Facility Locations



To help guide PWD in achieving these targets, the strategic objectives shown in **Table ES-3** have been established.

Table ES-3: Recommended Strategic Objectives for PWD

Water Supply Element	Strategic Objectives
Imported Water	• Support projects and initiatives that increase the resilience of State Water Project Supplies • Increase storage of SWP supplies in the Antelope Valley Basin • Maximize use of existing imported water supplies
Groundwater	• Be able to pump stored water to meet demands during imported water shortages • Establish and operate recharge facilities to offset proposed pumping increases • Leverage excess stored water to generate capital for PWD projects • Increase PWD's groundwater production rights
Littlerock Reservoir	• Continue Littlerock Reservoir sediment removal activities • Improve Palmdale Ditch to reduce water loss
Recycled Water	• Maximize the use of recycled water within PWD's service area to limit the need for more imported water • Obtain funding and partnerships to offset the cost of Pure Water AV
Conservation	• Continue to expand conservation efforts on a regular basis (e.g. every 3-5 years), attracting outside funding to help expand programs • Maintain and update policies as needed to reduce water waste and preserve PWD's ability to achieve sufficient conservation savings in the event of a water shortage emergency • Achieve conservation objectives set by the State as part of Assembly Bill (AB) 1668 and Senate Bill (SB) 606

Recommended Implementation Plan

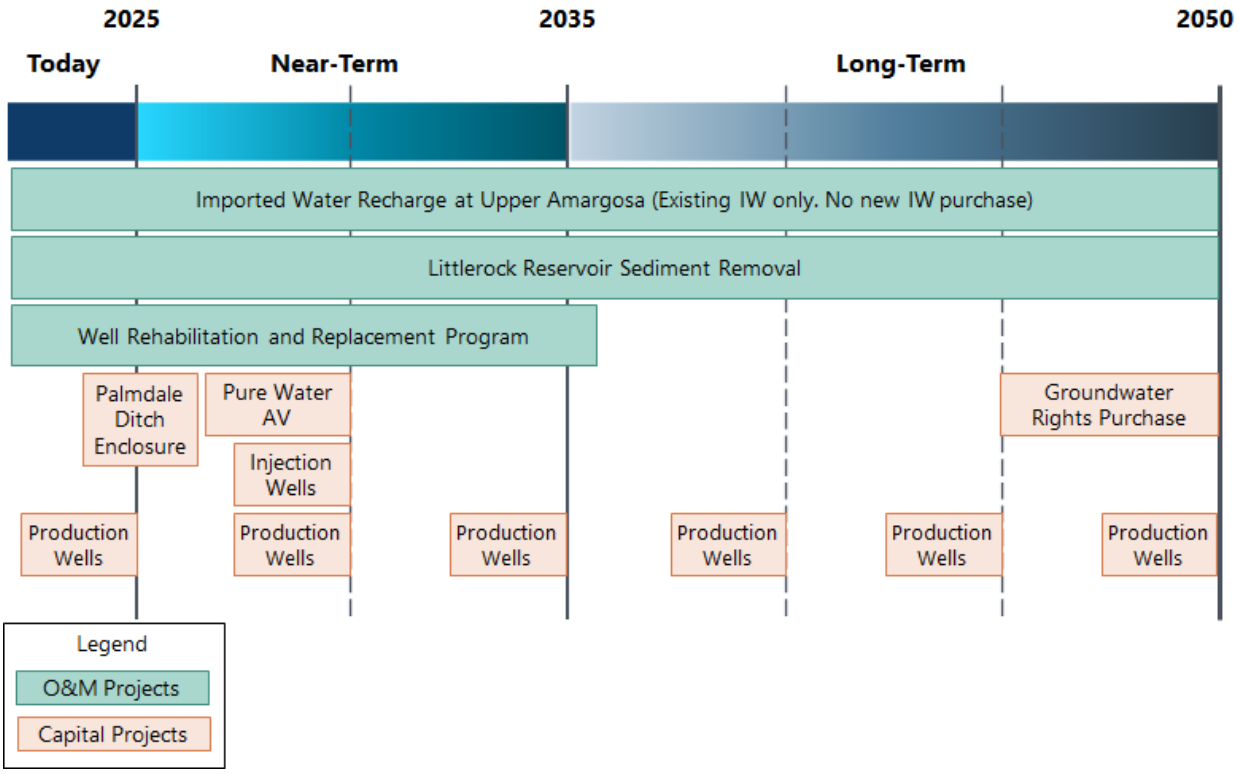
Implementation actions for the preferred alternative have been identified as follows:

- Maximize current Table A water usage
- Maximize beneficial use of recycled water through implementation of Pure Water Antelope Valley (AV)
- Store imported water in the Antelope Valley Basin via the Upper Amargosa Creek Project
- Store recycled water in the Antelope Valley Basin via injection
- Maintain storage capacity in Littlerock Reservoir through sediment removal
- Improve Palmdale Ditch to reduce water loss

- Add additional pumping capacity to access stored water during times of shortage
- Continue active conservation programs

The proposed implementation schedule for these actions are summarized in Figure ES-4 below. High-priority activities are scheduled for implementation in the near-term (2025 to 2035) to maximize existing supplies and meet long-term demands.

Figure ES-4: Implementation Schedule



Costs and Financing

Projected costs for implementing the preferred alternative according to the above schedule are shown in **Table ES-4**. Capital costs reflect the latest planning-level costs available for each project in 2022 dollars. O&M costs reflect the estimated annual O&M for each project in 2022 dollars. Total costs reflect the total capital and O&M cost for the overall planning period which extends from 2025 to 2050. It should be noted that capital costs do not reflect awarded or potential grant or loan funding, though as of the writing of this SWRP, PWD has received grant awards sufficient to fully fund implementation of the Palmdale Ditch Enclosure project.

Table ES-4: Preferred Alternative Projected Costs for the Planning Period (2025 to 2050)

Project	Capital[1] (2022 dollars)	O&M[2] (2022 dollars)
Maintenance of Existing Supply Reliability and Facilities		
Imported Water Recharge at Upper Amargosa Creek	$14 million	$466,000/year
Littlerock Reservoir Sediment Removal	$0	$1,900,000 every other year
Well R/R Program	$49 million (total for well replacement)	$1.34 million (total for well repair and rehabilitation)
Palmdale Ditch Enclosure	$18.1 million	$4,400/year
New Supply Projects		
Pure Water AV (including advanced treatment plant, injection wells and production wells)	$152.6 million	$6,120,000/year
Groundwater Rights Purchase (includes rights, new wells and conveyance to the PWD system)	$29.5 million	$410,000/year
Total Net Present Value[3]	**$169.8 million**	**$36.7 million/year**

1. Capital costs do not include grant funding that has already been awarded.
2. O&M costs are escalated to account for changes in the cost of power, materials and chemicals at the following rates: imported water conveyance is escalated at an average of 2%, Carter WTP treatment escalated at 3.3%, groundwater pumping escalated at 4.1%, other O&M costs escalated at 2.6%. Sources: PWD 2019 rate study and DWR Bulletin 132-22 Appendix B.
3. Assumes a 3% rate over the 25-year implementation. Does not consider funding and financing costs.

To fund the above SWRP activities, the proposed financing principles are:

- New customers establishing new connections must pay for new supplies and the infrastructure to deliver those supplies.
- Current and future customers must pay for reliability of current supply up to budgeted allotments for indoor and outdoor usage. This would include the costs to maintain Littlerock Reservoir, rehabilitate and replace existing wells, PWD's share of improvements to the Delta, and improvements needed to meet water quality standards.
- Those customers choosing to use more than their allotment will be responsible to fund higher cost water reliability projects including conservation and recycling.

- Current and future customers are to pay for all O&M costs
- Property owners pay fixed costs for the State Water Project
- Other system enhancements need to be able to pay for themselves without subsidy from other revenue sources.
- Financing strategy needs to provide for supply reliability assuming no future development or delayed future development.

Based on these principles, the recommended financing strategy includes the following elements:

- Implement a water supply connection fee for new connections of $37,500 per acre-foot and escalated every year by the rate of inflation.
- Use a combination of municipal debt financing, SRF loans, and collected water supply connection fees to fund capital projects identified in the SWRP.
- Continue to maintain current approach to setting water rates to cover O&M expenses associated with the SWRP.
- Further evaluate using property tax assessment(s) to fund potential future fixed costs associated with system improvements such as the well rehabilitation program and imported water reliability improvements, noting that voter approval may be required.
- Track and pursue grant opportunities for conservation, water recycling, and groundwater storage projects.
- Further evaluate partnership opportunities and engage with potential partners for recycling and groundwater storage projects as these projects evolve.

1. INTRODUCTION

1.1 Purpose of the Strategic Water Resources Plan

Palmdale Water District (PWD) is located within the Antelope Valley in Los Angeles County, approximately 60 miles north of the City of Los Angeles and includes the central and southern portions of the City of Palmdale and adjacent unincorporated areas of Los Angeles County. Historically, PWD relies on groundwater from the Antelope Valley Groundwater Basin, surface water from Littlerock Reservoir, and imported water from the State Water Project (SWP) including long-term Table "A" leases from Butte County and Littlerock Creek Irrigation District (LCID). Substantial periods of drought have significantly impacted water resources throughout the State of California, resulting in reduced imported water allocations and increased water use efficiency. Due to water supply uncertainties in the State and continued growth, PWD has updated its Strategic Water Resources Plan (SWRP) to develop a sound water supply strategy to meet the demands of both current and future customers through the year 2050.

The development of the SWRP is consistent with the mission, vision, and core values of PWD.

Mission: *The Mission of PWD is to provide high-quality water to our current and future customers at a reasonable cost.*

Vision Statement: *PWD will strive for excellence in providing great customer care; advocating for local water issues that help our residents; educating the community on water-use efficiency; and leading our region in researching and implementing emerging technologies that increase operational efficiency.*

Core Values: *Core values are essential to the success of PWD and its employees. The values set the tone for the organization and help employees make informed decisions that benefit PWD, staff, and customers.*

- *Integrity: Performing our duties in an ethical, fair, reliable, honest and courageous manner regardless of the situation.*
- *Teamwork: Working with colleagues to accomplish the organization's goals and respecting each other's contributions that best benefit the organization.*
- *Diversity: Embracing and respecting differing ideas, cultures, ethnicities, class and gender.*
- *Passion: Showing evidence of energy, enthusiasm, devotion and motivation while pursuing excellence in one's work, ideas and goals.*

Key questions to which this SWRP provides answers include the following:

1) How much water will PWD need to meet current and future demands?
2) Where will the water come from?
3) What facilities will be needed?
4) What will it cost and where will the money come from?
5) What happens when circumstances change?

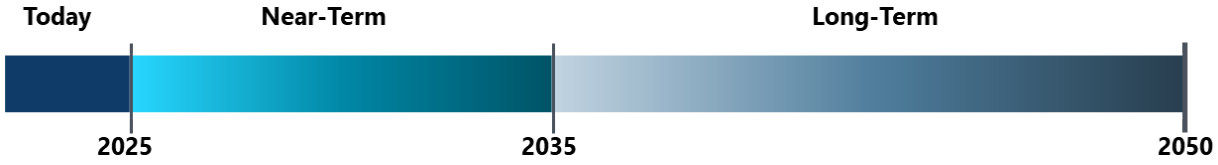
1.2 Overview

The SWRP includes the following six key elements:

- **Demand Forecast:** Compiles PWD's historical water use by sector and provides an analysis of its retail service demands from 2025 to 2050 and includes a demand envelope that considers climate change adjustment factors for outdoor demands and State water use objectives.
- **Supply Forecast:** Assesses PWD's current water supplies to identify gaps between future baseline water supplies and anticipated demands through 2050.
- **Supply Options:** Provides a series of options for improving supply reliability and identifying new supplies that were developed to help meet PWD's projected water demands.
- **Supply Alternatives:** Analyzes different groupings of supply options using a multi-criteria analysis to identify a preferred alternative to meet PWD's future supply needs.
- **Implementation Plan:** Provides a summary of the projects included in the preferred alternative, strategies for implementation, an implementation schedule and estimated capital and operations and maintenance costs.
- **Financing Plan:** Provides an outline for how funding will be provided to make the necessary improvements.

The planning timeline for this study focuses on three fundamental timeframes: today, near-term, and long term as illustrated below in **Figure 1-1**.

Figure 1-1: Strategic Water Resources Plan Timeframe



In developing the SWRP, several activities were undertaken between June 2022 to June 2023, including:

- **Data Compilation and Assessment:** Compiled and reviewed historical water use and demand data to determine an annual baseline.
- **Demand Modeling Analysis:** Developed a water demand model and drafted and finalized scenario recommendations for the demand forecast.
- **Evaluation of Water Supply Options:** Reviewed and assessed PWD's water supplies, including imported surface water, domestic surface water, groundwater, and reclaimed water.
- **Evaluation of Water Quality:** Reviewed water quality and other potential threats to PWD's current water supplies. The analysis was based on available water quality data, and existing maximum contaminant levels and perspective.

- **Options Development:** Identified 15 options that resulted from the options development process. Options are categorized as imported water, local groundwater, recharge/banking, recycled water, or other and described how the water will be conveyed, produced, and/or treated to meet demands.
- **Alternatives Evaluation:** Evaluated 11 supply alternatives using technical, financial, and regulatory considerations. Each alternative was simulated in WEAP using supply and demand scenarios.
- **Strategic Plan Development:** Compiled all analyses and recommendations into a SWRP. The final recommendation and analyses include a list of projects to implement and the fee for future water supplies.
- **Board Workshops:** PWD staff kept the Board of Directors informed of the SWRP progress throughout the development of the SWRP and solicited feedback on the options, alternatives evaluation, and recommendations.
- **Discussions with Involved Stakeholders:** Identified key stakeholders that have insight regarding or be impacted by the SWRP and shared progress and milestones about the SWRP.

Results from these activities are summarized throughout the SWRP.

1.3 Using and Updating the SWRP

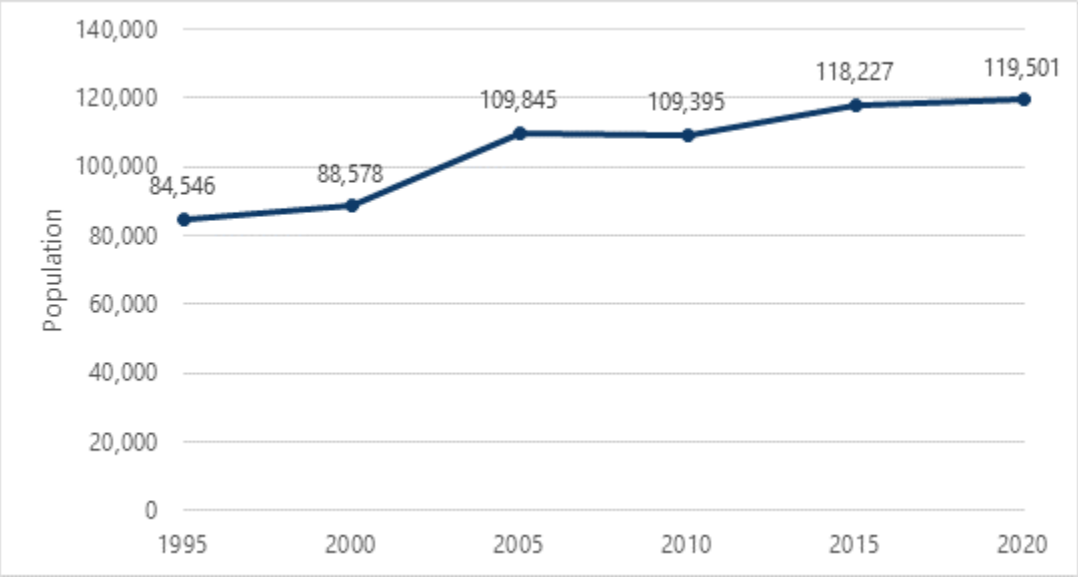
The SWRP is meant to serve as a guide to the PWD Board of Directors and staff as PWD develops and updates a variety of other planning documents including its urban water management plan, water system plan, financial plans, and other planning documents. The scope of this plan is far-reaching and is based upon the best available information at this time. However, it is not meant to be a static document and should be revisited regularly and updated as needed.

2. DEMAND FORECAST

2.1 Historic Trends

PWD currently serves approximately 26,900 connections, the majority of which are residential. The PWD service area has experienced stable population growth over the past 25 years, increasing by approximately 30 percent since 1995 as shown in **Figure 2-1** (PWD, 2021a). This steady growth has been driven by several factors, including affordable housing, employment opportunities, a good education system, and abundant recreational opportunities (City of Palmdale, 2022). Since 2012, housing units have steadily increased due to population growth and demand, the majority of which are single-family household units. Employment trends in the PWD service area have also steadily increased since 2010.

Figure 2-1: Historic Population for PWD's Retail Service Area

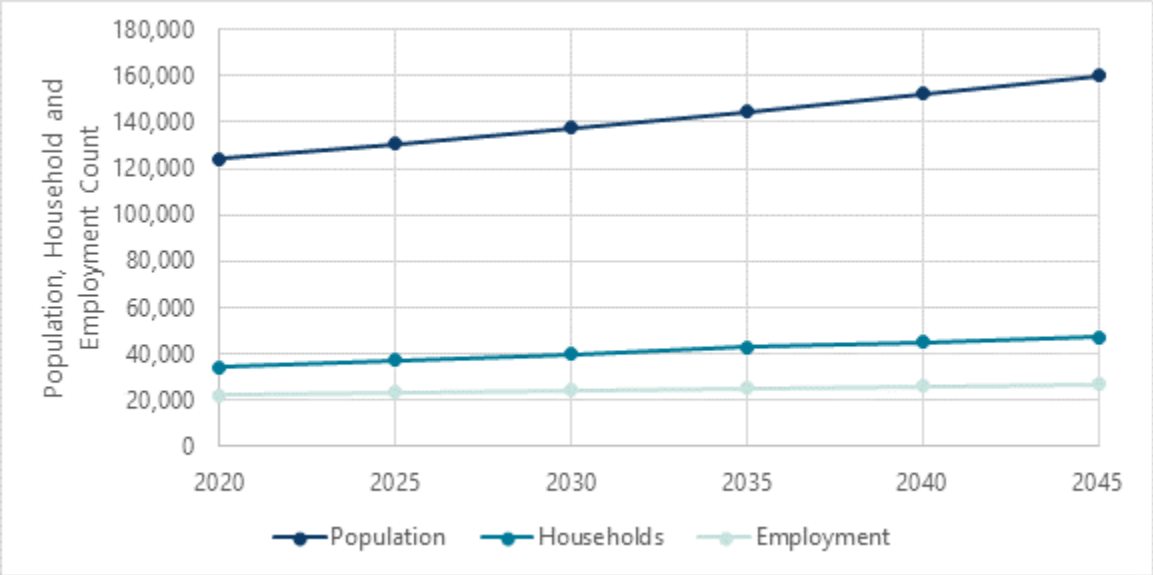


2.2 Service Area Growth

Future growth in the PWD service area was forecasted based on projected future development, population, and employment. The 2020 Connect SoCal forecast (SCAG, 2020) from the Southern California Association of Governments (SCAG) was used to project future growth in the service area.

The SCAG growth forecast for population, households, and employment are based on a combination of area general plans and comments from cities and counties, and are developed for the purpose of addressing transportation and land use challenges (SCAG, 2020). SCAG provides population, housing and employment forecasts at various levels of geographic units, including Transportation Analysis Zones (TAZs), which were developed independently by SCAG and highly resemble the U.S. Census Bureau's Block Groups. These TAZs were used to split forecasts of population, households, and employment within PWD's service area. To split individual TAZs, data were clipped along the service area boundary and allocated according to the percent of the TAZ falling within PWD's service area. **Figure 2-2** shows the SCAG population, household, and employment forecasts for the PWD service area.

Figure 2-2: SCAG Population, Household and Employment Forecasts for PWD's Service Area



2.3 Demand Forecast Methodology

The following steps were used to develop retail demand projections out to 2050:

1. Compile historical water use by sector
2. Determine annual baseline water use
3. Project growth
4. Calculate unit factors
5. Apply demand factors to the relevant growth factor (population or employment)
6. Estimate water loss
7. Compile demand projections
8. Create demand envelope

Each of these are described below.

Step 1 - Compile historical water use by sector

PWD's historic water use by sector was compiled to prepare demand projections, which include potable water demands out to 2050. Water usage is divided into sectors including single family, multi-family, institutional, commercial and industrial, construction, fire service, and other uses. Historical water use data from 2018 to 2021 was compiled for each sector, except for the categories of fire service and other which only had data available in 2018, and institutional which only had data available from 2019 to 2021. Historical billing data was combined for each supply type to create a combined set of historical demand data.

Step 2 - Determine annual baseline water use

The total annual water use in each year from 2018 through 2021 is shown in Table 2-1. The baseline water use for each sector is assumed to equal the four-year average measured from January 2018 to December

2021. The four-year average was selected since data was only available for 2018 to 2021. Note that the below table reflects only potable water demand met by water produced by PWD and does not include non-potable recycled water use. Non-potable recycled water use has ranged from 61 AF to 207 AF from 2018 to 2021.

Table 2-1: Baseline Water Use for Retail Demand (AFY)

Sector	2018	2019	2020	2021	4-Year Average
Single Family	11,355	10,777	11,757	12,099	**11,497**
Multiple Family	1,408	1,500	1,555	1,698	**1,540**
Irrigation	986	909	1,041	1,128	**1,016**
Commercial and Industrial	1,049	1,113	1,798	1,888	**1,462**
Other	43	n/a	n/a	n/a	**43**
Institutional	n/a	892	1,028	1,141	**1,021**
Fire Service	1,904	n/a	n/a	n/a	**1,904**
Construction	24	27	34	30	**29**
Total	**16,769**	**15,218**	**17,213**	**17,984**	**16,796**

Step 3- Project growth

Growth within each of the demand sectors was projected as part of PWD's 2020 Urban Water Management Plan (UWMP) based on acres of land expected to be developed to meet the population projections described in SCAG's 2020 Connect SoCal forecast (PWD, 2021a). **Table 2-2** provides a summary of current and projected acreage by land use type. The analysis completed for the 2020 UWMP only extended to 2045; therefore, it was assumed that the rate of growth from 2040 to 2045 would extend from 2045 to 2050. Since land use development does not line up exactly with demand sectors, commercial and industrial growth was used to estimate growth in the billing categories of commercial and industrial, other, institutional, fire service and construction.

Table 2-2: Projected Land Use Area (acres)

Land Use	2020	2025	2030	2035	2040	2045	2050
Single Family Residential	13,716	14,036	14,362	15,075	15,881	16,730	17,625
Multiple Family Residential	285	292	298	313	330	348	366
Irrigation	134	145	155	179	206	234	266
Commercial and Industrial	2,192	2,313	2,436	2,705	3,009	3,329	3,684

Step 4 - Calculate unit factors

Unit factors were calculated for every sector. Indoor unit factors were calculated by multiplying the baseline use by the percent of indoor use and then dividing by the indoor factor. This number was then multiplied by the conversion of acre-feet to gallons per day and then divided by the total number of days per year. Outdoor unit factors were calculated by multiplying the baseline water use by the percent of outdoor use and then dividing by the outdoor factor. This number was then multiplied by the conversion of acre-feet to gallons per day and then divided by the total number of days per year. The indoor and outdoor unit factors were then combined to calculate the total unit factors per sector, as shown in **Table 2-3**.

Step 5- Apply water use unit factors to growth

The results of Steps 3 and 4 were used to calculate indoor and outdoor demand projections for each sector within PWD's retail service area using the following formulas:

Water Use = Growth (acres) x Unit Factor (gallons per acre)

The projected gallons of water use were converted to acre-feet.

Step 6 - Estimate water loss

Seven years of available validated Water Loss Audit Reports were retrieved from the American Water Works Association to estimate water loss. The seven-year average of water loss as percent of water supplied, shown in **Table 2-4**, was used to project water losses and are assumed to be unchanged in the future.

Table 2-3: Retail Demand Unit Factors

Sector	Calculation	Unit	Water Use and Unit Factors
Single Family	Baseline Water Use	AF	11,497
	Unit Factor	Gallons per Single Family Residential Acre	748
Multiple Family	Baseline Water Use	AF	1,540
	Unit Factor	Gallons per Multiple Family Residential Acre	4,821
Irrigation	Baseline Water Use	AF	1,016
	Unit Factor	Gallons per Irrigated Acre	6,764
Commercial and Industrial	Baseline Water Use	AF	1,462
	Unit Factor	Gallons per Commercial and Industrial Acre	595
Other	Baseline Water Use	AF	11
	Unit Factor	Gallons per Commercial and Industrial Acre	4
Institutional	Baseline Water Use	AF	765
	Unit Factor	Gallons per Commercial and Industrial Acre	312
Fire Service	Baseline Water Use	AF	476
	Unit Factor	Gallons per Commercial and Industrial Acre	194
Construction	Baseline Water Use	AF	28
	Unit Factor	Gallons per Commercial and Industrial Acre	12

Table 2-4: PWD Water Loss Reporting

	2015	2016	2017	2018	2019	2020	2021	7 – Year Average
Total Losses (AF)	1,297	1,559	1,808	1,723	1,351	1,267	1,063	1.438
Water Loss as % of Water Supplied	7.7%	9.0%	10.0%	9.0%	7.7%	6.6%	5.6 %	7.9%

Step 7 - Compile demand projections

The results of Steps 5 and 6 were summed to generate the total demand projection, divided by sector and indoor versus outdoor use. In addition, baseline recycled water demand for non-potable uses was assumed to remain at approximately 100 AFY.

Step 8 - Create demand envelope

A demand envelope was developed to allow for a range of demand estimates for long-term supply planning.

The upper-level demand estimate was created by applying the potential impacts of climate change to the demand projections generated through Step 7. Climate change is expected to increase outdoor water demand due to higher temperatures and higher evapotranspiration rates. DWR has prepared sets of adjustment factors to be used to adjust precipitation and evapotranspiration for use in water supply planning and are downscaled from Global Climate Models to allow for regional planning application (DWR, 2022b). DWR's 2070 Central Tendency Scenario, which is an ensemble of GCMs that reflect the average of 20 climate projections, was used for this analysis. The impact of climate change on outdoor demands was calculated by calculating the average adjustment factors for precipitation and evapotranspiration identified for the PWD service area, then multiplying by the total outdoor water use projections. Overall, the climate change data estimates that there will be an average annual increase in precipitation (a change factor of 1.099 by 2070) and an average annual increase in evapotranspiration (a change factor of 1.170 by 2070). In total, this results in a net change factor for outdoor water demands of 1.071. Since the adjustment factor is projected for 2070, it was assumed that the factor would increase from 1.0 to 1.071 between 2020 and 2070. The adjustment factors applied to estimate climate change impacts are shown in **Table 2-5**.

Table 2-5: Climate Change Adjustment Factors for Outdoor Demands

	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
Outdoor Adjustment Factor	1.00	1.007	1.014	1.021	1.029	1.036	1.043	1.050	1.057	1.064	1.071

The lower-level demand estimate was created by applying SB606/AB1668 water use requirements and more pessimistic growth projections than those described in Section 2.2. SB606 and AB1668 require that demand reduction goals be set for water suppliers in California. While guidance is still under development by the

State, draft guidance for residential water use goals were applied to the demand projection. The indoor residential water use goal is expected to be 42 GPCD by 2030, with an interim goal to reduce to 47 GPCD by 2025.

DWR's outdoor residential water use goal is expected to be calculated based on irrigable and irrigated area in residential land use parcels, effective precipitation, reference evapotranspiration, and an assumed outdoor water use standard using the following formula:

> *Efficient Outdoor Water use = (Evapotranspiration – Effective Precipitation) * 0.62 * Outdoor Water Use Standard * (Irrigated Area + (Irrigable Area * Buffer))*

An estimate of PWD's outdoor water use per capita was calculated based on the above formula using an estimate of the irrigable area provided by DWR, and evapotranspiration and precipitation data from CIMIS. The indoor and outdoor water use per capita goal were applied to the residential demand projections to develop the lower-level demand estimate.

2.4 Demand Forecast

The resulting demands from the approaches described in Section 2.3 are provided below for comparison. The mid-level projection (based on the results of Step 7 with no adjustments) and the upper-level projection with the climate change adjustments result in similar growth projections. The lower-level demand projection (which included the SB 606/AB 1668 adjustments) had a lower growth projection since these bills implement residential water use objectives that focus on water conservation, which lowers water demand. **Figure 2-3** and **Table 2-10 through 2-12** provide the retail demand projections using each method for the total retail area.

Figure 2-3: Forecasted PWD Demand (Acre-Feet per Year)

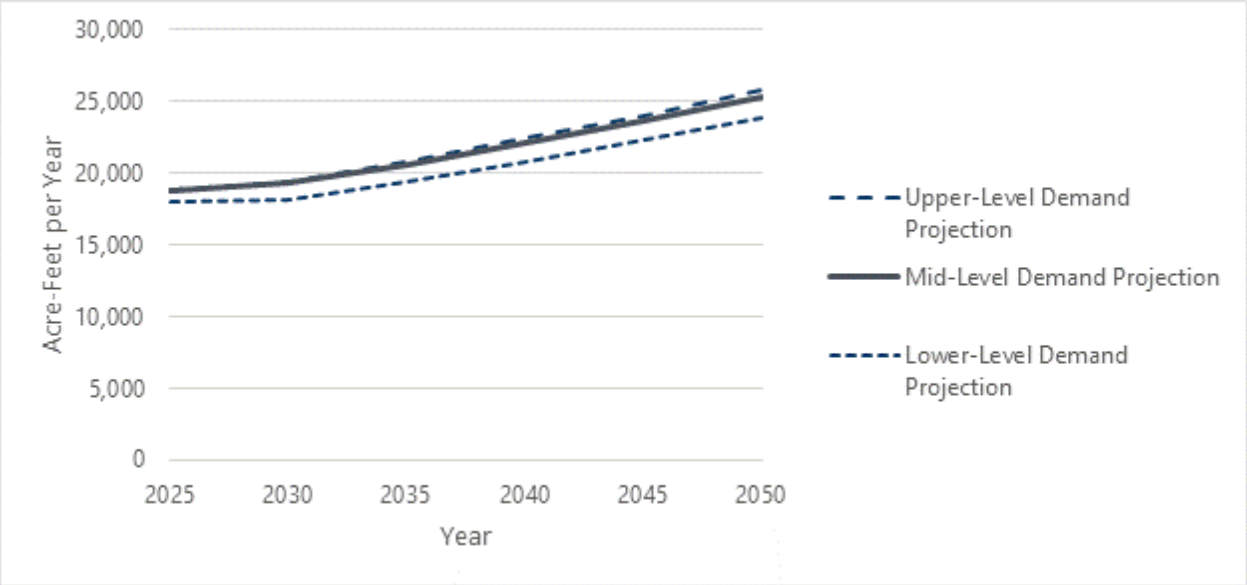


Table 2-6: Detailed Mid-Level Demand Projections (AFY)

Sector	2025	2030	2035	2040	2045	2050
Single Family	11,765	12,039	12,636	13,312	14,024	14,774
Multiple Family	1,576	1,613	1,693	1,783	1,878	1,978
Irrigation	1,096	1,178	1,357	1,559	1,772	2,014
Commercial and Industrial	1,542	1,625	1,804	2,007	2,220	2,457
Other	11	12	13	15	16	18
Institutional	807	851	944	1,051	1,162	1,286
Fire Service	502	529	587	653	723	800
Construction	30	32	35	39	43	48
Water Loss	1,375	1,418	1,513	1,620	1,732	1,854
Non-Potable	100	100	100	100	100	100
Total	**18,805**	**19,396**	**20,683**	**22,138**	**23,671**	**25,329**

Table 2-7: Detailed Lower-Level Demand Projections (AFY)

Sector	2025	2030	2035	2040	2045	2050
Single Family	10,628	10,435	10,950	11,542	12,131	12,718
Multiple Family	1,787	1,857	1,949	2,053	2,160	2,270
Irrigation	1,096	1,178	1,357	1,559	1,772	2,014
Commercial and Industrial	1,542	1,625	1,804	2,007	2,220	2,457
Other	11	12	13	15	16	18
Institutional	807	851	944	1,051	1,162	1,286
Fire Service	502	529	587	653	723	800
Construction	207	218	242	269	298	329
Water Loss	1,476	1,486	1,577	1,681	1,787	1,899
Non-Potable	100	100	100	100	100	100
Total	**18,158**	**18,290**	**19,532**	**20,929**	**22,370**	**23,893**

Table 2-8: Detailed Upper-Level Demand Projections (AFY)

Sector	2025	2030	2035	2040	2045	2050
Single Family	11,807	12,125	12,772	13,503	14,275	15,091
Multiple Family	1,581	1,624	1,710	1,807	1,910	2,081
Irrigation	1,104	1,195	1,386	1,603	1,835	2,100
Commercial and Industrial	1,548	1,636	1,823	2,034	2,259	2,508
Other	11	12	13	15	17	19
Institutional	811	857	955	1,067	1,185	1,317
Fire Service	504	534	595	665	739	822
Construction	30	32	36	40	44	49
Water Loss	1,380	1,429	1,530	1,645	1,766	1,898
Non-Potable	100	100	100	100	100	100
Total	**18,877**	**19,544**	**20,921**	**22,479**	**24,130**	**25,922**

3. BASELINE SUPPLY FORECAST

One of the key components of this SWRP is evaluating the ability of future baseline supplies to meet current and future water demands. A water supply assessment was completed to identify gaps between future baseline water supplies and anticipated demands through 2050, as well as to articulate the need for developing the SWRP options and solutions described in Chapter 4. This chapter provides an overview of the existing water supply sources available to PWD.

3.1 Supply Overview

PWD currently receives potable water from three main sources: imported water from the State Water Project (SWP), groundwater from the Antelope Valley Groundwater Basin (Basin), and surface water from Littlerock Dam Reservoir, shown in **Figure 3-1**. PWD has also developed recycled water supplies to diversify its water supply and offset potable water demand. A brief description of the water supply types available to PWD is provided in the following sections. For this SWRP, baseline water supply refers to the existing water supplies given available production, distribution, and storage infrastructure, assuming no future water supply projects or agreements are implemented.

3.1.1 Imported Water

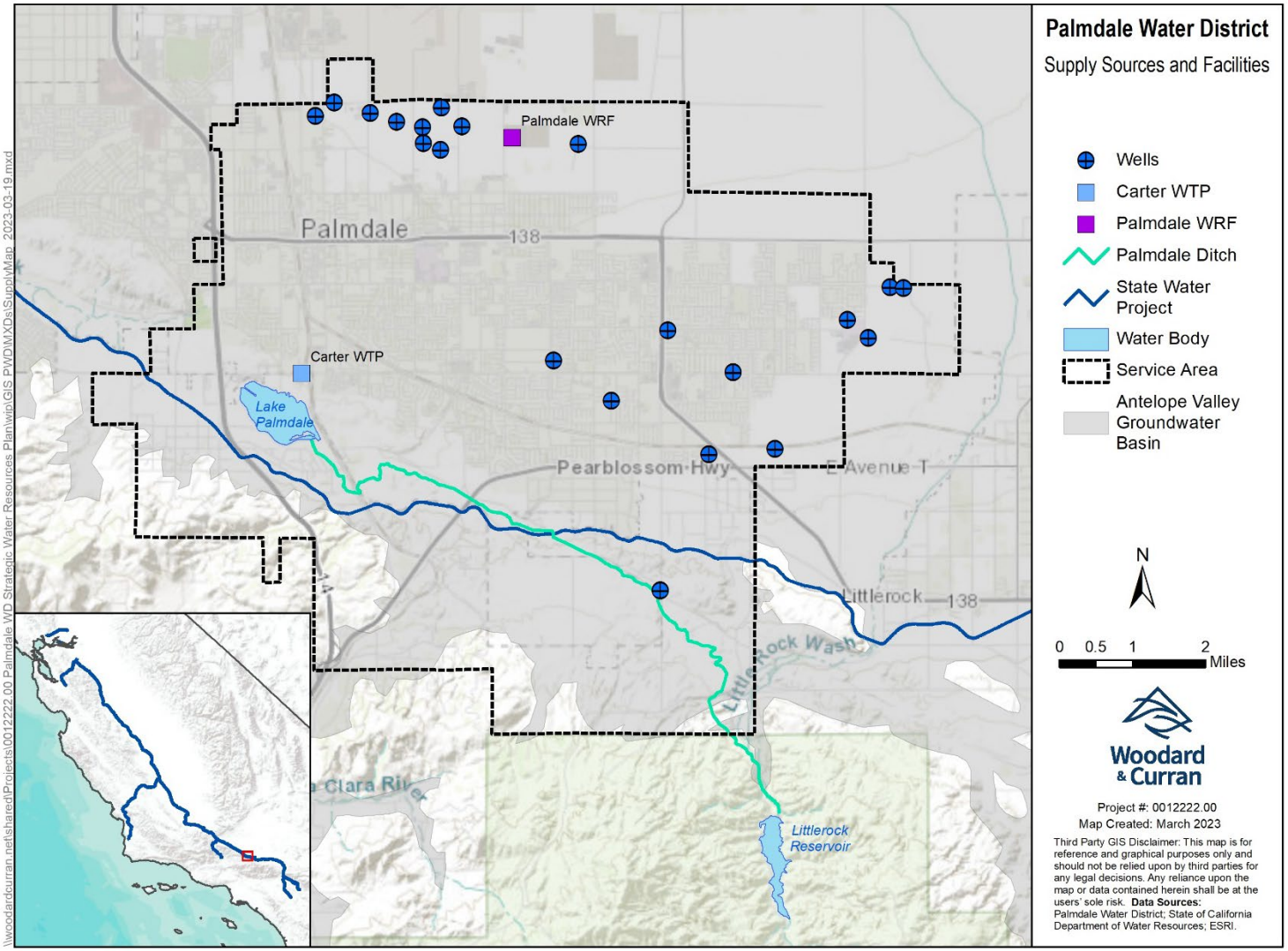
PWD is one of 29 water agencies (commonly referred to as "contractors") that have a SWP Water Supply Contract with the California Department of Water Resources (DWR). Imported water is conveyed from the Sacramento-San Joaquin Delta through the East Branch of the California Aqueduct into Lake Palmdale, which acts as a forebay for the PWD's Leslie O. Carter Water Treatment Plant (WTP). These features are shown in **Figure 3-1**.

Each SWP contractor's Water Supply Contract contains a "Table A," which lists the maximum amount of water supply an agency may request each year throughout the life of the contract. Currently, PWD's Table A amount is 21,300 acre-feet per year (AFY). SWP Table A allocations differ each year based primarily on hydrology, current storage, and releases to be made throughout the year to meet SWP contractual and regulatory obligations. Between 2011 and 2021, Table A allocations ranged from 5 percent to 85 percent, averaging 30 percent which reflects the two drought periods during this time frame. Actual deliveries are dependent on PWD demand. Historical Table A allocations and deliveries to PWD for the years 2011 to 2021 are shown in **Table 3-1**.

Table 3-1: Historical Table A Supplies

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Avg
Table A Allocation (%)	*80%*	*65%*	*35%*	*5%*	*20%*	*60%*	*85%*	*35%*	*70%*	*20%*	*5%*	*30%*
Table A Water Delivered to PWD (AFY)	12,294	9,959	4,559	1,005	2,420	7,805	7,751	7,137	14,294	1,905	1,065	6,381

Figure 3-1: Water Supply Sources and Facilities



In addition to the Table A amount, the water supply contract describes several types of SWP water that are available to PWD to supplement Table A water, including carryover water, "Article 21" water, and turnback pool water, which are described briefly below.

- **Carryover** water is Table A water that is allocated to a contractor and approved for delivery but is not used by the end of the SWP contract year. If space is available, contractors may store a maximum of 5,000 AF of Table A allocation in SWP's share of the San Luis Reservoir for delivery the following year. PWD has carried over an average of 2,442 AFY between 2011 and 2021.
- **Article 21** water is water that PWD may receive on a short-term basis in addition to its approved Table A water. Article 21 water is offered periodically, usually in wet hydrologic years, when water supply available in the Sacramento-San Joaquin Delta exceeds SWP contractors' total entitlements. The estimated range of Article 21 water availability for PWD is a relatively small amount. PWD has received a total of 335 AFY of Article 21 water since 2011.
- **Turnback pools** are a mechanism by which contractors with excess Table A allocations in a given hydrologic year may sell that surplus water to other contractors. Since 2011, PWD has only purchased a total of about 26 AF from turnback pools to supplement its water supplies.

Regardless of hydrologic conditions, Table A allocation water is given priority for delivery over other types of SWP water.

DWR's 2021 Delivery Capability Report (DCR) estimates the near and long-term availability of SWP water supplies based on a computer model that simulates monthly operations of the SWP system. The 2021 DCR includes DWR's estimates of SWP water supply availability under both current and future conditions. Key inputs to the model include the facilities in the system, hydrologic inflows to the system, regulatory and operational constraints on system operations, and contractor demands for SWP water.

DWR's model also accounts for anticipated climate change impacts on imported water availability. Climate change adds a layer of uncertainty in estimating the future availability of SWP source water as it may change existing precipitation patterns in California. While different climate change models show differing effects, potential changes could include higher temperatures and more precipitation falling in the form of rain rather than snow and earlier snowmelt, which would result in more runoff occurring in the winter rather than spread out over the winter and spring. In the 2021 DCR, DWR estimates that the SWP can deliver an average Table A supply of 56 percent of the total maximum Table A amounts by 2025 and 51 percent by 2050.

Projected imported water supplies from the SWP are shown in **Table 3-2** and include Table A water, and reflect the 2021 DCP estimates for near and long-term availability of SWP water deliveries. It is assumed that potential carryover, Article 21 water and turnback pool water are rolled into the Table A projections.

Table 3-2: Projected Imported SWP Water Supplies (AFY)

	2025	2030	2035	2040	2045	2050
Table A Allocation Forecast (%)	*56%*	*54%*	*52%*	*51%*	*51%*	*51%*
Table A Water	11,900	11,500	11,100	10,900	10,900	10,900

3.1.1.1 Transfer Agreements

In addition to its own Table A imported water from the SWP, PWD has long-term arrangements with other SWP contractors who hold Table A amounts exceeding their current demands. Currently, PWD has existing agreements with Butte County and Littlerock Creek Irrigation District (LCID) to access a portion of their Table A amounts for a predetermined time. Like Table A water, these transfers are subject to the SWP annual allocation and SWP delivery and reliability constraints.

Butte County Transfer Agreement

PWD currently has a long-term lease agreement with Butte County for 10,000 AFY of their SWP Table A amount. The amount available through this lease, anticipated to end in 2035, varies primarily on the annual Table A allocation from DWR such that PWD only has access to the water if the Table A allocation exceeds 20 percent. Assuming the 2021 DCR Table A estimates for near and long-term availability of SWP water, Butte Transfer supplies are projected to range from 5,600 AFY in 2025 to 5,200 AFY in 2035. Projected Butte Transfer supplies are shown in **Table 3-3**.

LCID Transfer Agreement

In 2022, PWD entered into a mutually beneficial water transfer agreement with LCID to receive between 75 percent and 100 percent of LCID's SWP annual Table A water, up to a maximum of 2,300 AFY, through 2035. LCID has an annual option to retain up to 25 percent of its Table A water. For planning purposes, this SWRP conservatively assumes 75 percent of LCID's Table A allocation will be transferred to PWD through 2035. Assuming the 2021 DCR Table A estimates for SWP water availability, it is anticipated that LCID transfer supplies will vary from 1,000 AFY in 2025 to 900 AFY in 2035. Projected imported water transfers from LCID are shown in **Table 3-3**.

Table 3-3: Projected Imported Water Transfers (AFY)

	2025	2030	2035	2040	2045	2050
Butte Transfer	5,600	5,400	5,200	0	0	0
LCID Transfer	1,000	900	900	0	0	0

3.1.1.2 Imported Water Facilities

SWP water is conveyed directly from the East Branch of the California Aqueduct into Lake Palmdale, which feeds the Leslie O. Carter WTP. PWD's allowable capacity in the East Branch is 31 cubic feet per second (cfs) from Reach 1 to Reach 11B and 30 cfs from Reach 12D to Reach 20B (where 20B is the reach that delivers water into Lake Palmdale). Diversion capacity into Lake Palmdale is 30 cfs. Lake Palmdale can store approximately 4,129 acre-feet (AF) of SWP and surface water from Littlerock Dam Reservoir water (see

Section 3.1.3). The Leslie O. Carter WTP, which has a treatment capacity of 35 million gallons per day (mgd), treats water conveyed from Lake Palmdale before distributing to customers. The Leslie O. Carter WTP is nonoperational for approximately 6 weeks each year for maintenance and repairs.

3.1.2 Groundwater

PWD operates 22 groundwater wells in the Antelope Valley Groundwater Basin (DWR Basin No. 6-44, Bulletin 118), as shown in **Figure 3-1**. Groundwater has accounted for an average of 48 percent of PWD's supplies since 2011, though it should be noted that this time period includes two droughts: the first from 2013 to 2016, and the second starting in 2020, resulting in higher-than-normal groundwater production to offset lower imported water availability. Historical groundwater supplies for the years 2011 through 2021 are shown in **Table 3-4**.

Table 3-4: Historical Groundwater Supplies (AFY)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Avg
Groundwater Production	7,025	7,543	9,378	12,398	11,227	8,474	4,355	6,058	4,425	7,599	9,844	8,030

The Basin was adjudicated in December 2015 after over 15 years of complex proceedings among more than 4,000 parties, including public water suppliers, landowners, small pumpers and non-pumping property owners, and the federal and state governments. The following sections summarize the adjudication process and resulting Antelope Valley Groundwater Basin Adjudication Judgment (Judgment).

3.1.2.1 Antelope Valley Groundwater Adjudication

PWD is one of the entities involved in the adjudication of groundwater rights for the Basin that began in 2004 to prevent further damage from declining groundwater levels. The adjudication, completed in 2015, determined the Basin was in a state of overdraft and defined the Basin boundaries, considered hydraulic connection throughout the basin, established a safe yield, and quantified groundwater production. The Judgment established respective water rights (i.e., Production Rights) among groundwater producers based on the Basin's safe yield and ordered a ramp-down of production to meet the safe yield by 2023. In accordance with the adjudication, the Antelope Valley Watermaster was formed to implement the Judgment. The Watermaster is charged with administering the adjudicated water rights and managing the groundwater resources within the adjudicated portion of the Antelope Valley to stabilize groundwater levels and prevent further damage that can result from declining groundwater levels.

3.1.2.2 Production Right, Federal Reserved Water Right, and Return Flow Credits

Per the Judgment, PWD has a groundwater production right of 2,770 AFY. PWD has been in full compliance with the Judgment, pumping within its final adjudicated right since 2016. In addition to its groundwater production right, PWD is entitled to a share of the unused federal reserved right. While the Judgment grants the federal government a Federal Reserved Water Right of up to 7,600 AFY, the federal government does not currently pump this amount. The unused Federal Reserved Water Right is allocated among public water suppliers listed in Exhibit 3 of the Judgement. Currently, PWD's average share of unused Federal Reserved Water Right is 1,450 AFY. Although the federal government has the authority to increase pumping at any time, it is assumed for this SWRP that PWD will be able to pump this amount at least until 2050. PWD is

also entitled to a pumping allocation for return flow credit of all imported water used, including imported water transfers. The return flow credit is equal to 39.1 percent of all the imported water utilized by PWD based on a five-year rolling average. Return flows credits are available to PWD following imported water delivery or after banked imported water has been pumped. Return flow credits are projected to decrease from 4,220 AFY in 2025 to 4,100 AFY in 2050 consistent with decreased imported water supplies described in **Section 3.1.1**.

Climate change will have increasing impacts on groundwater resources. While groundwater is often considered a drought-resistant water resource, warmer temperatures, changing precipitation patterns, and more extreme drought conditions can all have an impact on rainfall and streamflows and, as a result, groundwater recharge. Climate change data developed by DWR for the California Water Commission's Water Storage Investment Program for hydrology in the region estimates streamflow may decrease groundwater recharge by 8 percent by 2070. The PWD's Production Right has been adjusted to reflect decreased groundwater availability because of climate change. Projected groundwater supplies from PWD's Production Right, Federal Reserved Water Right Production, and return flow credit are shown in **Table 3-5**.

Table 3-5: Projected Groundwater Supplies (AFY)

	2025	2030	2035	2040	2045	2050
Production Right	2,770	2,750	2,720	2,700	2,670	2,650
Federal Reserved Water Right	1,450	1,450	1,450	1,450	1,450	1,450
Return Flow Credits	4,220	4,200	4,170	4,150	4,120	4,100

3.1.2.3 Groundwater Pumping Capacity and Water Quality Limitations

Groundwater pumped from the Basin is treated with chlorine disinfection and pumped directly into the PWD's potable distribution system. Currently, PWD operates 22 active wells with a pumping capacity of approximately 11,000 AFY. Due to aging infrastructure, however, this pumping capacity is anticipated to decrease. PWD is in the process of rehabilitating and replacing production wells to maintain the total pumping capacity of 11,000 AFY.

PWD's well field is not currently experiencing water quality issues. Future changes to drinking water quality regulations may require PWD to conduct further analysis of water quality from certain wells that have detected constituents of concern. Constituents of concern that are expected to have a maximum contaminant level (MCL) in the future include hexavalent chromium, perfluorooctanoic acid (PFOA), and per- and polyfluoroalkyl substances (PFAS).

3.1.3 Local Surface Water

Littlerock Creek is the primary tributary stream that supplies surface water to the PWD service area, flowing north from the San Gabriel Mountains along PWD's southern boundary. PWD and Littlerock Creek Irrigation District (LCID) jointly hold long-standing water rights to divert 5,500 AFY from Littlerock Creek. Per an agreement between the two districts, the first 13 cfs of Littlerock Creek flows are available to LCID. Any flow above 13 cfs is shared between the two districts with 75 percent going to the PWD and 25 percent to LCID.

The Littlerock Dam Reservoir is currently managed by PWD to intercept flows from Littlerock Creek. LCID and PWD are each entitled to 50 percent of the Littlerock Dam Reservoir's storage capacity, which was recently renovated to increase storage capacity to 3,500 AF. Water is conveyed from Littlerock Dam Reservoir to Lake Palmdale via the Palmdale Ditch, an eight and a half mile long mostly open ditch, before being conveyed to and treated at PWD's Leslie O. Carter WTP.

Surface water runoff to the Littlerock Dam Reservoir is seasonal and varies widely from year to year. Although Littlerock Creek flows mainly during winter and spring months, this is buffered somewhat by Littlerock Dam Reservoir, allowing this water to be available throughout the year. Climate change is expected to have an impact on streamflows as precipitation patterns change and drought conditions become more extreme, and is projected to result in a streamflow reduction of approximately 4.4% by 2050.

PWD anticipates using approximately half of the average available yield from Littlerock Reservoir, or 4,000 AFY. Of that amount, up to 25 percent is projected to be lost to seepage and evaporation, for a remaining available local surface water supply of 3,000 AF. Projected local surface water supplies, accounting for climate change impacts, are summarized in **Table 3-6**.

Table 3-6: Projected Local Surface Water Supplies (AFY)

	2025	2030	2035	2040	2045	2050
Littlerock Reservoir	3,000	2,973	2,946	2,919	2,892	2,868

3.1.3.1 Local Surface Water Facility Capacities

Littlerock Dam Reservoir currently has a storage capacity of 2,870 AF due to over twenty years of sediment deposits, though current sediment removal operations are projected to increase capacity of the reservoir to 3,070 AF. The Reservoir must maintain a minimum water level of 500 AF through Labor Day (i.e., the first week of September), after which PWD and LCID draw water as needed. The Palmdale Ditch, which transports water from the Reservoir to Lake Palmdale, has a conveyance capacity of 25 cfs. It is estimated that approximately 25 percent of water supplies are lost due to seepage and evaporation, while the Reservoir is estimated to lose 200 AFY per year due to net evaporation (calculated evaporation minus precipitation). As described in **Section 3.1.1**, Lake Palmdale can store approximately 4,129 AF of SWP and Littlerock Dam Reservoir water, and is estimated to lose approximately 1,000 AFY per year due to net evaporation. Water from Lake Palmdale is conveyed to PWD's Leslie O. Carter WTP for treatment.

3.1.4 Recycled Water

In 2012, the Palmdale Recycled Water Authority (PRWA) was established to manage recycled water generated and used within the PWD service area. The PRWA boundaries consist of the overlap of City and PWD boundaries. PRWA is a joint powers authority comprised of the PWD and City of Palmdale and manages all aspects of recycled water use, including agreements to obtain recycled water, planning for, designing, and constructing supporting facilities, and financing these efforts.

Recycled water available for use within the PWD service area is supplied by the Sanitation Districts of Los Angeles County's (LACSD's) Palmdale Water Reclamation Plant (WRP) located in the City of Palmdale. The Palmdale WRP currently provides tertiary treatment for approximately 12,000 AFY of wastewater generated in and around the City of Palmdale and produces an average of 10,700 AFY of Title 22 recycled water. A

contract with LACSD entitles PWD to up to 5,325 AFY of recycled water. The City of Palmdale also had an agreement with the LACSD for 2,000 AFY of recycled water to provide to customers throughout the City's service area, which has since been transferred to PRWA. Future recycled water supply projections shown in **Table 3-7** assume that recycled water entitlement within PWD's service area will remain the same through 2050.

Table 3-7: Projected Recycled Water Supplies (AFY)

	2025	2030	2035	2040	2045	2050
PWD Entitlement	5,325	5,325	5,325	5,325	5,325	5,325
PRWA's Entitlement	2,000	2,000	2,000	2,000	2,000	2,000

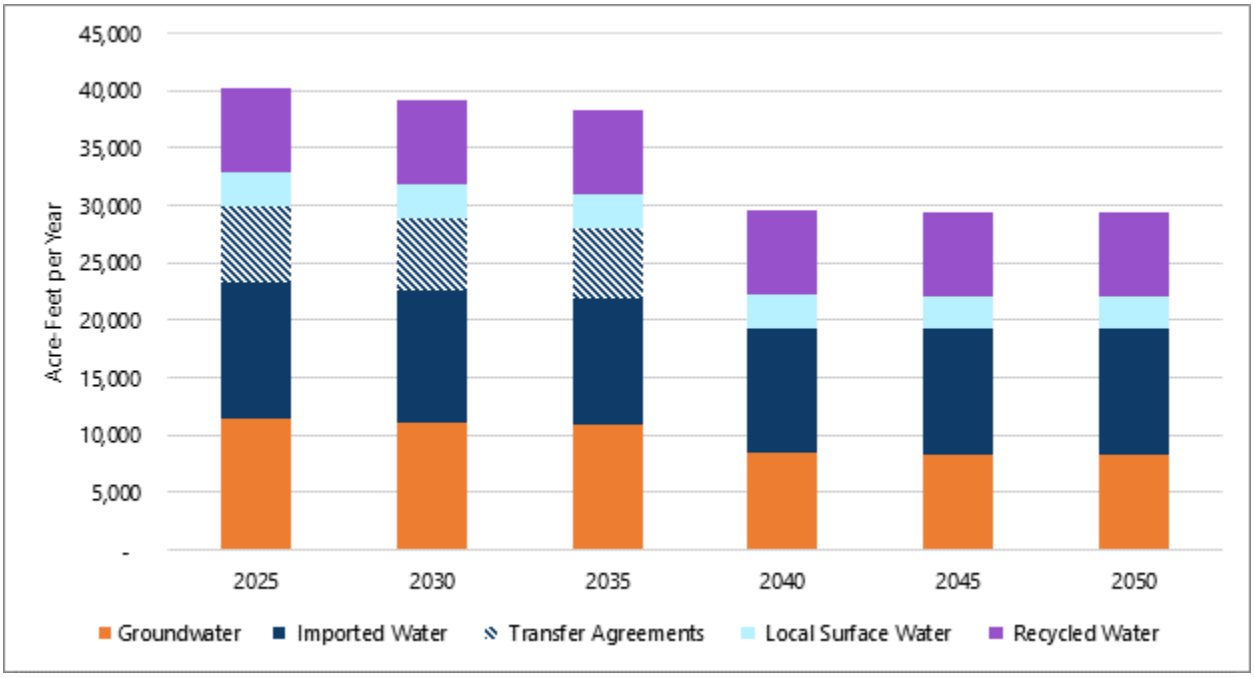
3.1.4.1 Recycled Water Capacity

Existing recycled water customers through PRWA include the City of Palmdale, for landscape irrigation and construction water. The remaining portion of Palmdale WRP recycled water is used for agricultural irrigation as a disposal method. The existing recycled water distribution system consists of about 7,900 feet of purple pipe with a current demand for recycled water of approximately 100 AFY.

3.1.5 Baseline Supply Projections

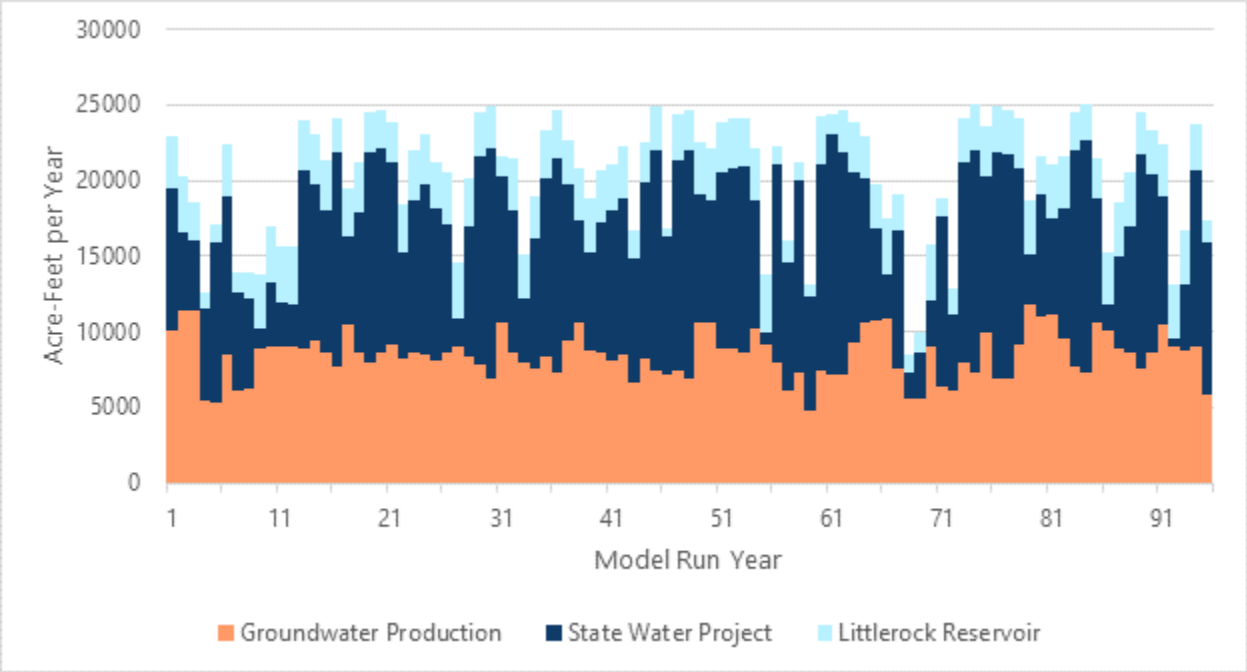
Through 2035, available potable and non-potable supplies are anticipated to average at least 38,000 AFY. These will be reduced to about 30,000 AFY in the period after 2035 through 2050, partly due to the expiration of transfer agreements with Butte County and Littlerock Creek Irrigation District in 2035. Projected annual baseline water supplies available within PWD's service area are shown in **Figure 3-2**.

Figure 3-2: Projected Baseline Water Supplies Available within PWD Service Area (Unconstrained)



The projections shown in **Figure 3-2** assume that PWD will have the capacity to access all available supplies. Water reliability, though, can be impacted by numerous external factors that influence the availability of water supplies, such as hydrologic fluctuations (which can be exacerbated as a result of climate change), constraints on distribution facilities, aging systems, or availability of storage. Because these factors limit PWD's ability to access all available water supplies, actual water deliveries may be smaller and more variable than projected available supplies. **Figure 3-3** shows the time series of projected baseline water supplies delivered within PWD's service area accounting for these external constraints.

Figure 3-3: Projected Potable Baseline Water Supplies in 2050 (constrained)



3.2 Baseline Supply and Demand Comparison

An assessment of water supply reliability measures the extent to which a water supply system effectively meets current and projected water demands. In the context of this SWRP, reliability is assessed by comparing projected supply and demand pressures.

This SWRP quantifies potential water supply shortages under multiple constraints that may limit future water reliability. To analyze these elements, a model was developed to simulate the water supply and demand balance and to quantify the long-term reliability of existing water supplies available to PWD through 2050.

3.2.1 Analysis Methodology

While comparing demands and supplies on an average basis is a straightforward exercise, comparing supply and demand accounting for external conditions requires a greater level of analysis. External conditions in the context of baseline assessment are related to hydrologic and weather variability, including climate change impacts, and how they affect demand and supply availability. Some levels of imported water

shortage can occur under conditions of extended drought. Local surface water supply varies significantly and impacts local surface water availability and groundwater basin recharge.

A systems model was developed for PWD using Water Evaluation and Planning (WEAP) software, an integrated water resources planning tool used for visualizing and dynamically simulating complex systems. This systems model evaluates PWD's ability to meet future service area needs through 2050. Baseline supply projections incorporate historical monthly and annual variability, as well as operational and physical constraints such as long-term storage and facility capacities. Demand projections also incorporate monthly variability to capture seasonal changes. All model assumptions are included in **Appendix A**.

3.2.2 Baseline Supply Versus Demand Results

Projected mid-level water demand under baseline conditions described in Chapter 2 served as the basis for this analysis. Monthly demand factors were applied to characterize water consumption throughout the year with water demands peaking during dry summer months. The monthly demand factor is based on historical demand patterns for each use type. Key to the reliability assessment is analysis of supply under multiple hydrologic/weather conditions. The analysis uses historical data from 1922 to 2015 to evaluate future years under multiple hydrologic conditions. This allows the model to account for inherent variability and uncertainty in the system, which can occur at any time over the planning horizon.

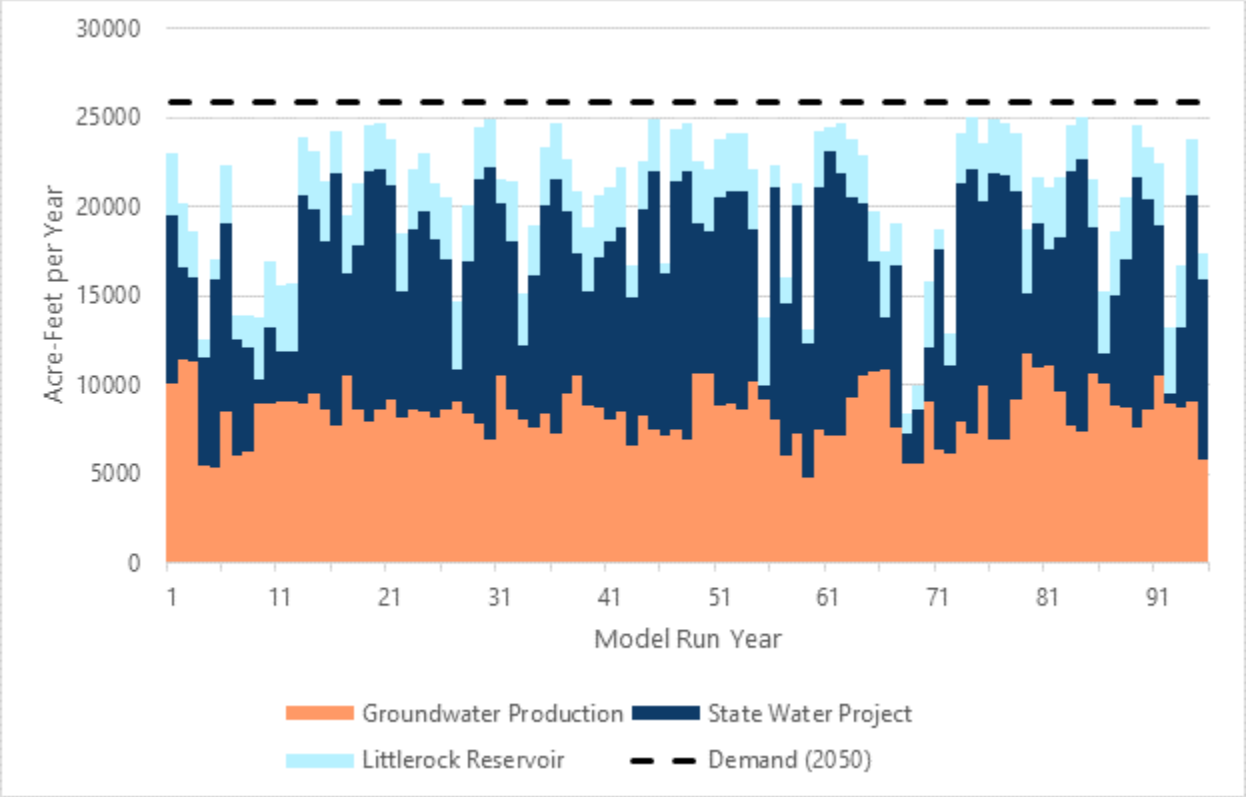
Starting in 2030, shortages are expected to occur every year due primarily to the regular 6-week shutdown of Carter WTP and the insufficient pumping capacity of wells to meet demand alone. In 2030 the average annual shortage is estimated as 540 AF while the maximum annual shortage is estimated as 4,620 AF. By 2050, the average annual shortage is estimated as 5,360 AF while the maximum annual shortage is estimated as 17,370 AF.

The projected water supply shortage frequency and depth of unmet demand is summarized in **Table 3-8**. An annual time series of 2050 demand versus baseline supplies is shown in **Figure 3-4**.

Table 3-8: Projected Water Supply Shortage Frequency and Depth of Unmet Demand

	2025	2030	2035	2040	2045	2050
Shortage Probability	56%	100%	100%	100%	100%	100%
Average Annual Shortage (AF)	380	540	1,030	2,080	3,490	5,360
Average Annual Shortage (% of demand)	2%	3%	5%	9%	15%	21%
Maximum Annual Shortage (AF)	4,280	4,620	5,730	8,490	14,360	17,370
Maximum Annual Shortage (% of demand)	23%	24%	28%	38%	60%	67%

Figure 3-4: Projected Potable Water Supplies (Constrained) and Demands within PWD Service Area in 2050



4. OPTIONS DEVELOPMENT AND DESCRIPTIONS

A series of water supply and production options were considered to help meet PWD's projected water demands presented in Chapter 2, and address supply reliability concerns described in Chapter 3. This chapter describes the process used to develop the water supply and production options, as well as describing the assumptions used for each option.

4.1 Options Development

Water supply and production options developed for this SWRP build upon existing project concepts, water supply plans, and feasibility studies. The first step involved developing a list of options considered feasible under current or reasonable future water resources within the planning horizon of 2050. This included reviewing and updating the water supply and production options that were developed in the 2010 SWRP based on current water resource conditions. Other relevant concepts from recent planning studies were incorporated into the analysis. PWD Board members and staff participated in interactive meetings to refine these options and develop additional supply and production concepts. PWD's existing supply and production operations were used as a baseline for considering additional supply options. In total, fifteen options were identified for this analysis.

A planning level analysis was conducted to estimate the potential volumes of supply for each option. These volumes were calculated from assumptions developed on the use of existing infrastructure as well as the need for new infrastructure to implement an option. The supply yields for each option were also estimated based on assumptions about the long-term impacts of climate change. Several pieces of existing infrastructure were assumed to be available for use with the options, including production and conveyance infrastructure owned by PWD. The sources of supply and existing infrastructure referenced in this chapter are shown in **Figure 3-1** in Chapter 3.

4.2 Options Descriptions

This section presents a brief description of each of the fifteen water supply options that resulted from the options development process. These options, listed in **Table 4-1**, are organized by supply source, with the subsections on each option below describing how the water will be conveyed, produced, and/or treated to meet demands.

Table 4-1: Water Supply Options

No.	Option Name	Option Category	Average Annual Supply Volume
1	Imported Water, Tier 1	Imported Water	740
2	Imported Water, Tier 2	Imported Water	3,060[1]
3	Imported Water, Tier 3	Imported Water	2,050[1]
4	Purchase of Antelope Valley Basin Rights	Local Groundwater	2,000
5	Well Rehabilitation and/or Replacements of Existing Wells	Local Groundwater	0[2]
6	Palmdale Ditch Enhancements	Local Surface Water	1,500
7	Sediment Removal at Littlerock Reservoir	Local Surface Water	500
8	External Imported Water Storage	Recharge/Banking	Variable[3]
9	Internal Imported Water Storage	Recharge/Banking	Variable[3]
10	Internal Imported Water Storage via Upper Amargosa Water Bank	Recharge/Banking	Variable[3]
11	Nonpotable Reuse	Recycled Water	5,000
12	Direct Potable Reuse	Recycled Water	5,000
13	Indirect Potable Reuse – Recycled Water Augmentation at Palmdale Lake	Recycled Water	5,000
14	Indirect Potable Reuse – Recycled Water Injection	Recycled Water	4,500
15	Conservation	Other	Variable

1. An average reliability factor for State Water Project water of 51% has been applied to obtain the average annual supply volume.
2. Option provides facilities to maintain existing supplies only and does not include new water supplies.
3. Supply benefits from new water storage are dependent on quantity of water available to place into storage.

The imported water options presented in **Table 4-1** are limited by existing facility constraints. For example, the existing diversion capacity from the California Aqueduct to Lake Palmdale is only 30 cfs. As a result, PWD is limited in terms of the volume of water it can obtain. While a greater diversion capacity could increase PWD's opportunity to access additional imported water, upsizing this diversion would be difficult due to piping and intake structure constraints. This facility constraint limits the ability to implement the imported water supply options unless they are accompanied by additional options that increase PWD's ability to store water.

Two options presented in **Table 4-1** were screened out due to demand and regulatory constraints. PWD considered both potable and nonpotable reuse options for tertiary effluent from PWRP. Nonpotable reuse expansion (Option 11) was screened out because demand for nonpotable supplies, such as landscape

irrigation, is not anticipated to increase substantially in the region, resulting in a high unit cost of water. Potable reuse options were evaluated in the *Potable Reuse Alternatives Analysis* Technical Memorandum (TM) prepared for PWD (PWD 2022). The *Potable Reuse Alternatives Analysis* TM concluded that while direct potable reuse can increase the volume of existing supply, this option is not recommended because it is significantly more complex and expensive than indirect potable reuse options due to additional treatment (i.e., more energy consumption, higher capital costs), monitoring, and reporting, among other requirements. As a result, direct potable reuse (Option 12) was removed from this analysis.

4.2.1 Imported Water Options

As described in Chapter 3, PWD has received an average of 5,360 AFY of imported water from the SWP via the East Branch of the California Aqueduct over the last decade. The following options explore the feasibility of increasing imported supplies to PWD.

4.2.1.1 Imported Water, Tier 1 (Option 1)

Between 2011 and 2020, PWD had access to 7,339 AF of Article 21 water. However, PWD was only able to capture 335 AF due to storage capacity constraints. Under this option, PWD would capture as much Article 21 water as possible and convey it to a groundwater bank for later use. As a result, this option needs to be paired with an option to develop additional storage capacity to store water when it becomes available. On average, 740 AFY of Article 21 water would be made available to PWD.

There are no capital costs associated with this option. The water supply cost would be approximately $300 per AF in 2022 dollars for conveyance of the water through the aqueduct. Operations and maintenance (O&M) costs include the cost for treatment, which is approximately $817 per AF in 2022 dollars.

4.2.1.2 Imported Water, Tier 2 (Option 2)

PWD currently has long-term lease agreements with LCID and Butte County to access a portion of their Table A amounts through 2035. The existing lease agreement with Butte County allows for up to 10,000 AFY of their SWP Table A amount, while the lease agreement with LCID ranges between 75 percent and 100 percent of their SWP Table A amount, up to a maximum of 2,300 AFY. Under this option, PWD would renegotiate one or both agreements through at least 2050. Similar to Option 1, additional imported supplies would be conveyed to Lake Palmdale and/or a groundwater bank for later use. As a result, this option may need to be paired with an option to develop additional storage capacity. On average, it is estimated that this option would make 3,060 AFY of Tier 2 water available for diversion.

There are no capital costs associated with this option. The cost for LCID or Butte County transfer water is currently $340 per AF and is projected to increase by 4.3%, not including inflation. If projected out to 2050, this results in an average annual cost of $4.2 million per year in 2022 dollars. In addition, costs are assumed to include conveyance and treatment costs equal to $817 per AF. In total, this option is estimated to cost approximately $1,400 per AF.

4.2.1.3 Imported Water, Tier 3 (Option 3)

Under Option 3, PWD would enter into new agreements for the permanent transfer or exchange of imported water rights. Water supply exchange or transfer opportunities include, but are not limited to, SWP Table A rights, Central Valley Project water rights, or appropriative water rights acquired prior to 1914 (referred to

as Pre-1914 appropriative water right). PWD could also partner with other SWP contractors to construct seawater desalination facilities in a coastal location in exchange for SWP supplies delivered via the East Branch of the Aqueduct. While this option is similar to Option 2, these types of transfers or exchanges would be considered Tier 3 because renegotiating an existing transfer agreement for SWP supplies (as proposed in Option 2) would be easier and thus prioritized over engaging in a new transfer of available SWP water. On average, it is estimated that this option would make up to 5,000 AFY of Tier 3 water available for diversion.

Capital costs for a permanent transfer of water rights are assumed to be $10,000 per AF of water rights purchased, which equals $40,000,000 in 2022 dollars for 4,000 AFY of water rights. In addition, costs are assumed to include conveyance and treatment costs equal to $817 per AF. In total, this option is estimated to cost approximately $1,300 per AF, assuming capital is financed at 3% over 30 years.

4.2.2 Local Groundwater Options

PWD has pumped an average of 8,030 AFY of groundwater supplies over the last decade. The following options explore the feasibility of increasing groundwater supplies to PWD.

4.2.2.1 Purchase of Antelope Valley Basin Rights (Option 4)

As described in Chapter 3, PWD currently has a groundwater production right of 2,770 AFY, an average Federal Reserved Water Right of 1,450 AFY, and a return flow credit equal to 39.1 percent of all the SWP water utilized by PWD. Under this option, PWD would purchase 4,000 AFY of production rights from other groundwater users in the Basin to access additional groundwater supplies. This option would require drilling and equipping eight new wells outside of PWD's service area, as well as a pipeline to convey groundwater to PWD's distribution system. On average, it is estimated that this option would increase groundwater supplies by 4,000 AFY, but would primarily be needed to provide supply in peak demand months.

The option to purchase groundwater rights would have a capital cost of approximately $39.5 million in 2022 dollars for new wells and a pipeline, and an O&M cost for maintaining these facilities of approximately $409,000 per year. The cost to produce groundwater is approximately $200 per AF in 2022 dollars. In total, this option is estimated to cost approximately $1,400 per AF, assuming the purchase of rights is financed at 3% over 30 years.

4.2.2.2 Well Rehabilitation and/or Replacements of Existing Wells (Option 5)

PWD currently operates 22 groundwater wells in the Basin with a maximum pumping volume of approximately 11,000 AFY (approximately 9.8 mgd). Under this option, PWD would repair, rehabilitate and/or replace the existing PWD wells to maintain existing pumping capacity and enable greater pumping during dry years. Based on the current capacity versus earliest recorded capacity described in the 2020 Well Rehabilitation Prioritization Program Report, repair, rehabilitation and replacement of all wells described could potentially increase pumping capacity to 16 mgd. While implementation of this option would improve the resilience of the production wells, this option by itself would only maintain baseline pumping capacity but not increase groundwater supplies. This option would need to be paired with another groundwater supply project to increase access to additional groundwater supplies.

Assuming five wells are replaced, capital costs are approximately $35,000,000, and rehabilitation of wells (considered O&M) would cost approximately $1,340,000, for a total cost of $36,340,000 in 2022 dollars.

4.2.3 Local Surface Water Options

As described in Chapter 3, PWD and LCID have water rights to divert 5,500 AFY from Littlerock Creek. The first 13 cfs of Littlerock Creek flows are available to LCID, and any flow above 13 cfs is split between the two districts, with 75 percent going to PWD and 25 percent going to LCID. The potential for increasing local surface water supplies to PWD is described in the following sections.

4.2.3.1 Palmdale Ditch Enhancements (Option 6)

The Palmdale Ditch is a 7.2-mile long part earthen and part concrete-lined open ditch that conveys water from Littlerock Dam Reservoir to Lake Palmdale. It is estimated that up to 25 percent of water supplies are lost due to evaporation and seepage from the ditch. This option would replace the open ditch with a pipeline to reduce losses, and increase flow capacity from 25 cfs to 60 cfs to divert more water from the Littlerock Dam Reservoir. This would allow PWD to increase the average diversion closer to 5,500 AF/Y. The option is estimated to yield up to 1,500 AFY in losses alone.

Palmdale Ditch Enhancements would have a capital cost of approximately $18,100,000 in 2022 dollars. O&M costs are assumed to be no more than the current cost of O&M, and therefore are not included. The annual water supply cost of $508 per AF in 2022 dollars includes the cost to treat the water at Leslie O. Carter WTP and assuming capital cost is financed at 3% over 30 years. In total, this option is estimated to cost approximately $1,100 per AF.

4.2.3.2 Sediment Removal at Littlerock Reservoir (Option 7)

Littlerock Reservoir is a man-made feature formed by the impoundment of water by the Littlerock Dam. The initial design capacity of Littlerock Reservoir was 4,300 AF; however, this capacity was substantially reduced to approximately 1,600 AF because of the deposition of sediment behind Littlerock Dam. In 1992, the height of Littlerock Dam was raised to restore storage capacity to 3,500 AF. Since then, sedimentation has reduced storage capacity by 600 to 700 AF, thus limiting an equivalent amount of local supply storage. Sediment removal activities currently underway are assumed to increase reservoir capacity by approximately 200 AF, increasing capacity from 2,874 AF to 3,074 AF. This option would also restore the capacity of the Littlerock Reservoir to 3,583 AF through the removal of 1,165,000 net cubic yards of sediment accumulated behind the Littlerock Dam. As a result, reservoir capacity would be additionally increased by approximately 500 AF (from 3,074 AF to 3,583 AF). The additional supply available for diversions will depend on the number of times the reservoir fills per year and is assumed to be a minimum of 500 AFY.

Sediment Removal at Littlerock Reservoir would cost approximately $40-45 per cubic yard of sediment removed, for a total cost of $52,000,000. There are no O&M costs associated with this option. The annual cost of $5,800 per AF in 2022 dollars includes the cost to treat the water at Leslie O. Carter WTP.

4.2.4 Recharge/Banking Options

PWD is actively looking at potential options to increase the storage of wet year water supplies as they become available for use in dry years. The following sections summarize potential options for recharge/banking water both within and outside of the Antelope Valley.

4.2.4.1 External Imported Water Storage (Option 8)

Under this option, PWD would store excess SWP supplies during wet years in an existing groundwater bank outside the Antelope Valley, such as the Semitropic Water Bank. During dry or drought periods when imported water supplies are limited or insufficient, this stored water would then be conveyed back into the California Aqueduct and diverted to Lake Palmdale for treatment and use. For planning purposes, this option assumes that up to 15,000 AF of external storage would be available for groundwater banking. As described in Chapter 3, the use of these banked imported supplies would provide PWD with an additional 39 percent imported water return flow credit. While implementing this option would provide imported water storage for use during dry years, this option by itself would not increase water supplies. This option would need to be paired with another supply project, such as Options 1-3 presented above, to increase access to additional water supplies.

Assuming a 10,000 AFY take capacity and 40,000 AF storage capacity, the Internal Imported Water Storage option would have a capital cost of approximately $88,000,000 (assuming $2,200 per AF of storage space) and an O&M cost of $90,300 per year. In addition, storage, extraction and power cost for pumping is estimated at $206 per AF.

4.2.4.2 Internal Imported Water Storage (Option 9)

Similar to Option 8, this option would store excess SWP supplies during wet years in an existing groundwater bank within the Antelope Valley, such as at the High Desert Water Bank or other AVEK banking facility, or store water in PWD-controlled recharge areas such as Big Rock Creek. If stored in the High Desert Water Bank or other AVEK banking facility, the stored water would then be pumped back into the California Aqueduct and diverted to Lake Palmdale for use during dry or drought periods when imported water supplies are limited or insufficient. If stored in a PWD-controlled facility such as Big Rock Creek, PWD would need to construct new wells to pump the banked water and connect to the existing distribution system. Water banked in the Basin is subject to a 10 percent leave-behind requirement, as stipulated by the AV Watermaster Rules and Regulations and storage agreements. Like with Option 8, this option would need to be combined with another supply project, such as Options 1-3, to provide additional water supplies.

Assuming a 10,000 AFY take capacity and 40,000 AF storage capacity, the External Imported Water Storage option would have a capital cost of approximately $88,000,000 (assuming $2,200 per AF storage capacity) and an O&M cost of $90,300 per year. In addition, storage, extraction and power cost for pumping is estimated at $206 per AF.

4.2.4.3 Internal Imported Water Storage via Upper Amargosa Water Bank (Option 10)

Completed in 2019, the Upper Amargosa Creek Recharge project was a joint effort between PWD, the City of Palmdale, AVEK, and Los Angeles County Waterworks District 40 to convey water from the California Aqueduct to a series of recharge ponds and replenish the Basin. PWD currently has a right to recharge 1,378 AFY into the Upper Amargosa Creek Recharge Project. Under this option, PWD would maximize its 25% share of recharge capacity and store excess SWP supplies during wet years in the Upper Amargosa Water Bank. PWD would construct new wells to pump the banked water and connect to the existing distribution system for use during dry or drought periods. Per the storage agreement, water banked in the years in the Upper Amargosa Water Bank is subject to a 10 percent leave-behind requirement. Like with Options 8 and

9, this option would need to be combined with another supply project, such as Options 1-3, to provide additional water supplies.

The Internal Imported Water Storage via Upper Amargosa Water Bank option would have a capital cost of approximately $14,000,000 for construction of new wells to produce the stored water and an O&M cost of $465,000 per year, assuming a pumping rate of 2,000 AFY during dry years (i.e., 3 out of 10 years).

4.2.5 Recycled Water Options

PWD has signed an agreement to purchase 5,325 AFY of tertiary effluent from PWRP, owned and operated by LACSD. PWD considered both potable and nonpotable reuse options for this tertiary effluent. As stated in the introduction to **Section 4.2**, nonpotable reuse options (Option 11) were screened out because demand for nonpotable supplies is not anticipated to increase substantially in the region. Direct potable reuse options (Option 12) were also screened out because of the increased complexity and cost associated with additional treatment, monitoring, and reporting, among other requirements. The following sections summarize the two indirect potable reuse options remaining for recycled water use.

4.2.5.1 Recycled Water Augmentation at Palmdale Lake (Option 13)

With Option 13, PWD would construct an Advanced Water Purification Facility (AWPF) near the PWRP. Tertiary effluent from PWRP would be sent to the AWPF for advanced treatment, consisting of low-pressure Membrane Filtration (MF), reverse osmosis (RO), and an advanced oxidation process (AOP). The advanced treated water would be conveyed to Palmdale Lake and retained for at least 60 days before being sent to the Leslie O. Carter WTP for potable use. While the Leslie O. Carter WTP has a treatment capacity of 30 mgd, this option would limit the maximum flow to the Leslie O. Carter WTP to 22.8 mgd to ensure that the water has a hydraulic retention time of a minimum 60 days. This option would provide an average of 5,000 AFY of surface water for augmentation at Palmdale Lake, assuming a brine loss of up to 15 percent.

The Recycled Water Augmentation at Palmdale Lake option would have a capital cost of approximately $119,700,000 and an O&M cost of $4,900,000 per year. Costs also include $500 per AF to treat the water at Leslie O. Carter WTP. In total, this option is estimated to cost approximately $2,200 per AF.

4.2.5.2 Recycled Water Injection (Option 14)

Similar to Option 13, PWD would construct an AWPF near the PWRP. Tertiary effluent from PWRP would then be conveyed to AWPF for advanced treatment, consisting of MF, RO, and AOP. The product water treated at the AWPF would then be directly injected into the Basin via an injection well. Assuming a brine loss of up to 15 percent, this indirect potable reuse project would yield an average 5,000 AFY for groundwater recharge (PWD, 2021b). In addition, it's assumed that PWD would be subject to a 10 percent leave-behind requirement by the watermaster, resulting in approximately 4,500 AFY of supply available for pumping. This option would require drilling and equipping of approximately 5 new wells to extract the recharged water, as well as a pipeline to convey the water to PWD's distribution system.

The Recycled Water Augmentation at Palmdale Lake option would have a capital cost of approximately $138,600,000, which includes the construction of 5 wells at $7,000,000 per well, and an O&M cost of $6,000,000 per year. In total, this option is estimated to cost approximately $2,600 per AF.

4.2.6 Demand Management Options

The options presented in **Section 1** through **Section 4.2.5** all increase water supply or storage to meet future demand. In this section, demand management options focus on reducing the demand for water by improving water use efficiency and reducing water waste rather than increasing supply availability. The potential for demand management within PWD's service area is described in the following section.

4.2.6.1 Conservation (Option 15)

California Senate Bill (SB) 606 and Assembly Bill (AB) 1668, collectively known as the Water Conservation and Efficiency Bills, require urban water suppliers to establish water use targets by 2022 and develop plans to achieve those targets by 2025. The bills also establish new water use efficiency standards and water loss reporting requirements. Under this option, PWD would implement conservation measures to reduce potable water demand by 1,400 AFY by 2025 and meet the SB 606/AB 1668 requirements. It is assumed that this option will be required in every alternative portfolio analyzed in Chapter 5.

There would be no capital or O&M costs associated with the implementation of this option.

5. ALTERNATIVE DESCRIPTIONS AND EVALUATION

The purpose of this SWRP is to facilitate robust decision-making when implementing projects that aim to meet future service area demands. The following sections describe the development and evaluation process used to identify a preferred alternative to guide future project implementation. The alternatives development and evaluation process is shown in **Figure 5-1** and described in greater detail in the following sections.

Figure 5-1: Alternatives Development and Evaluation Process

5.1 Alternatives Development

The central component of this SWRP evaluation is the alternatives, each of which are comprised of a group of options presented in Chapter 4. There are multiple methods and approaches to assembling alternatives using the options. The alternatives were developed and differentiated by their use of unique combinations of water resource types such as imported water, groundwater, local surface water, and recycled water. Different combinations of supply types were then coupled with storage options, additional production, distribution, and other elements were added to each alternative to reflect PWD's water system and resources future. This process resulted in eleven alternatives, summarized in **Table 5-1**. The eleven alternatives were developed and evaluated based on the ability to meet complex water resources challenges and achieve SWRP goals.

Table 5-1: Alternatives Summary

Alternative	Focus
1. Imported Water	Internal banking
2. Imported Water	External banking
3. Recycled Water	Groundwater injection
4. Recycled Water	Surface water augmentation
5. Hybrid Imported Water/Recycled Water	Imported water external banking, recycled water injection
6. Hybrid Imported Water/Recycled Water	Imported water internal banking, recycled water surface water augmentation
7. Hybrid Surface Water/Recycled Water	Surface water enhancement, recycled water injection
8. Hybrid Groundwater/Recycled Water	Groundwater rights, recycled water injection
9. Hybrid Imported Water/Recycled Water	Imported water internal banking, recycled water injection
10. Hybrid Recycled Water	Recycled water injection, recycled water surface water augmentation
11. Hybrid Groundwater/Recycled Water/ Surface Water	Groundwater rights, recycled water injection, surface water enhancement

Each alternative has a unique combination of supply, production, and storage options. Once combined, individual alternatives were modified as needed to remove redundancies, refine supply volumes and optimize infrastructure. For example, an alternative that relies heavily on imported water will not include distribution, storage and other components associated with producing more local supply. All alternatives include supply and production options that are required by regulations (e.g., conservation to comply with SB 606/AB 1668) or that are required to maintain baseline supplies (e.g., well rehabilitation and/or replacement). As discussed in Chapter 4, none of the alternatives include nonpotable or direct potable reuse due to demand and regulatory constraints. In addition, all alternatives assume that well rehabilitation and/or replacements of existing wells and conservation efforts would continue. A summary of options to be implemented under each alternative is provided in **Table 5-2**. A more detailed description of each alternative, including the projected water supply shortage frequency and depth of unmet demand, is provided in the following sections.

Table 5-2: Options and Alternatives Summary

Options	Alternative										
	1	2	3	4	5	6	7	8	9	10	11
1. Imported Water, Tier 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2. Imported Water, Tier 2	✓	✓		✓	✓				✓		
3. Imported Water, Tier 3	✓	✓									
4. Purchase of Antelope Valley Basin Rights								✓			✓
5. Well Rehabilitation and/or Replacements of Existing Wells	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6. Palmdale Ditch Enhancements							✓				✓
7. Sediment Removal at Littlerock Reservoir							✓				
8. External Imported Water Storage		✓			✓						
9. Internal Imported Water Storage	✓					✓			✓		
10. Internal Imported Water Storage via Upper Amargosa Water Bank	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11. Nonpotable Reuse											
12 Direct Potable Reuse											
13. Indirect Potable Reuse – Recycled Water Augmentation at Palmdale Lake				✓		✓				✓	
14. Indirect Potable Reuse – Recycled Water Injection			✓		✓		✓	✓	✓	✓	✓
15. Conservation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

5.1.1 Alternative 1 – Imported Water (Internal Banking)

Alternative 1 focuses on maximizing imported water supplies and developing additional storage capacity within the Antelope Valley Basin (Basin) to store surplus imported water when it becomes available in wet years for use in dry or drought periods. Under this alternative, PWD would maximize the use of Tier 1 (Article 21) imported water, and purchase or lease up to 10,600 AFY Tier 2 and Tier 3 imported water Table A allocations. Imported water not used directly would be stored in local banking facilities, including an AVEK Water Bank and the Upper Amargosa Water Project. This includes up to 1,600 AFY of imported water recharged via the Upper Amargosa Water Project and up to 12,000 AFY of imported water stored in an

Antelope Valley water bank. In addition, unused groundwater would be carried over as storage in the Basin. Any water stored in an Antelope Valley Water Bank is assumed to primarily be pumped back into the aqueduct, though it's also possible to exchange water stored for groundwater. Up to 61,000 AF would be stored in the Antelope Valley via the Antelope Valley Water Bank, the Upper Amargosa Water Project and groundwater carryover. Two new wells are assumed to be needed to pump the stored water in the Basin (assuming a capacity of 1.7 mgd per well), in addition to five well replacements identified in the Well Rehabilitation Program.

A map of the potential components under this Alternative is shown in **Figure 5-2**. **Figure 5-3** shows, on average, the amount and type of supply that will be used under this alternative to meet demand in 2050. The projected water supply shortage frequency and depth of unmet demand is summarized in **Section 5.1.12 below**.

Figure 5-2: Alternative 1 Facility Locations

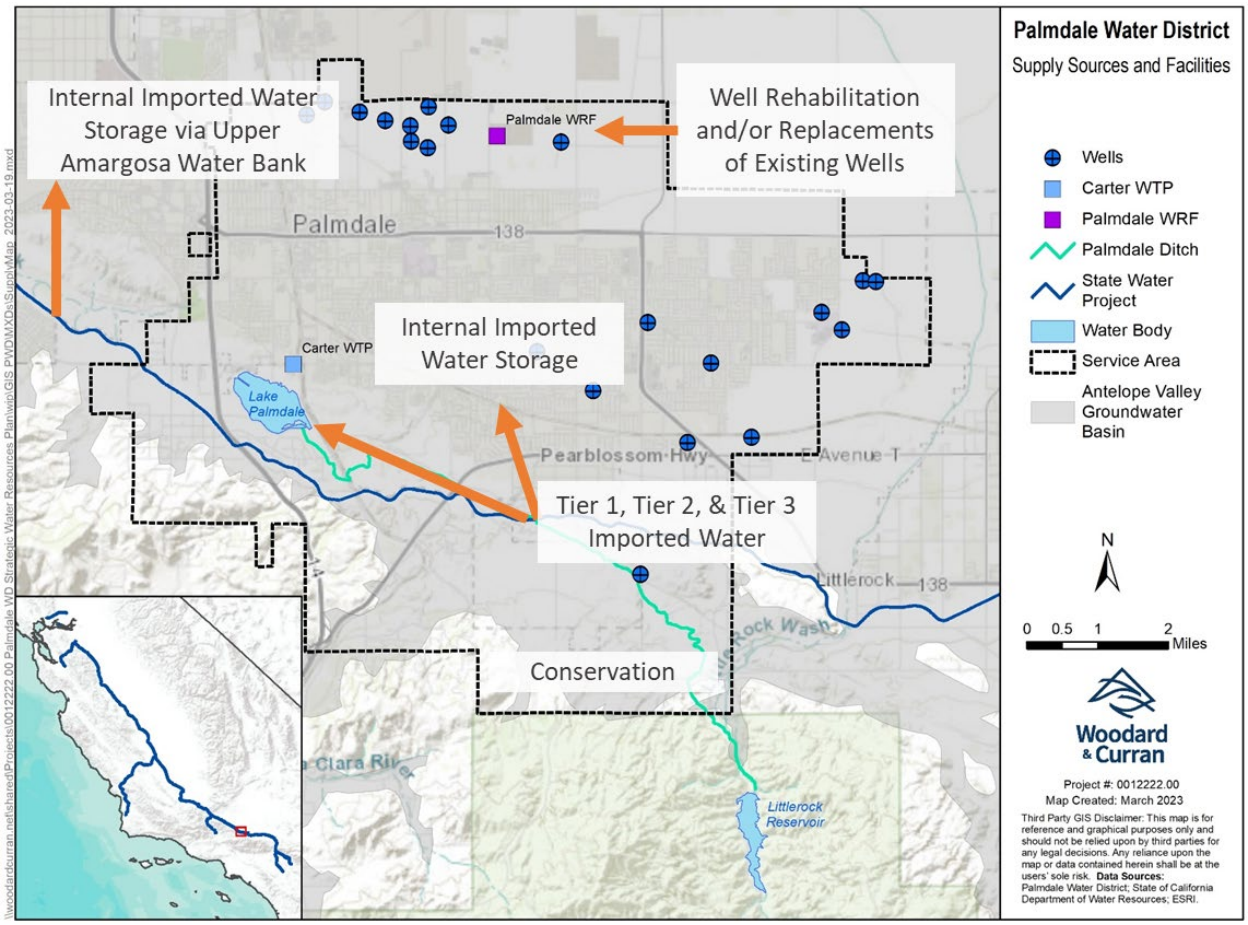
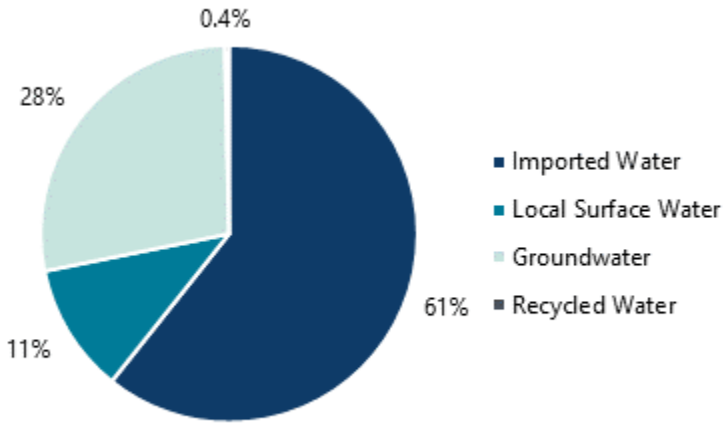


Figure 5-3: Alternative 1 Average Annual Supply Portfolio (2050)



5.1.2 Alternative 2 – Imported Water (External Banking)

Alternative 2 focuses maximizing imported water supplies and developing additional storage capacity outside the Antelope Valley to store surplus imported water when it becomes available in wet years for use in dry or drought periods. PWD would negotiate a storage agreement with an external bank, such as the Semitropic Water Bank, to store imported water supplies. Under this alternative, PWD would purchase and store up to 24,000 AF of Tier 1, Tier 2, and Tier 3 imported water supplies in a water bank outside of the Antelope Valley. PWD would also store up to 40,000 AF of imported water and groundwater carryover in the Basin. This includes up to 1,600 AFY of imported water recharged via the Upper Amargosa Water Project. Two new wells are assumed to be needed to pump the stored water in the Basin (assuming a capacity of 1.7 mgd per well), in addition to five well replacements identified in the Well Rehabilitation Program.

A map of the potential components under this Alternative is shown in **Figure 5-4**. **Figure 5-5** shows, on average, the amount and type of supply that will be used under this alternative to meet demand in 2050. The projected water supply shortage frequency and depth of unmet demand is summarized in **Section 5.1.12** below.

Figure 5-4: Alternative 2 Facility Locations

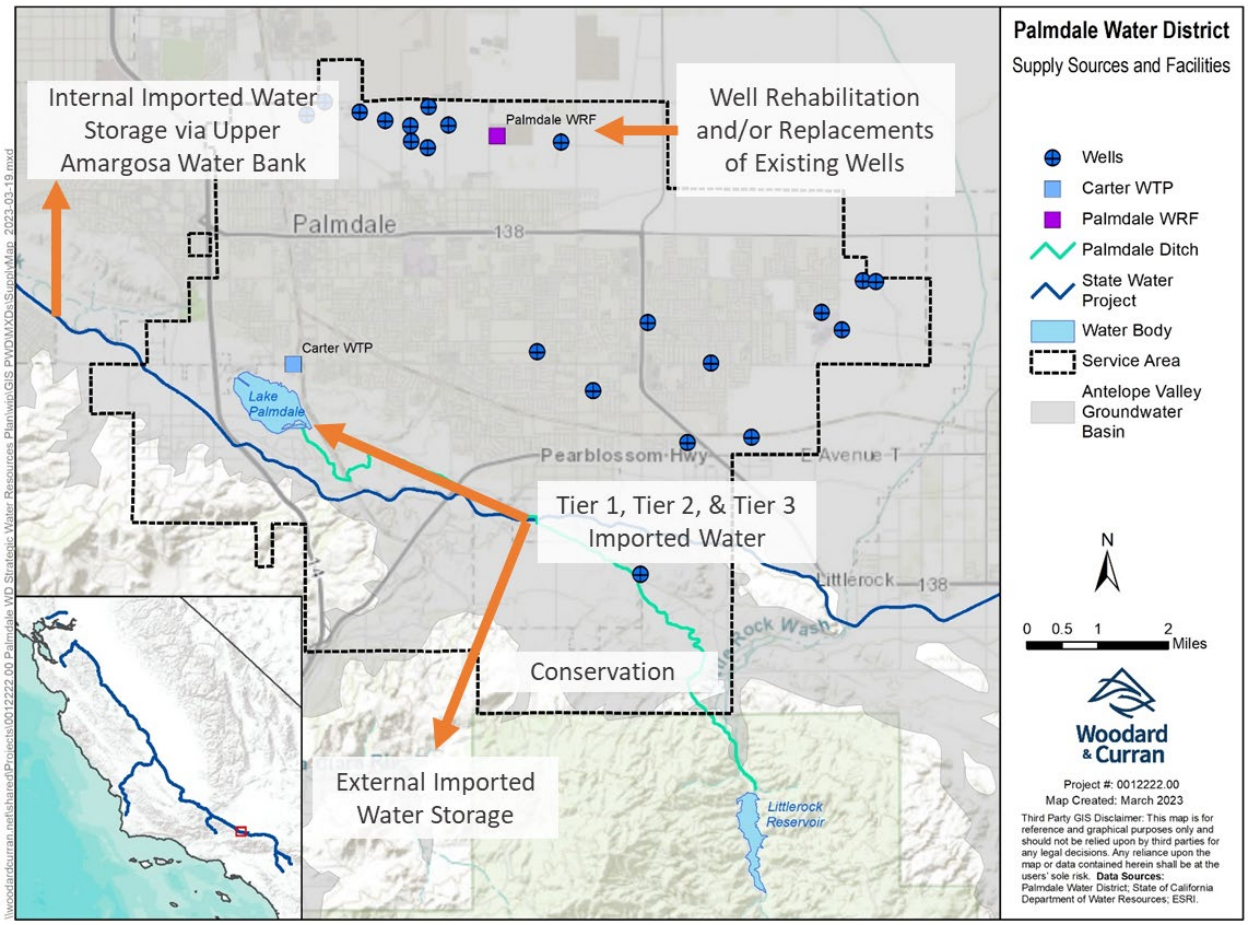
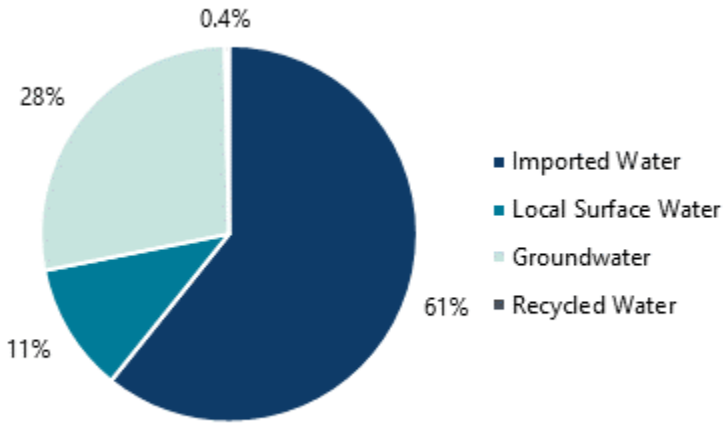


Figure 5-5: Alternative 2 Average Annual Supply Portfolio (2050)



5.1.3 Alternative 3 – Recycled Water (Groundwater Injection)

Alternative 3 focuses on increasing local water supply reliability by recharging recycled water supplies to augment existing groundwater supplies in the Basin. Under this alternative, PWD would inject 4,500 AFY of recycled water supplies into the Basin annually. PWD would also store up to 32,500 AF of Tier 1 imported water, recycled water, and groundwater carryover in the Basin. This includes up to 1,600 AFY of imported water recharged via the Upper Amargosa Water Project. Seven new wells are assumed to be needed to pump the stored water in the Basin (assuming a capacity of 1.7 mgd per well), in addition to five well replacements identified in the Well Rehabilitation Program.

A map of the potential components under this Alternative is shown in **Figure 5-6**. **Figure 5-7** shows, on average, the amount and type of supply that will be used under this alternative to meet demand in 2050. The projected water supply shortage frequency and depth of unmet demand is summarized in **Section 5.1.12 below**.

Figure 5-6: Alternative 3 Facility Locations

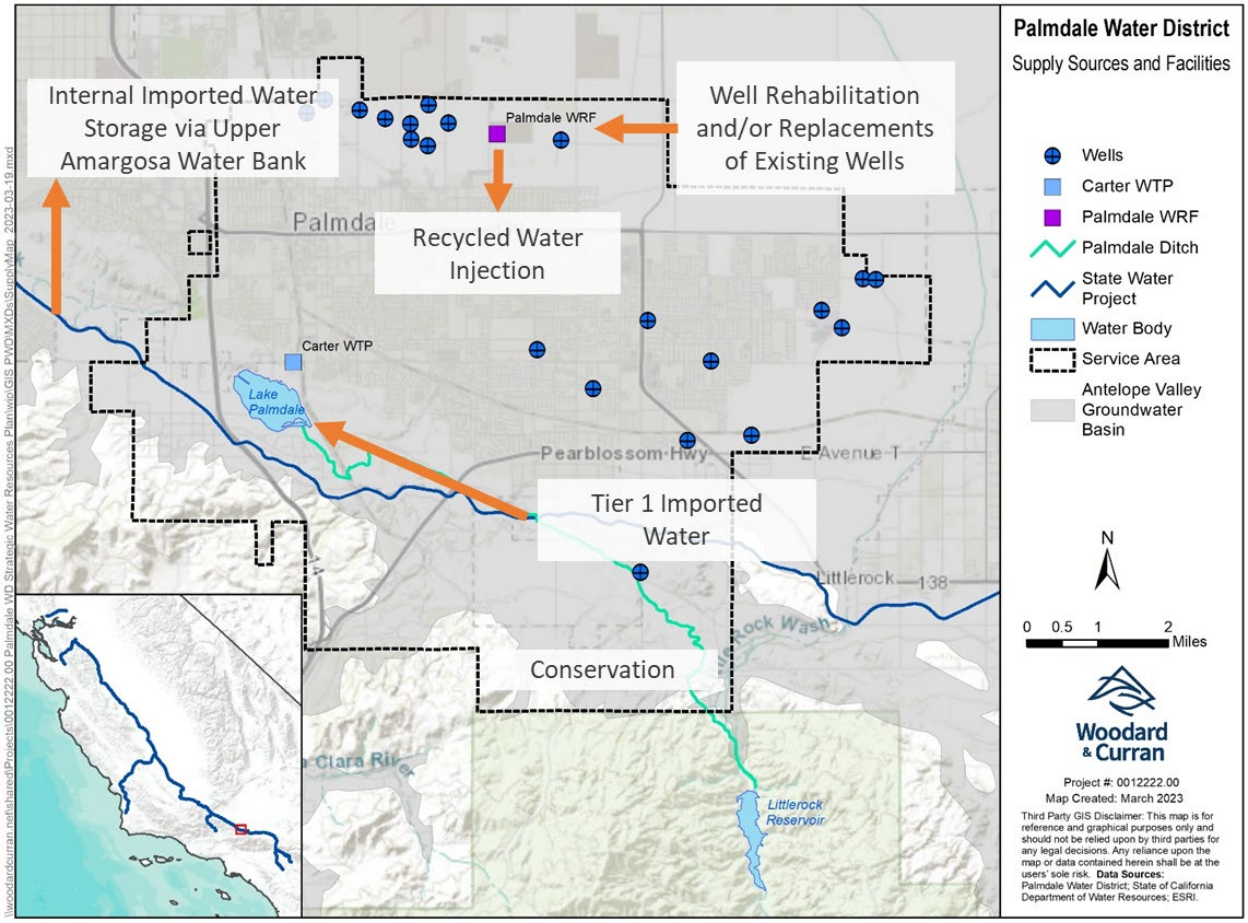
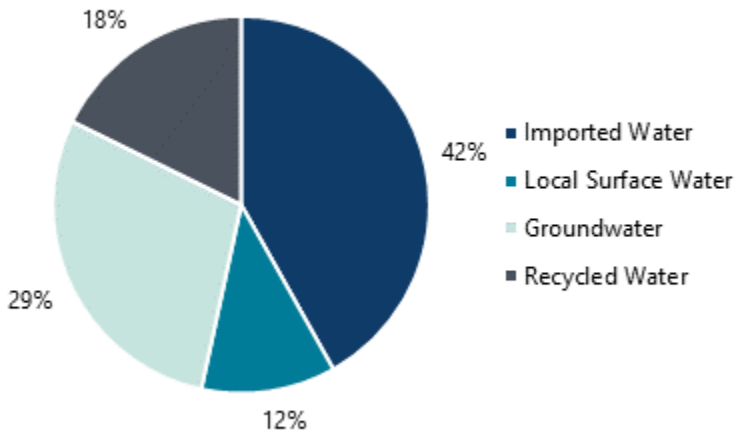


Figure 5-7: Alternative 3 Average Annual Supply Portfolio (2050)



5.1.4 Alternative 4 – Recycled Water (Surface Water Augmentation)

Alternative 4 focuses on increasing local water supply reliability by conveying recycled water supplies into Lake Palmdale. Under this alternative, 5,000 AF of recycled water supplies would be diverted to Lake Palmdale annually to augment surface water supplies. PWD would also store up to 29,000 AF of Tier 1 and Tier 2 imported water supplies as well as groundwater carryover in the Basin. This includes up to 1,600 AFY of imported water recharged via the Upper Amargosa Water Project. Two new wells are assumed to be needed to pump the stored water in the Basin (assuming a capacity of 1.7 mgd per well), in addition to five well replacements identified in the Well Rehabilitation Program.

A map of the potential components under this Alternative is shown in **Figure 5-8**. **Figure 5-9** shows, on average, the amount and type of supply that will be used under this alternative to meet demand in 2050. The projected water supply shortage frequency and depth of unmet demand is summarized in **Section 5.1.12** below.

Figure 5-8: Alternative 4 Facility Locations

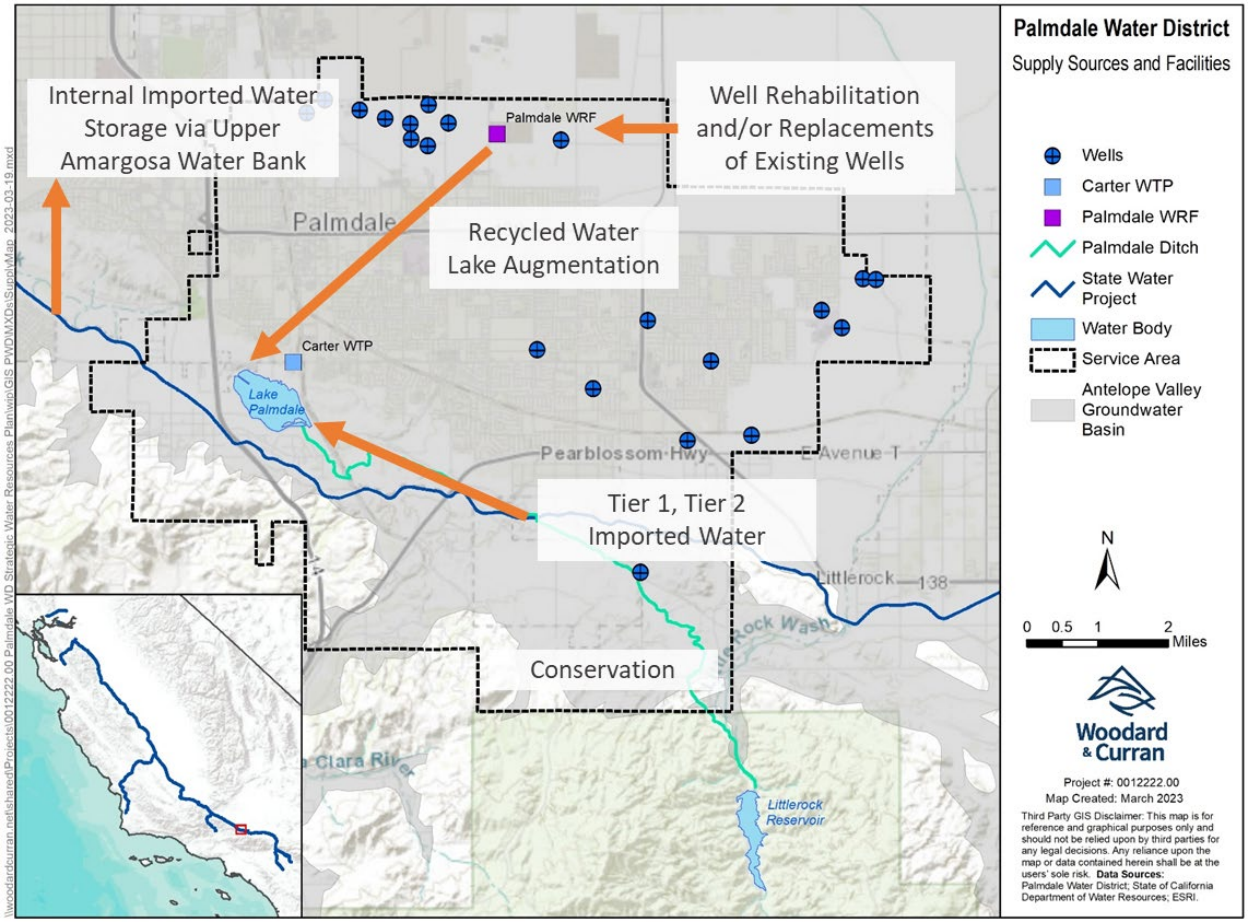
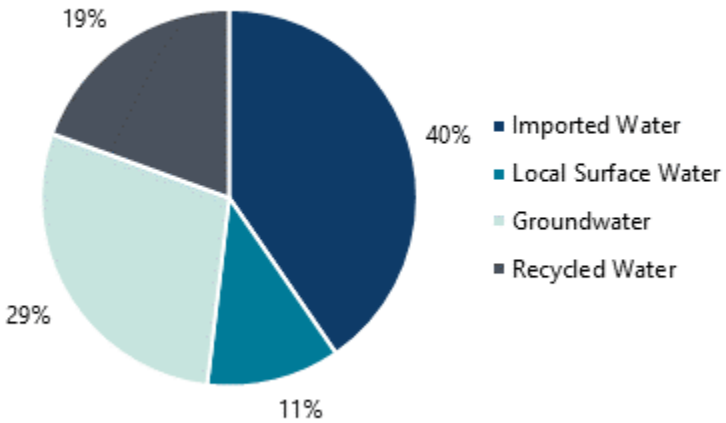


Figure 5-9: Alternative 4 Average Annual Supply Portfolio (2050)



5.1.5 Alternative 5 – Hybrid Imported Water/Recycled Water (External Banking and Recycled Water Injection)

Alternative 5 focuses on maximizing imported water supplies and developing additional storage capacity outside the Antelope Valley to store surplus imported water when it becomes available in wet years, as well as recharging recycled water supplies to augment existing groundwater supplies in the Basin. Under this alternative, PWD would store up to approximately 9,200 AF of Tier 1 and Tier 2 imported water supplies in the Semitropic Water Bank. PWD would also inject 5,000 AF of recycled water supplies into the Basin annually. It's assumed that 10% of the recharged recycled water (500 AFY) would be left in the basin to improve basin health. In addition, it's assumed that PWD would store up to 33,000 AF of imported water, recycled water, and unused groundwater in the Basin. This includes up to 1,600 AFY of imported water recharged via the Upper Amargosa Water Project. Seven new wells are assumed to be needed to pump the stored water in the Basin (assuming a capacity of 1.7 mgd per well), in addition to five well replacements identified in the Well Rehabilitation Program.

A map of the potential components under this Alternative is shown in **Figure 5-10**. **Figure 5-11** shows, on average, the amount and type of supply that will be used under this alternative to meet demand in 2050. The projected water supply shortage frequency and depth of unmet demand is summarized in **Section 5.1.12 below**.

Figure 5-10: Alternative 5 Facility Locations

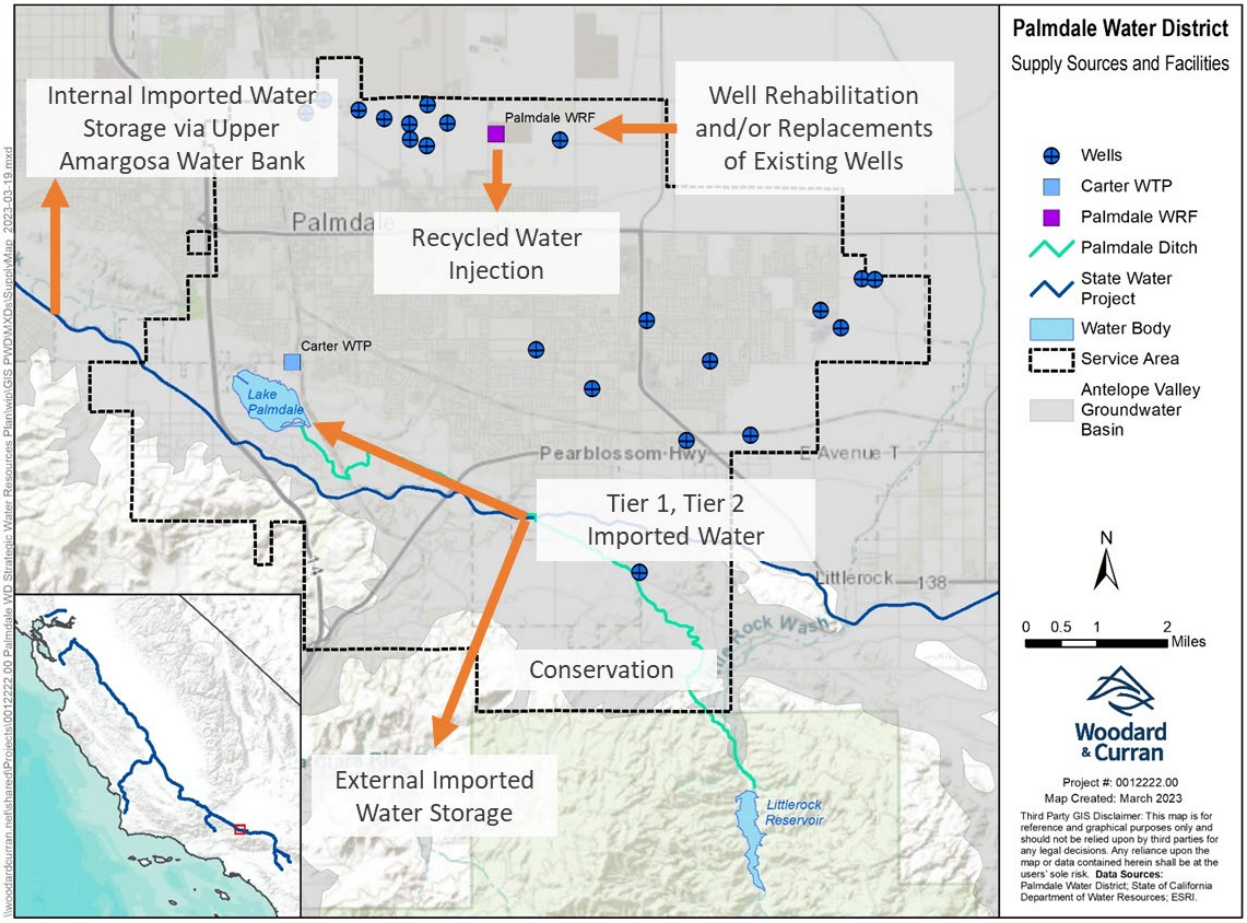
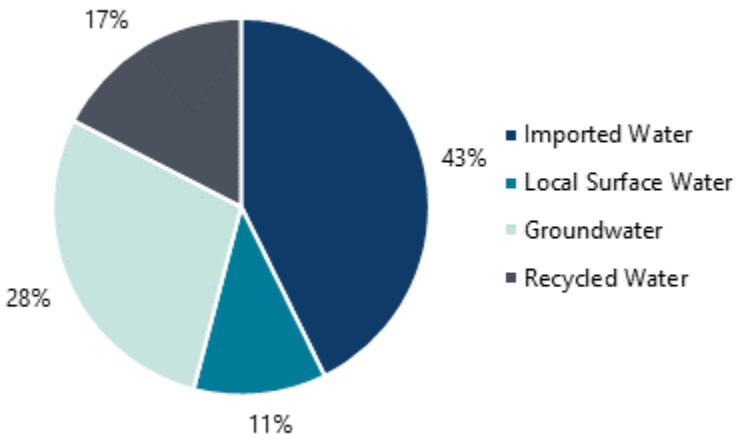


Figure 5-11: Alternative 5 Average Annual Supply Portfolio (2050)



5.1.6 Alternative 6 – Hybrid Imported Water/Recycled Water (Internal Banking and Surface Water Augmentation)

Alternative 6 focuses on maximizing imported water supplies and developing additional storage capacity within the Basin to store surplus imported water when it becomes available in wet years, as well as increasing local water supply reliability by conveying recycled water supplies into Lake Palmdale. Under this alternative, approximately 5,000 AFY of recycled water supplies would be transported to Lake Palmdale to augment surface water supplies. PWD would also store up to 25,000 AF of Tier 1 imported water and unused groundwater in the Basin. This includes up to 1,600 AFY of imported water recharged via the Upper Amargosa Water Project and up to 7,800 AFY of imported water stored in an Antelope Valley Water Bank. Any water stored in an Antelope Valley Water Bank is assumed to primarily be pumped back into the aqueduct, though it's also possible to exchange stored water for pumped groundwater. Two new wells are assumed to be needed to pump the stored water in the Basin (assuming a capacity of 1.7 mgd per well), in addition to five well replacements identified in the Well Rehabilitation Program.

A map of the potential components under this Alternative is shown in **Figure 5-12**. **Figure 5-13** shows, on average, the amount and type of supply that will be used under this alternative to meet demand in 2050. The projected water supply shortage frequency and depth of unmet demand is summarized in **Section 5.1.12** below.

Figure 5-12: Alternative 6 Facility Locations

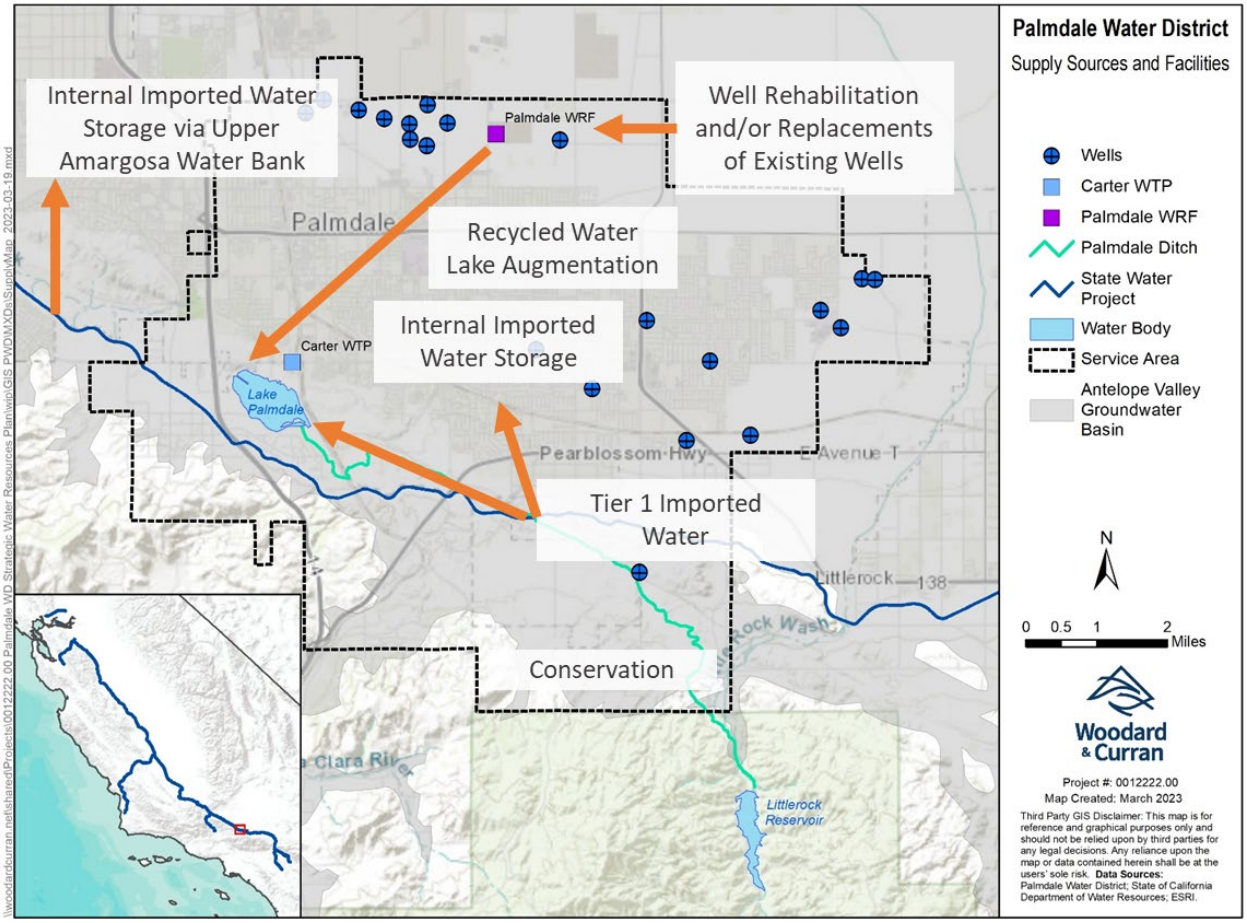
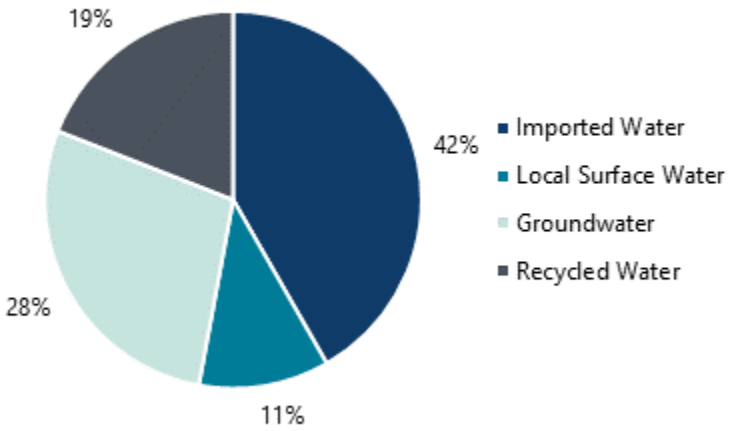


Figure 5-13: Alternative 6 Average Annual Supply Portfolio (2050)



5.1.7 Alternative 7 – Hybrid Surface Water/Recycled Water

Alternative 7 focuses on increasing local water supply reliability by maximizing local surface water supplies and recharging recycled water supplies to augment existing groundwater supplies in the Basin. Under this alternative, PWD would implement Palmdale Ditch enhancements to reduce conveyance losses, as well as restore capacity at Littlerock Reservoir. The Palmdale Ditch enhancements and restored capacity of Littlerock Reservoir would result in an average increase of 2,000 AFY of local surface water. In addition, PWD would store up to 30,000 AF of Tier 1 imported water, recycled water, and groundwater carryover in the Basin. This includes up to 1,600 AFY of imported water recharged via the Upper Amargosa Water Project and 5,000 AFY of recycled water supplies recharged into the Basin annually. It's assumed that 10% of the recharged recycled water (500 AFY) would be left in the basin to improve basin health. Seven new wells are assumed to be needed to pump the stored water in the Basin (assuming a capacity of 1.7 mgd per well), in addition to five well replacements identified in the Well Rehabilitation Program.

A map of the potential components under this Alternative is shown in **Figure 5-14**. **Figure 5-15** shows, on average, the amount and type of supply that will be used under this alternative to meet demand in 2050. The projected water supply shortage frequency and depth of unmet demand is summarized in **Section 5.1.12** below.

Figure 5-14: Alternative 7 Facility Locations

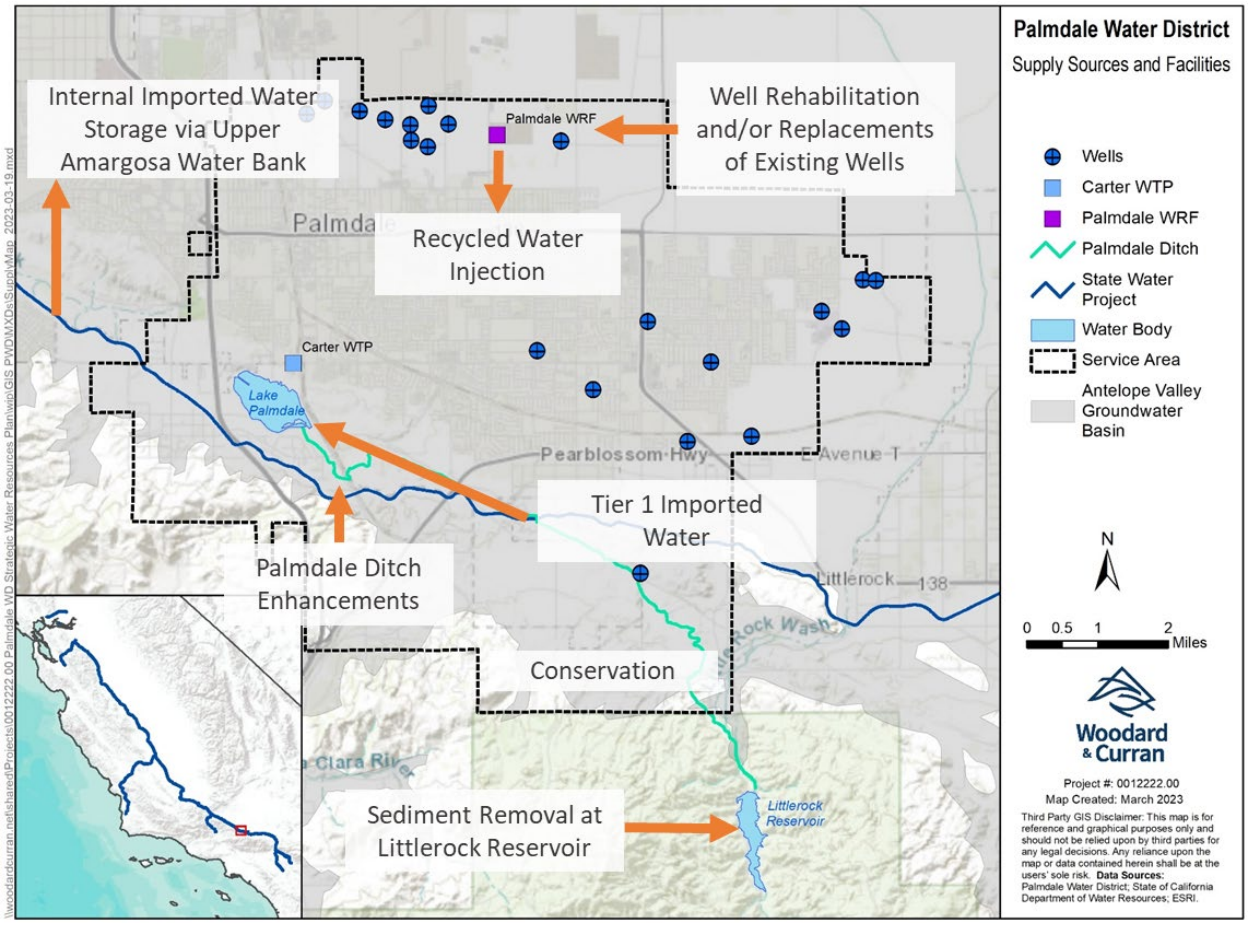
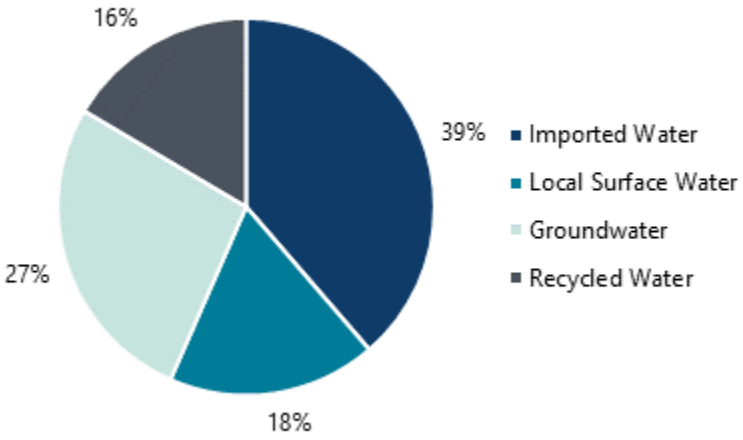


Figure 5-15: Alternative 7 Average Annual Supply Portfolio (2050)



5.1.8 Alternative 8 – Hybrid Groundwater/Recycled Water

Alternative 8 focuses on increasing local water supply reliability by recharging recycled water supplies and purchasing groundwater production rights to augment existing groundwater supplies. Under this alternative, PWD would store up to 32,000 AF of Tier 1 imported water, recycled water, and groundwater carryover in the Basin. Groundwater production rights would be enhanced through the purchase of 2,000 AFY of production rights from other groundwater users in the Basin. In addition, PWD would recharge up to 1,600 AFY of imported water recharged via the Upper Amargosa Water Project and 5,000 AFY of recycled water supplies recharged into the Basin annually. It's assumed that recycled water recharge would require a 10% leave-behind to improve the health of the Basin. Seven new wells are assumed to be needed to pump the stored water in the Basin (assuming a capacity of 1.7 mgd per well), in addition to five well replacements identified in the Well Rehabilitation Program.

A map of the potential components under this Alternative is shown in **Figure 5-16**. **Figure 5-17** shows, on average, the amount and type of supply that will be used under this alternative to meet demand in 2050. The projected water supply shortage frequency and depth of unmet demand is summarized in **Section 5.1.12** below.

Figure 5-16: Alternative 8 Facility Locations

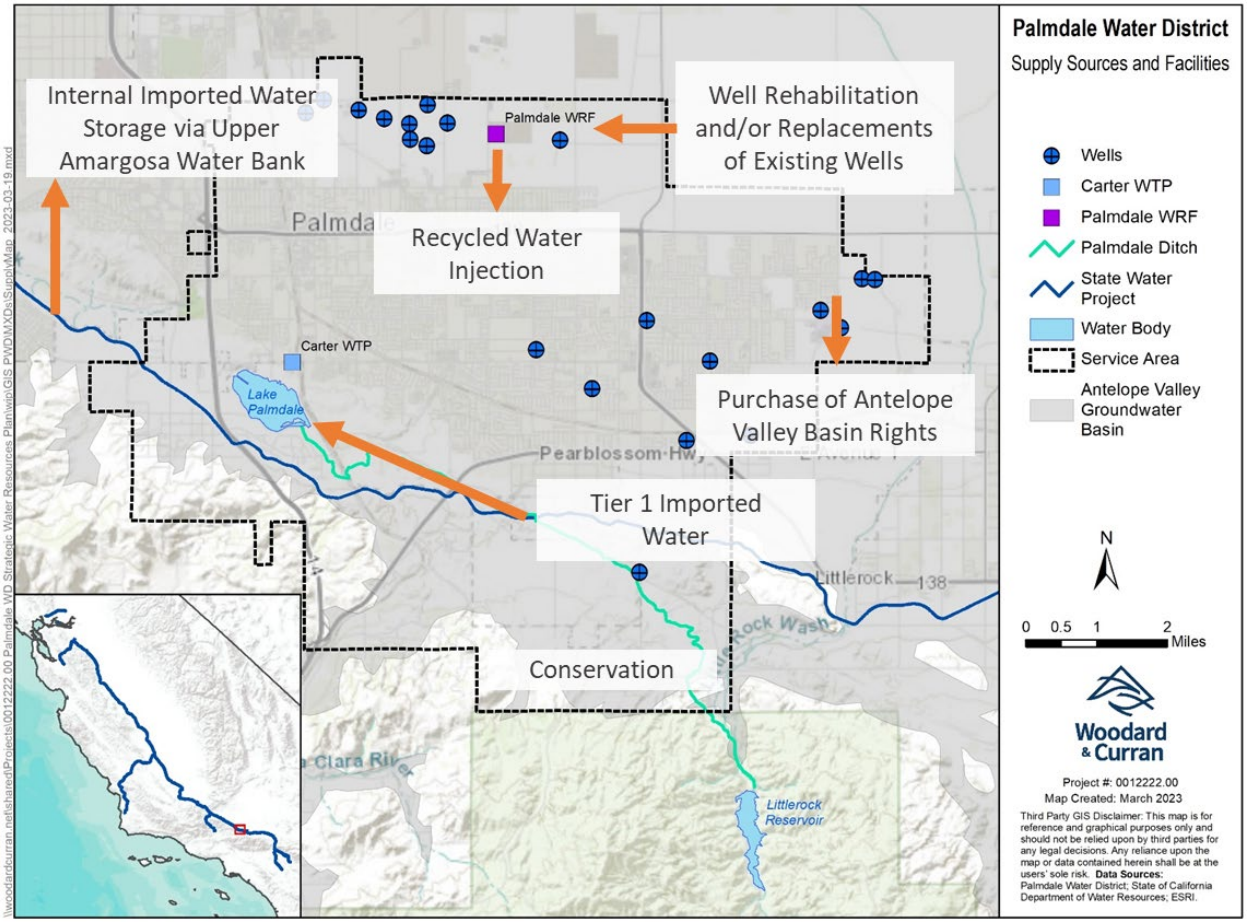
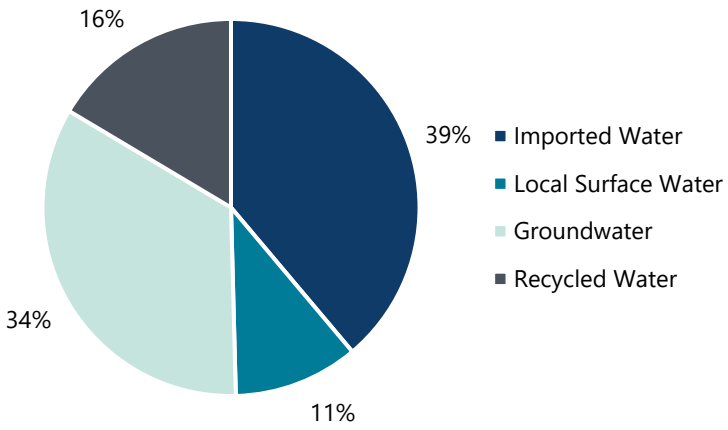


Figure 5-17: Alternative 8 Average Annual Supply Portfolio (2050)



5.1.9 Alternative 9 – Hybrid Imported Water/Recycled Water

Alternative 9 focuses on maximizing imported water supplies and developing additional storage within the Basin to store surplus imported water when it becomes available in wet years, as well as increasing local water supply reliability by augmenting groundwater supplies with recycled water supplies. Under this alternative, PWD would store up to 17,300 AF of Tier 1 and Tier 2 imported water in an internal water bank in the Antelope Valley. Any water stored in an Antelope Valley Water Bank is assumed to primarily be pumped back into the aqueduct, though it's also possible to exchange water stored for groundwater. In addition to storage in an internal water bank, this alternative assumes up to 31,000 AF of storage in the Antelope Valley Basin via imported recharge at the Upper Amargosa Water Project, recycled water injection and groundwater carryover. Seven new wells are assumed to be needed to pump the stored water in the Basin (assuming a capacity of 1.7 mgd per well), in addition to five well replacements identified in the Well Rehabilitation Program.

A map of the potential components under this Alternative is shown in **Figure 5-18**. **Figure 5-19** shows, on average, the amount and type of supply that will be used under this alternative to meet demand in 2050. The projected water supply shortage frequency and depth of unmet demand is summarized in **Section 5.1.12** below.

Figure 5-18: Alternative 9 Facility Locations

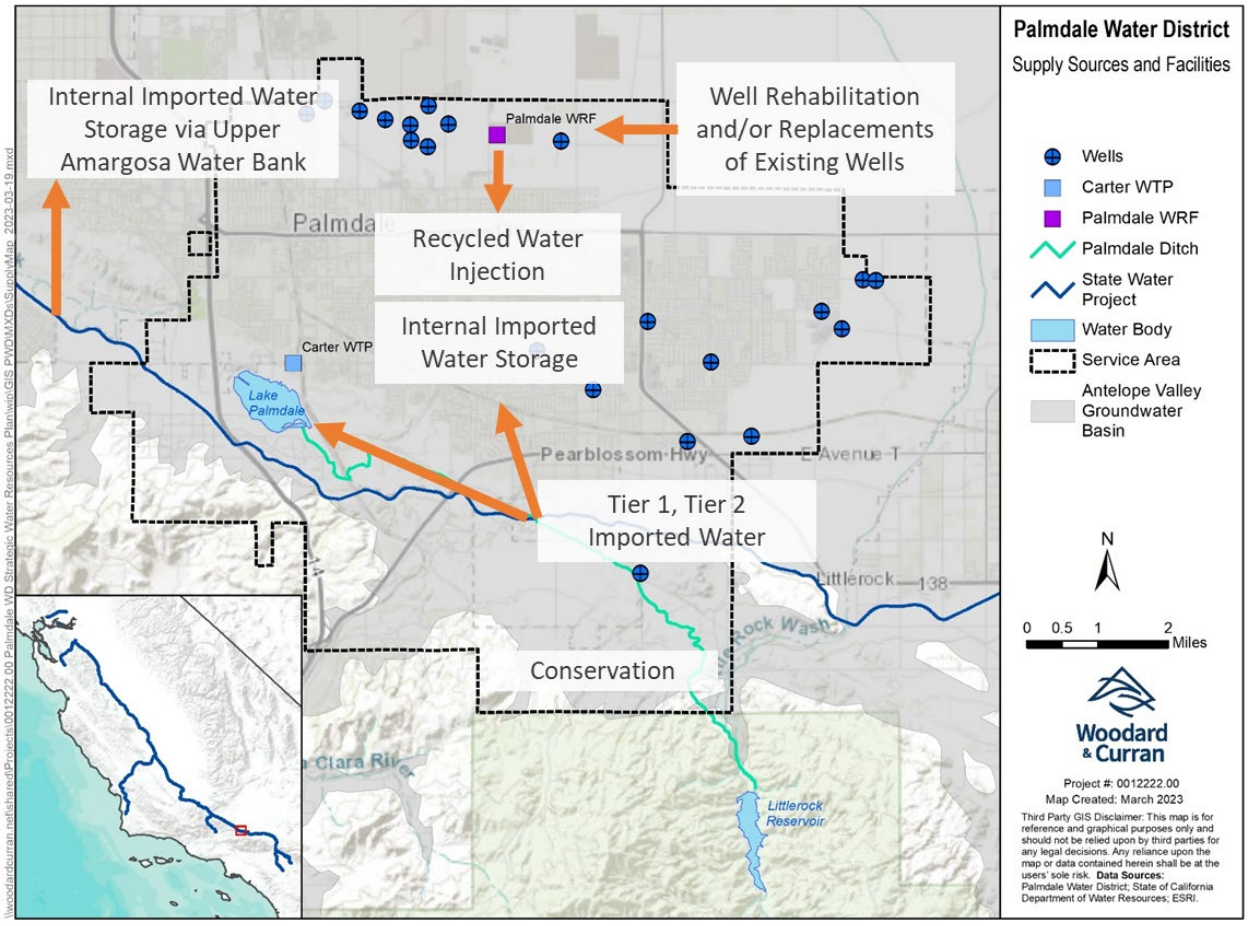
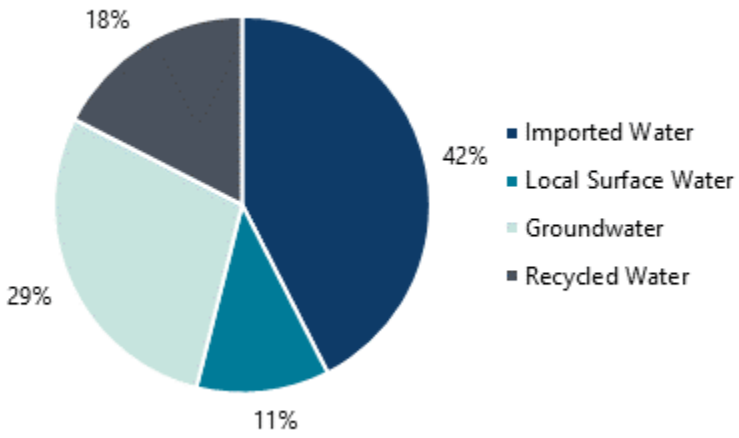


Figure 5-19: Alternative 9 Average Annual Supply Portfolio (2050)



5.1.10 Alternative 10 – Recycled Water Injection and Surface Water Augmentation

Alternative 10 focuses on increasing local water supply reliability by recharging half of the recycled water supplies into the Basin and diverting the other half into Lake Palmdale. On average, approximately 2,500 AF of recycled water supplies would be transported to Lake Palmdale, and 2,500 AF of recycled water supplies would be injected into the Basin annually. PWD would store up to 28,000 AF of Tier 1 imported water, recycled water, and groundwater carryover in the Basin. This includes the 2,500 AFY of recycled water supplies recharged into the Basin, as well as up to 1,600 AFY of imported water recharged via the Upper Amargosa Water Project. It's assumed that 10% of the recharged recycled water (500 AFY) would be left in the basin to improve basin health. Five new wells are assumed to be needed to pump the stored water in the Basin (assuming a capacity of 1.7 mgd per well), in addition to five well replacements identified in the Well Rehabilitation Program.

A map of the potential components under this Alternative is shown in **Figure 5-20**. **Figure 5-21** shows, on average, the amount and type of supply that will be used under this alternative to meet demand in 2050. The projected water supply shortage frequency and depth of unmet demand is summarized in **Section 5.1.12** below.

Figure 5-20: Alternative 10 Facility Locations

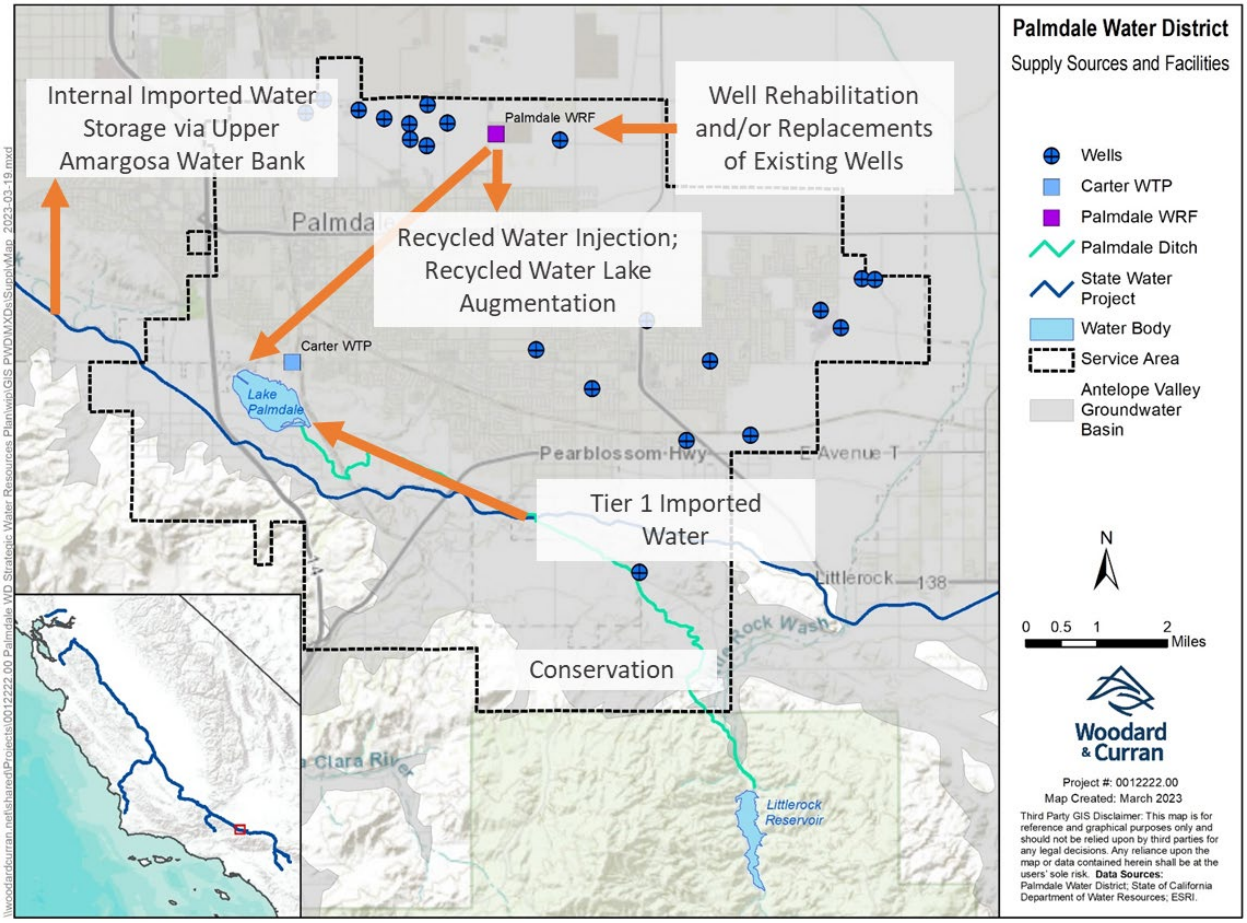
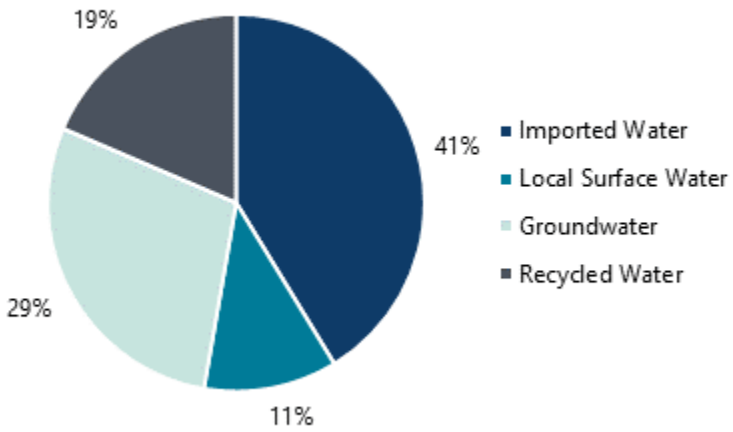


Figure 5-21: Alternative 10 Average Annual Supply Portfolio (2050)



5.1.11 Alternative 11 – Hybrid Groundwater/Recycled Water/Surface Water

Alternative 11 focuses on increasing local water supply reliability by recharging recycled water supplies, maximizing local water supplies, and purchasing groundwater production rights to augment existing groundwater supplies. Under this alternative, PWD would store up to 32,500 AF of Tier 1 imported water, recycled water, and groundwater carryover in the Basin. This includes 5,000 AFY of recycled water supplies recharged into the Basin as well as up to 1,600 AFY of imported water recharged via the Upper Amargosa Water Project. PWD would purchase 1,000 AFY of groundwater production rights from other pumpers in the Basin. Seven new wells are assumed to be needed to pump the stored water in the Basin (assuming a capacity of 1.7 mgd per well), in addition to five well replacements identified in the Well Rehabilitation Program. In addition, PWD would implement Palmdale Ditch enhancements to reduce conveyance losses and increase local water supply, resulting in an average increase of 1,500 AFY of local surface water.

A map of the potential components under this Alternative is shown in **Figure 5-22**. **Figure 5-23** shows, on average, the amount and type of supply that will be used under this alternative to meet demand in 2050. The projected water supply shortage frequency and depth of unmet demand is summarized in **Section 5.1.12** below.

Figure 5-22: Alternative 11 Facility Locations

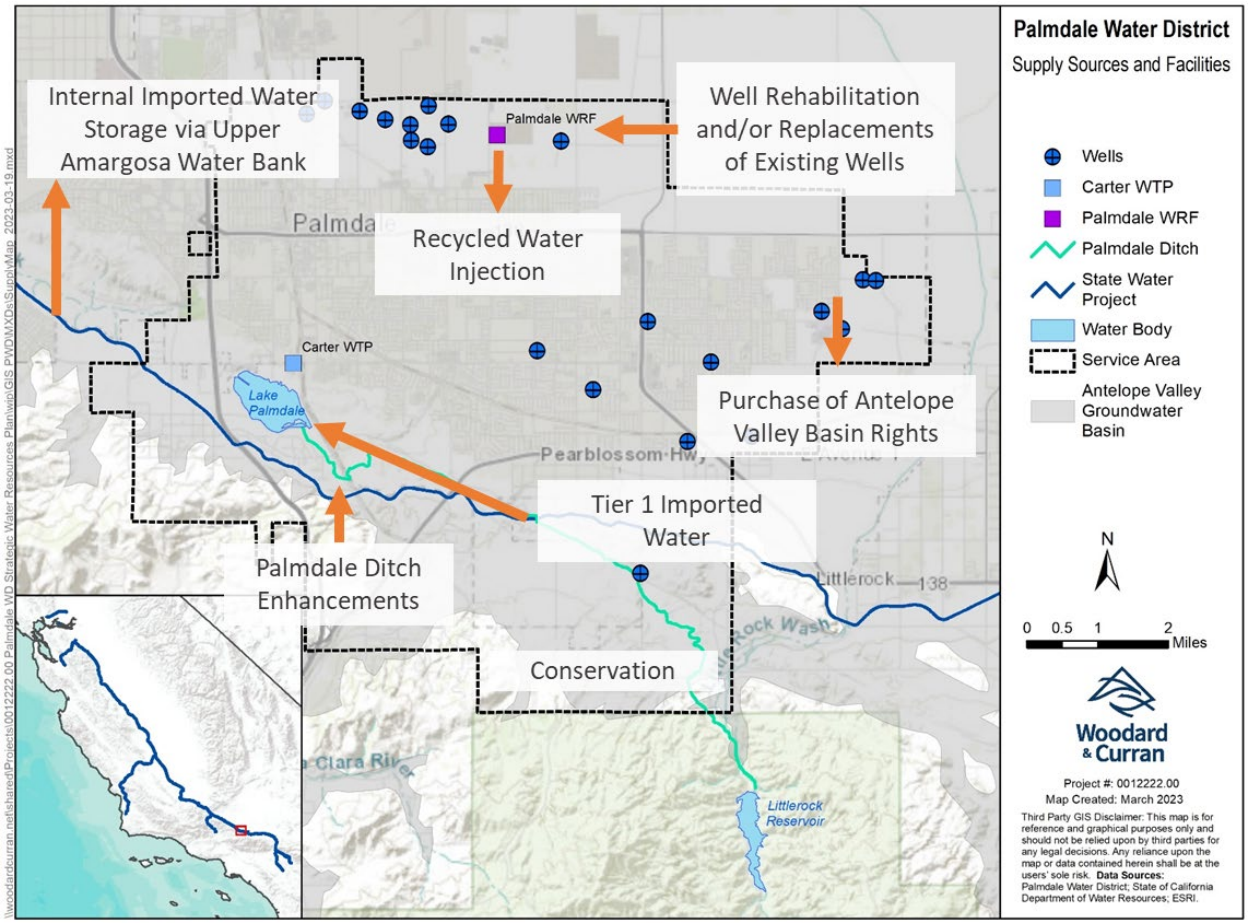
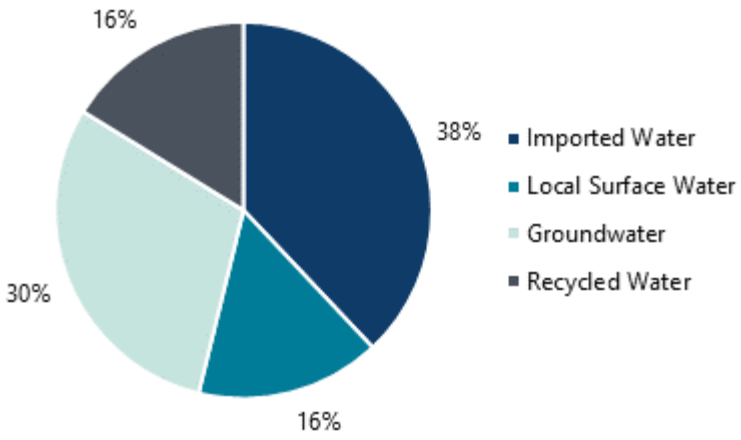


Figure 5-23: Alternative 11 Average Annual Supply Portfolio (2050)



5.1.12 Summary of Water Supply Shortages and Unmet Demands

A summary of water supply shortages and unmet demands in 2050 under each alternative is shown in **Table 5-3** as modeled using the WEAP model. As shown below, Alternative 1 (Imported Water (Internal Banking)) and Alternative 2 (Imported Water (External Banking)) experience the highest unmet demand, followed by Alternative 4 (Recycled Water (Surface Water Augmentation)) and Alternative 6 (Hybrid Imported/Recycled Water (Internal Banking and Surface Water Augmentation)). Alternative 8 (Hybrid Groundwater/Recycled Water) and Alternative 11 (Hybrid Groundwater/Recycled Water/Surface Water) experienced the lowest unmet demand in terms of both frequency and depth. In general, alternatives that maximize local storage and recycled water use performed the best in terms of reliability.

Table 5-3: Summary of Water Supply Shortages and Unmet Demands (2050 Demand)

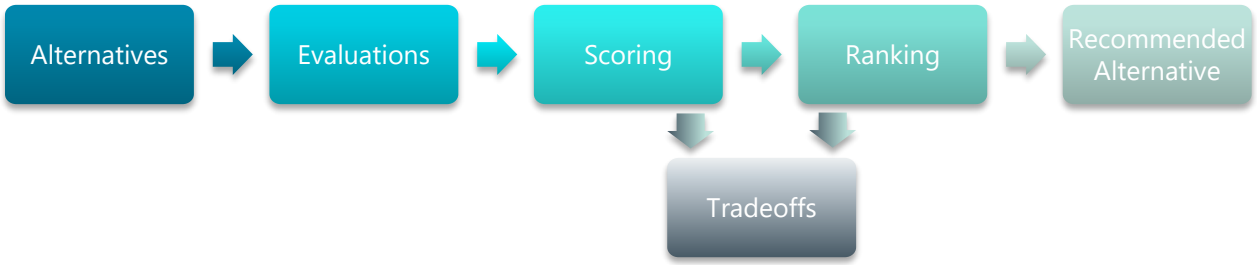
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7	Alt 8	Alt 9	Alt 10	Alt 11
Frequency of unmet demand during droughts	94%	94%	27%	85%	26%	74%	27%	6%	20%	59%	3%
Average unmet demand during droughts (AFY)	2,000	2,400	650	2,300	620	2,000	510	9	450	1,400	5
Frequency of unmet demand (above 20%)	4%	6%	0%	2%	0%	2%	0%	0%	0%	0%	0%
Average depth of unmet demand (over 20%)	5,600	5,800	0[1]	5,400	01	5,400	0[1]	0[1]	0[1]	0[1]	0[1]
Maximum unmet demand (AFY)	6,000	6,100	2,300	5,500	2,400	5,500	2,200	95	2,300	3,700	80

1. Shortages experienced under these alternatives do not exceed 20% of demand in any year.

5.2 Alternatives Evaluation

A multi-criteria evaluation method was used to compare the alternatives' ability to meet the objectives of this SWRP. Essential to this multi-criteria evaluation method is defining criteria and metrics to assess each alternative. The multi-criteria evaluation method uses alternative analysis results and accounts for the relative importance of the criteria to compute an aggregated final performance score. Alternatives can then be compared to make planning decisions. **Figure 5-24** provides an overall evaluation process showing each of the steps, from forming alternatives through evaluation and selection of the preferred portfolio, as described in the following sections.

Figure 5-24: Alternative Evaluation Process



5.2.1 Evaluation Criteria

In applying a multi-criteria evaluation method, the number of criteria need to be manageable, and criteria need to adhere to some basic principles. Criteria need to exhibit the following traits:

- **Understandable –** Decision-makers need to know what is being measured.
- **Quantifiable by quantitative or qualitative methods –** At least one metric needs to be established for each criterion. If no quantitative method is feasible to score a portfolio, a qualitative scale based on objective information needs to be established.
- **Non-redundant –** Each criterion and metric need to measure a distinct element of the alternative.

Table 5-4 shows the evaluation criteria and associated metrics that were developed based on the various objectives established for this SWRP and defined in Chapter 1. The evaluation criteria are both quantitative and qualitative. For the purposes of this SWRP, all criteria are considered equally important for most decision-makers and are therefore equally weighed to evaluate the alternatives.

Table 5-4: Evaluation Criteria

Criteria	Metric	Points			
Quantitative		*1 point*	*0.75 points*	*0.50 points*	*0.25 points*
Drought Reliability – Frequency	Likelihood of experiencing of shortage of 20% or more in 2050	No shortage	1% to 5%	5% to 10%	Over 10%
Drought Reliability – Depth	Average depth of shortage in 2050	Less than 3%	3% to 8%	9% to 15%	Over 15%
Emergency Imported Water Outage Reliability	Shortage depth during a 12-month SWP water outage (2050 demand)	Under 10% shortage	10% to 20% shortage	20% to 30% shortage	Shortage of 30% or above
Cost Efficiency	Unit cost, including capital, O&M, and water purchase cost, for new supplies and facilities	Under $3,200/AF	$3,200/AF to $3,700/AF	$3,700/AF to $4,200/AF	Over $4,200/AF
Water Quality	Loading of TDS applied to the Basin	Under 2,020 tons TDS (less than 15% increase over baseline)	2,020 to 2,100 tons TDS (15% to 20% increase over baseline)	2,100 to 2,280 tons TDS (20% to 30% increase over baseline)	Over 2,280 tons TDS (more than 30% increase over baseline)
Qualitative		*1 point*	*0.67 points*		*0.33 points*
Institutional Independence	Institutional independence (i.e., PWD control)	PWD control of assets	Regional control of assets		External control of assets
Sustainability	Stewardship of facilities, groundwater basins and/or reservoirs	Improves stewardship of facilities and groundwater basins and reservoirs	Improves stewardship of facilities or groundwater basins or reservoirs		Does not improve stewardship
Funding Potential	Eligibility for funding programs	Current/known funding programs	Assumed future funding programs		Limited funding likely

Criteria	Metric	Points		
Implementability	Ease of completing environmental documentation and regulatory/permitting compliance Phasing potential and adaptability	Environmental and permitting expected to be less complicated and high phasing potential	Environmental and permitting expected to be somewhat complicated or high phasing potential	Environmental and permitting expected to be more complicated

5.2.2 Alternative Evaluation

The evaluation results are most helpful to decision-makers when they highlight the differences between alternatives in their ability to meet SWRP objectives. This section presents the evaluation results based on each alternative's overall ability to achieve objectives established during the planning period.

5.2.2.1 Drought Reliability – Frequency

Drought Reliability – Frequency quantitatively evaluated for each of the supply alternatives on its anticipated reliability in drought conditions. This evaluation considered the potential likelihood of shortages in 2050. This criterion was calculated as the percentage of years experiencing a shortage that exceeds 20% of demand for each supply alternative.

In general, groundwater and recycled water supplies tend to be less vulnerable to drought conditions than imported and local surface water supplies. As a result, alternatives that incorporate recycled water injection into the Basin reduced the potential likelihood of shortages during drought conditions. These alternatives tended to score higher than alternatives that did not incorporate recycled water injection.

Table 5-5: Drought Reliability – Frequency Evaluation Results

Alternative	Drought Reliability – Frequency (percent of years experiencing shortage exceeding 20% of demand)	Points
1. Imported Water (Internal Banking)	4%	0.75
2. Imported Water (External Banking)	5%	0.75
3. Recycled Water (Groundwater Injection)	0%	1.00
4. Recycled Water (Surface Water Augmentation)	2%	0.75
5. Hybrid Imported Water/ Recycled Water (External Banking, Recycled Water Injection)	0%	1.00
6. Hybrid Imported Water/Recycled Water (Internal Banking, Surface Water Augmentation)	2%	0.75
7. Hybrid Surface Water/Recycled Water (Surface Water Enhancement, Recycled Water Injection)	0%	1.00
8. Hybrid Groundwater/ Recycled Water (Groundwater Rights, Recycled Water Injection)	0%	1.00
9. Hybrid Imported Water/Recycled Water (Internal Banking, Recycled Water Injection)	0%	1.00
10. Hybrid Recycled Water (Recycled Water Injection, Surface Water Augmentation)	0%	1.00
11. Hybrid Groundwater/ Recycled Water/ Surface Water (Groundwater rights, Recycled Water Injection, Palmdale Ditch Enhancement)	0%	1.00

5.2.2.2 Drought Reliability – Depth

Drought Reliability – Depth quantitatively evaluated for each of the supply alternatives on its anticipated reliability in drought conditions. This evaluation considered the average depth of shortage during droughts in 2050. This criterion was calculated as the AFY of shortage for each supply alternative during droughts.

As previously mentioned, groundwater and recycled water supplies are generally less susceptible to drought impacts compared to local surface water supplies and imported water supplies. Furthermore, diverse water supply portfolios tend to also be more resilient to drought conditions. Therefore, hybrid alternatives that incorporate recycled water injection into the Basin have the potential to decrease the average shortage depth during drought conditions. These alternatives have generally scored higher than those that do not include diverse portfolios with recycled water injection.

Table 5-6: Drought Reliability – Depth Evaluation Results

Alternative	Drought Reliability – Depth (average depth of demand during drought years as the percent of demand)	Points
1. Imported Water (Internal Banking)	8% of demand	0.75
2. Imported Water (External Banking)	9% of demand	0.50
3. Recycled Water (Groundwater Injection)	3% of demand	0.75
4. Recycled Water (Surface Water Augmentation)	9% of demand	0.50
5. Hybrid Imported Water/ Recycled Water (External Banking, Recycled Water Injection)	2% of demand	1.00
6. Hybrid Imported Water/Recycled Water (Internal Banking, Surface Water Augmentation)	8% of demand	0.75
7. Hybrid Surface Water/Recycled Water (Surface Water Enhancement, Recycled Water Injection)	2% of demand	1.00
8. Hybrid Groundwater/ Recycled Water (Groundwater Rights, Recycled Water Injection)	no shortage	1.00
9. Hybrid Imported Water/Recycled Water (Internal Banking, Recycled Water Injection)	2% of demand	1.00
10. Hybrid Recycled Water (Recycled Water Injection, Surface Water Augmentation)	6% of demand	0.75
11. Hybrid Groundwater/ Recycled Water/ Surface Water (Groundwater rights, Recycled Water Injection, Palmdale Ditch Enhancement)	no shortage	1.00

5.2.2.3 Emergency Imported Water Outage Reliability

Emergency Imported Water Outage Reliability quantitatively evaluated each of the supply alternatives on its ability to meet water demands in the event a catastrophic event disrupts imported water availability. This

evaluation considered the water supply shortage depth during a 12-month SWP water outage. This criterion was calculated as a percentage of shortage for each supply alternative based on the 2050 water demand.

Alternatives that are heavily reliant on imported water supplies are more vulnerable to shortages in the event a catastrophic event disrupts the SWP conveyance infrastructure, resulting in an imported water outage. Consequently, alternatives that are less dependent on imported water supplies scored higher because they are generally more resilient to emergency imported water outages.

Table 5-7: Emergency Imported Water Outage Reliability Evaluation Results

Alternative	Emergency Imported Water Outage Reliability (shortage depth during a 12-month imported water outage as percent of demand)	Points
1. Imported Water (Internal Banking)	23% of demand	0.50
2. Imported Water (External Banking)	24% of demand	0.50
3. Recycled Water (Groundwater Injection)	9% of demand	1.00
4. Recycled Water (Surface Water Augmentation)	13% of demand	0.75
5. Hybrid Imported Water/ Recycled Water (External Banking, Recycled Water Injection)	9% of demand	1.00
6. Hybrid Imported Water/Recycled Water (Internal Banking, Surface Water Augmentation)	15% of demand	0.75
7. Hybrid Surface Water/Recycled Water (Surface Water Enhancement, Recycled Water Injection)	8% of demand	1.00
8. Hybrid Groundwater/ Recycled Water (Groundwater Rights, Recycled Water Injection)	0% of demand	1.00
9. Hybrid Imported Water/Recycled Water (Internal Banking, Recycled Water Injection)	9% of demand	1.00
10. Hybrid Recycled Water (Recycled Water Injection, Surface Water Augmentation)	12% of demand	0.75
11. Hybrid Groundwater/ Recycled Water/ Surface Water (Groundwater rights, Recycled Water Injection, Palmdale Ditch Enhancement)	0% of demand	1.00

5.2.2.4 Cost Efficiency

Cost Efficiency quantitatively evaluated each of the supply alternatives on cost efficiency measured as the total cost needed to produce an average (across the combined supply sources) unit of supply in AFY. The total cost to implement each alternative was estimated by annualizing any individual costs to purchase water, capital costs to build necessary facilities, as well as operational and maintenance (O&M) costs associated with any existing and new facilities required for the alternative to function. The combined unit costs were spread across the average annual volume of supply to calculate the average present value unit cost ($/AF) for each alternative.

Table 5-8: Cost Efficiency Evaluation Results

Alternative	Unit Cost ($/AF)[1]	Points
1. Imported Water (Internal Banking)	$3,400	0.75
2. Imported Water (External Banking)	$3,400	0.75
3. Recycled Water (Groundwater Injection)	$3,700	0.75
4. Recycled Water (Surface Water Augmentation)	$3,300	0.75
5. Hybrid Imported Water/ Recycled Water (External Banking, Recycled Water Injection)	$4,600	0.25
6. Hybrid Imported Water/Recycled Water (Internal Banking, Surface Water Augmentation)	$4,200	0.50
7. Hybrid Surface Water/Recycled Water (Surface Water Enhancement, Recycled Water Injection)	$3,300	0.75
8. Hybrid Groundwater/ Recycled Water (Groundwater Rights, Recycled Water Injection)	$3,100	1.00
9. Hybrid Imported Water/Recycled Water (Internal Banking, Recycled Water Injection)	$3,600	0.75
10. Hybrid Recycled Water (Recycled Water Injection, Surface Water Augmentation)	$3,600	0.75
11. Hybrid Groundwater/ Recycled Water/ Surface Water (Groundwater rights, Recycled Water Injection, Palmdale Ditch Enhancement)	$2,900	1.00

1. Unit costs include the capital and O&M costs for all projects described in the alternatives description above. For example, Alternative 3: Recycled Water (Groundwater Injection) includes the costs for AV Pure Water, conveyance of imported water to the Amargosa Water Bank recharge facilities, and new wells required to produce any stored water.

5.2.2.5 Water Quality

Water Quality quantitatively evaluated each of the supply alternatives on the overall water quality associated with each alternative's supply mix. This was estimated by calculating the total amount of salts (total dissolved solids [TDS]) delivered into the service area by each alternative's supply mix. The total anticipated TDS loading to the groundwater basin was calculated in tons per year for each supply alternative and compared to the baseline scenario.

Advanced treated water and imported water supplies both introduce additional TDS into the Basin. Tertiary effluent from the PWRP has an average TDS concentration of 471 milligrams per liter (mg/L). Advanced treatment is assumed to reduce TDS concentrations by more than 95 percent, resulting in an estimated concentration of 24 mg/L (PWD, 2022). TDS concentrations for imported water from the SWP are significantly higher, estimated at approximately 300 mg/L (PWD, 2021a). As a result, alternatives that focus on maximizing local surface water and groundwater supplies scored the highest because they do not introduce a new source of TDS into the Basin. Alternatives that focus on recycled water scored higher than alternatives that primarily rely on imported water supply, particularly alternatives with internal imported water storage, because they introduce less TDS into the Basin.

Table 5-9: Water Quality Evaluation Results

Alternative	Water Quality (TDS loading in tons/yr)	Points
1. Imported Water (Internal Banking)	2,740 tons/yr	0.25
2. Imported Water (External Banking)	2,570 tons/yr	0.25
3. Recycled Water (Groundwater Injection)	2,000 tons/yr	1.00
4. Recycled Water (Surface Water Augmentation)	2,110 tons/yr	0.50
5. Hybrid Imported Water/ Recycled Water (External Banking, Recycled Water Injection)	2,130 tons/yr	0.50
6. Hybrid Imported Water/Recycled Water (Internal Banking, Surface Water Augmentation)	2,250 tons/yr	0.50
7. Hybrid Surface Water/Recycled Water (Surface Water Enhancement, Recycled Water Injection)	2,000 tons/yr	1.00
8. Hybrid Groundwater/ Recycled Water (Groundwater Rights, Recycled Water Injection)	2,000 tons/yr	1.00
9. Hybrid Imported Water/Recycled Water (Internal Banking, Recycled Water Injection)	2,450 tons/yr	0.25
10. Hybrid Recycled Water (Recycled Water Injection, Surface Water Augmentation)	2,200 tons/yr	0.50
11. Hybrid Groundwater/ Recycled Water/ Surface Water (Groundwater rights, Recycled Water Injection, Palmdale Ditch Enhancement)	2,000 tons/yr	1.00

5.2.2.6 Institutional Independence

Institutional Independence qualitatively evaluated each of the supply alternatives on the level of dependence on non-PWD entities. Considerations included control over the facilities required for implementation and supplies generated. Alternatives with components such as external banking that involve outside agencies are dependent upon those agencies for success.

In general, PWD has greater control over local water supplies such as recycled water, groundwater, and local surface water, and less control over external water supplies such as imported water. As a result, alternatives that maximize local water supplies directly managed by PWD scored the highest. Alternatives that rely on imported water supplies and external imported water storage tended to score the lowest.

Table 5-10: Institutional Independence Evaluation Results

Alternative	Institutional Independence (based on reliance on other agencies)	Points
1. Imported Water (Internal Banking)	Banking agreement with AVEK (within region) Imported water purchase agreements	0.67
2. Imported Water (External Banking)	Banking agreement outside the region Imported water purchase agreements	0.33
3. Recycled Water (Groundwater Injection)	No reliance on new partnerships or agreements	1.00
4. Recycled Water (Surface Water Augmentation)	No reliance on new partnerships or agreements	1.00
5. Hybrid Imported Water/ Recycled Water (External Banking, Recycled Water Injection)	Banking agreement outside the region	0.33
6. Hybrid Imported Water/Recycled Water (Internal Banking, Surface Water Augmentation)	Banking agreement with AVEK (within the region)	0.67
7. Hybrid Surface Water/Recycled Water (Surface Water Enhancement, Recycled Water Injection)	No reliance on new partnerships or agreements	1.00
8. Hybrid Groundwater/ Recycled Water (Groundwater Rights, Recycled Water Injection)	No reliance on new partnerships or agreements	1.00
9. Hybrid Imported Water/Recycled Water (Internal Banking, Recycled Water Injection)	Banking agreement with AVEK (within region)	0.67
10. Hybrid Recycled Water (Recycled Water Injection, Surface Water Augmentation)	No reliance on new partnerships or agreements	1.00
11. Hybrid Groundwater/ Recycled Water/ Surface Water (Groundwater rights, Recycled Water Injection, Palmdale Ditch Enhancement)	No reliance on new partnerships or agreements	1.00

5.2.2.7 Sustainability

Sustainability qualitatively evaluated each of the supply alternatives on the stewardship of facilities, groundwater basins, and reservoirs. Considerations included the ability to replenish local resources or improve the condition of existing resources.

Alternatives that improve local resource conditions by enhancing PWD's infrastructure, such as the Palmdale Ditch and Littlerock Reservoir, tended to score higher under this criterion. Alternatives that do not have an impact on local facilities, basins, or reservoirs, such as alternatives that primarily focus on increasing imported water supplies and rely on external banking, tended to score lower.

Table 5-11: Sustainability Evaluation Results

Alternative	Sustainability (based on stewardship of facilities, groundwater basins and/or reservoirs)	Points
1. Imported Water (Internal Banking)	Improves stewardship of groundwater basin	0.67
2. Imported Water (External Banking)	Doesn't improve stewardship of facilities, groundwater basins and/or reservoirs	0.33
3. Recycled Water (Groundwater Injection)	Improves stewardship of groundwater basin	0.67
4. Recycled Water (Surface Water Augmentation)	Improves stewardship of facilities (Carter WTP)	0.67
5. Hybrid Imported Water/ Recycled Water (External Banking, Recycled Water Injection)	Improves stewardship of groundwater basin	0.67
6. Hybrid Imported Water/Recycled Water (Internal Banking, Surface Water Augmentation)	Improves stewardship of facilities (Carter WTP)	0.67
7. Hybrid Surface Water/Recycled Water (Surface Water Enhancement, Recycled Water Injection)	Improves stewardship of reservoirs and groundwater basin and Carter WTP	1.00
8. Hybrid Groundwater/ Recycled Water (Groundwater Rights, Recycled Water Injection)	Improves stewardship of Carter WTP and groundwater basin	0.67
9. Hybrid Imported Water/Recycled Water (Internal Banking, Recycled Water Injection)	Improves stewardship of groundwater basin	0.67
10. Hybrid Recycled Water (Recycled Water Injection, Surface Water Augmentation)	Improves stewardship of Carter WTP and groundwater basin	0.67
11. Hybrid Groundwater/ Recycled Water/ Surface Water (Groundwater rights, Recycled Water Injection, Palmdale Ditch Enhancement)	Improves stewardship of Carter WTP, Palmdale Ditch and groundwater basin	1.00

5.2.2.8 Funding Potential

Funding Potential qualitatively evaluated each of the supply alternatives on the eligibility and competitiveness for common water supply funding sources. The evaluation of fundability considered State and federal funding programs such as Drinking Water State Revolving Fund (SRF), Clean Water SRF, Sustainable Groundwater Management, Title XVI Water Reclamation and Reuse, WaterSmart, and other known sources of funding.

Over the past few years, funding programs have focused on maximizing local water supplies to reduce reliance on imported water supplies. As a result, integrated alternatives that include options to maximize groundwater, recycled water, and/or local surface water supplies tend to be more competitive for funding, and therefore score higher, than alternatives that primarily focus on increasing imported water supplies.

Table 5-12: Funding Potential Evaluation Results

Alternative	Funding Potential (based on known and potential funding opportunities)	Points
1. Imported Water (Internal Banking)	Potential future funding for local water bank development	0.67
2. Imported Water (External Banking)	Low potential for future funding	0.33
3. Recycled Water (Groundwater Injection)	Current/known funding programs (recycled water)	1.00
4. Recycled Water (Surface Water Augmentation)	Current/known funding programs (recycled water)	1.00
5. Hybrid Imported Water/ Recycled Water (External Banking, Recycled Water Injection)	Current/known funding programs (recycled water)	1.00
6. Hybrid Imported Water/Recycled Water (Internal Banking, Surface Water Augmentation)	Current/known funding programs (recycled water)	1.00
7. Hybrid Surface Water/Recycled Water (Surface Water Enhancement, Recycled Water Injection)	Current/known funding programs (recycled water)	1.00
8. Hybrid Groundwater/ Recycled Water (Groundwater Rights, Recycled Water Injection)	Current/known funding programs (recycled water)	1.00
9. Hybrid Imported Water/Recycled Water (Internal Banking, Recycled Water Injection)	Current/known funding programs (recycled water)	1.00
10. Hybrid Recycled Water (Recycled Water Injection, Surface Water Augmentation)	Current/known funding programs (recycled water)	1.00
11. Hybrid Groundwater/ Recycled Water/ Surface Water (Groundwater rights, Recycled Water Injection, Palmdale Ditch Enhancement)	Current/known funding programs (recycled water)	1.00

5.2.2.9 Implementability

Implementability qualitatively evaluated each of the supply alternatives on the ease of implementation. Considerations included ease of completing environmental documentation and regulatory and permitting compliance requirements associated with accessing, producing, and conveying the supply mix within each alternative. This criterion also evaluated the supply alternatives' phasing potential and adaptability to uncertainty, such as changes in demand trends, hydrology and supply availability, facility needs and costs, regulations, and decision-maker priorities.

Table 5-13: Implementability Evaluation Results

Alternative	Implementability (based on permitting requirements and phasing potential)	Points
1. Imported Water (Internal Banking)	Uncomplicated environmental permitting, but low phasing potential	0.67
2. Imported Water (External Banking)	Uncomplicated environmental permitting, but low phasing potential	0.67
3. Recycled Water (Groundwater Injection)	Less complicated permitting and environmental docs required for RW injection, low phasing potential	0.67
4. Recycled Water (Surface Water Augmentation)	More complicated permitting and environmental docs req'd for lake augmentation with RW, low phasing potential	0.33
5. Hybrid Imported Water/ Recycled Water (External Banking, Recycled Water Injection)	Less complicated permitting and environmental docs req'd for RW injection, and potential for phasing	1.00
6. Hybrid Imported Water/Recycled Water (Internal Banking, Surface Water Augmentation)	More complicated permitting and environmental docs req'd for lake augmentation with RW, but with potential for phasing	0.67
7. Hybrid Surface Water/Recycled Water (Surface Water Enhancement, Recycled Water Injection)	More complicated permitting & environmental docs req'd for removing sediment from Littlerock Reservoir due to existing habitat, but with potential for phasing	0.67
8. Hybrid Groundwater/ Recycled Water (Groundwater Rights, Recycled Water Injection)	Less complicated permitting and environmental docs req'd for RW injection, and potential for phasing	1.00
9. Hybrid Imported Water/Recycled Water (Internal Banking, Recycled Water Injection)	Less complicated permitting and environmental docs req'd for RW injection, and potential for phasing	1.00
10. Hybrid Recycled Water (Recycled Water Injection, Surface Water Augmentation)	More complicated permitting and environmental docs req'd for lake augmentation with	0.67

Alternative	Implementability (based on permitting requirements and phasing potential)	Points
	RW, but with potential for phasing	
11. Hybrid Groundwater/ Recycled Water/ Surface Water (Groundwater rights, Recycled Water Injection, Palmdale Ditch Enhancement)	Less complicated permitting and environmental docs req'd for RW injection, and potential for phasing	1.00

5.2.3 Alternative Summary Scores

Table 5-14 shows the summary of the scores for each alternative under each of the nine evaluation criteria. In each case the points contained in the table above are multiplied by the criteria weight for each criterion. With all criteria weighted equally, the differences between alternatives depend on which one is more balanced and higher ranked in more areas. **Section 5.3** below incorporates the evaluation criteria results and identifies a preferred alternative.

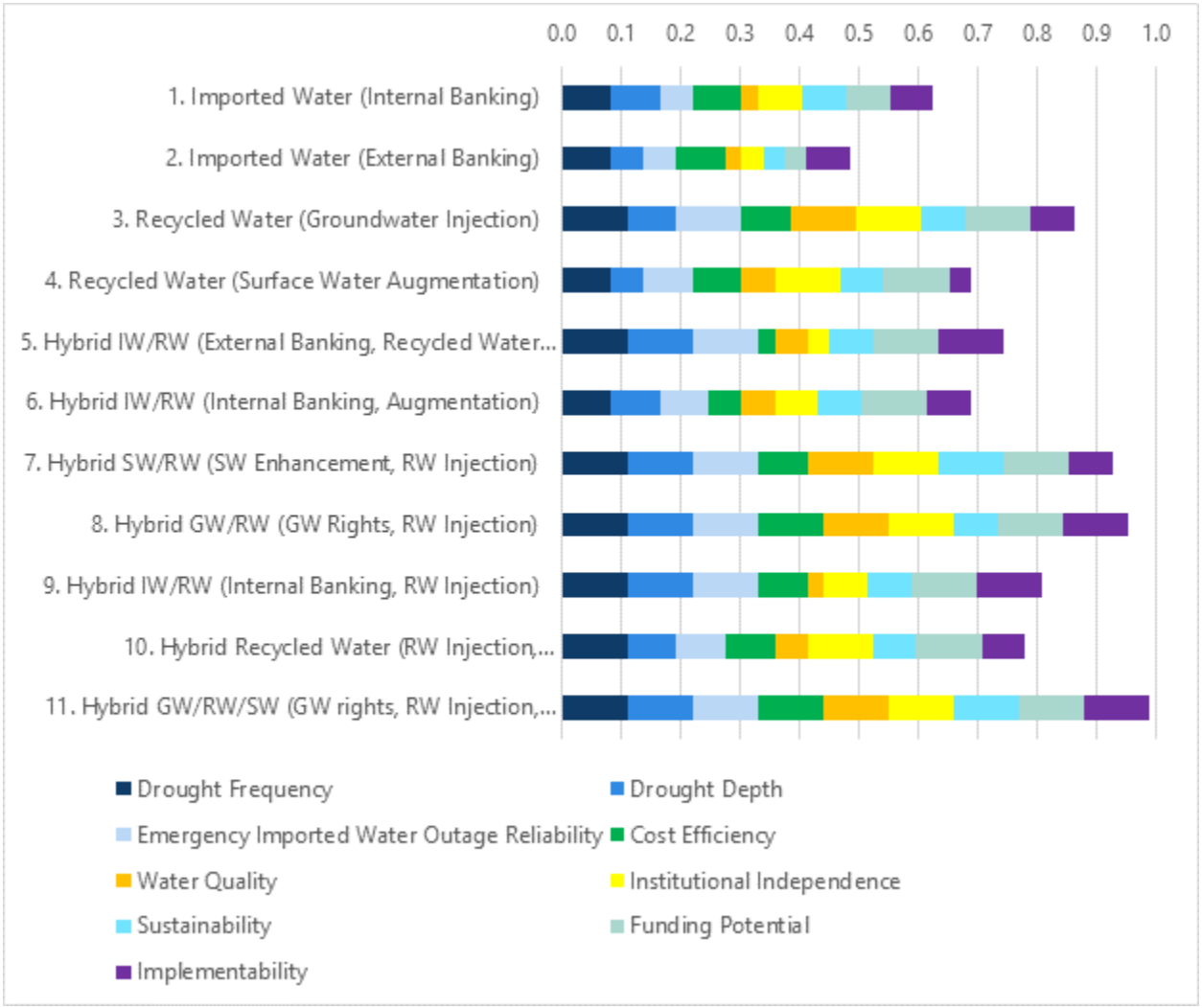
Table 5-14: Alternative Evaluation Weighted Scores

	Criteria Weight	1. Imported Water *Internal banking*	2. Imported Water *External banking*	3. Recycled Water *Groundwater injection*	4. Recycled Water *Surface water augmentation*	5. Hybrid Imported Water/ Recycled Water *Imported water external banking, recycled water injection*	6. Hybrid Imported Water/Recycled Water *Imported water internal banking, recycled water surface water augmentation*	7. Hybrid Surface Water/Recycled Water *Surface water enhancement, recycled water injection*	8. Hybrid Groundwater/ Recycled Water *Groundwater rights, recycled water injection*	9. Hybrid Imported Water/Recycled Water *Imported water internal banking, recycled water injection*	10. Hybrid Recycled Water *Recycled water injection, recycled water surface water augmentation*	11. Hybrid Groundwater/ Recycled Water/Surface Water *Groundwater rights, recycled water injection, Palmdale Ditch enhancement*
Drought Reliability – Frequency	11.1%	0.08	0.08	0.11	0.08	0.11	0.08	0.11	0.11	0.11	0.11	0.11
Drought Reliability – Depth	11.1%	0.08	0.06	0.08	0.06	0.11	0.08	0.11	0.11	0.11	0.08	0.11
Emergency Imported Water Outage Reliability	11.1%	0.06	0.06	0.11	0.08	0.11	0.08	0.11	0.11	0.11	0.08	0.11
Cost Efficiency	11.1%	0.08	0.08	0.08	0.08	0.03	0.06	0.08	0.11	0.08	0.08	0.11
Water Quality	11.1%	0.03	0.03	0.11	0.06	0.06	0.06	0.11	0.11	0.03	0.06	0.11
Institutional Independence	11.1%	0.07	0.04	0.11	0.11	0.04	0.07	0.11	0.11	0.07	0.11	0.11
Sustainability	11.1%	0.07	0.04	0.07	0.07	0.07	0.07	0.11	0.07	0.07	0.07	0.11
Funding potential	11.1%	0.07	0.04	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Implementability	11.1%	0.07	0.07	0.07	0.04	0.11	0.07	0.07	0.11	0.11	0.07	0.11
Total Weighted Score		**0.62**	**0.49**	**0.86**	**0.69**	**0.74**	**0.69**	**0.93**	**0.95**	**0.81**	**0.78**	**0.99**

5.3 Alternative Ranking Results and Selection of Preferred Alternative

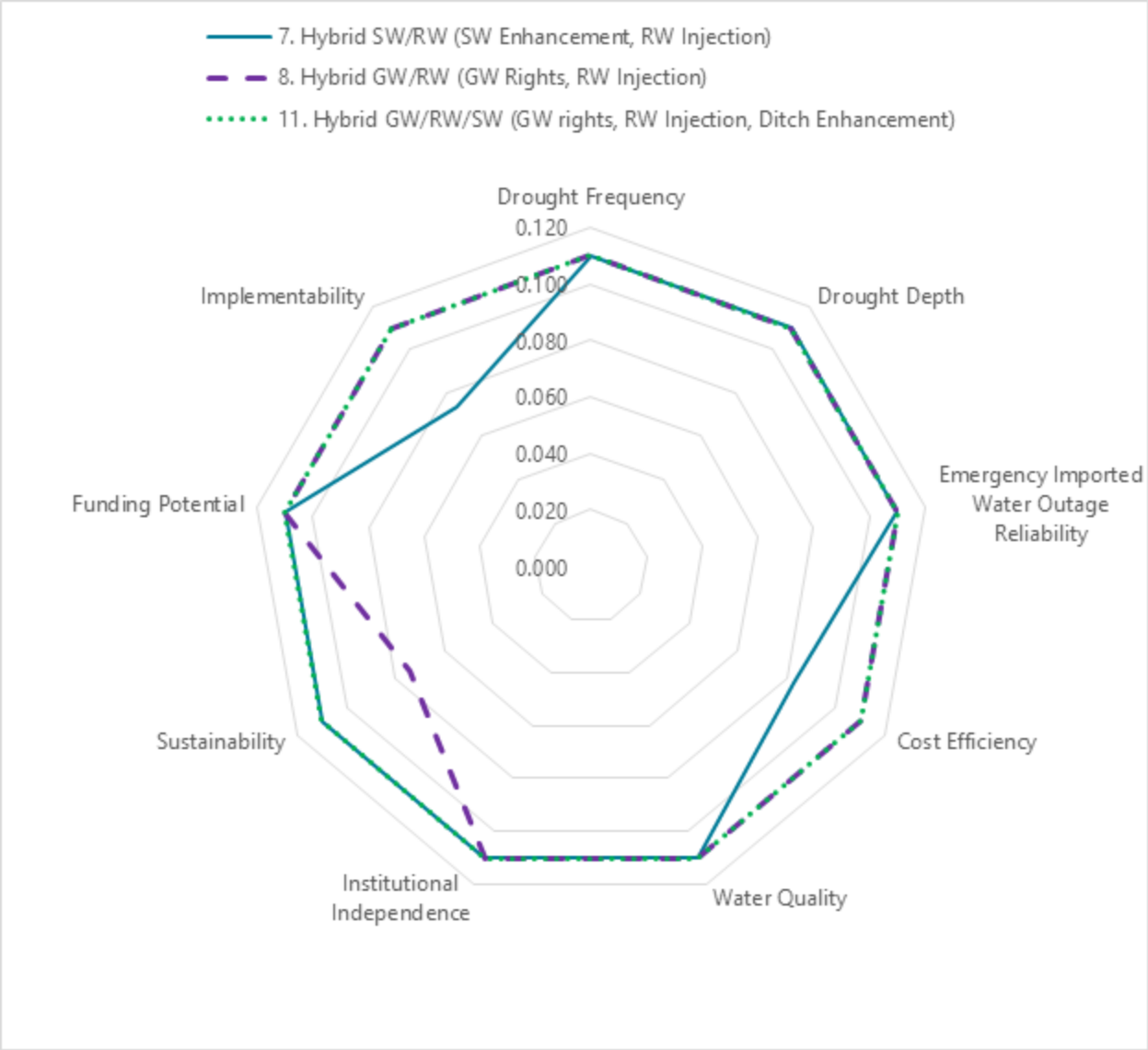
Figure 5-25 compares summarizes the performance for each alternative based on the results presented in **Table 5-14**. Alternatives that primarily rely on imported water, particularly alternatives 1 and 2, are noticeably lower in overall scoring relative to the other hybrid alternatives. The lack of diversity in these portfolios makes these alternatives susceptible to drought impacts, emergency imported water outages, and water quality degradation. These alternatives also provide less institutional independence and are less sustainable and have lower funding potential. Another notable result is that the hybrid alternatives tend to be the highest scoring. Hybrid alternatives that incorporate local water supply development, such as alternatives 3, 7, 8 and 11, rely on water supplies that are less susceptible to drought impacts and emergency imported water outages, provide greater institutional independence, and have greater funding potential. These alternatives also have less potential to impact water quality in the Basin.

Figure 5-25: Alternatives Scores



The SWRP process included the evaluation of results internally with PWD staff to interpret these multi-criteria evaluation results. For a planning project with the importance and relevance of the SWRP, an aggregated numerical index from quantitative analysis cannot dictate a final decision alone, even though it represents an invaluable parameter for decision-making. To facilitate decision-making, the top three scoring alternatives were compared as part of a tradeoff analysis to present and discuss the pros and cons of the alternatives. Figure 5-26 plots the scores of Alternatives 7, 8 and 11 on a radar-style chart with a criteria on each axis, with better scores plotted on the outer rings. As shown in the chart, these three alternatives score similarly under most criteria, including drought frequency, drought depth, emergency imported water outage reliability, cost efficiency, water quality and institutional independence. Alternative 7 scores slightly lower under implementability due to the increased permitting requirements needed for the option to increase sediment removal in Littlerock Reservoir. Alternative 8 scores slightly lower under sustainability due to having less options that would improve stewardship of local surface water resources. Therefore, Alternative 11 scored equal to or better in all categories as compared to Alternatives 7 and 8.

Figure 5-26: Evaluation Comparison for Alternatives 7, 8 and 11



Overall, Alternative 11 ranks the highest relative to the other alternatives, and is therefore, the preferred alternative in this SWRP. The implementation and financing plan for this preferred alternative are described in the following chapters.

5.4 Analysis of Preferred Alternative with Delta Conveyance Project

The California Department of Water Resources (DWR) has been working to improve SWP infrastructure used to convey water through the Sacramento-San Joaquin Delta (Delta) from the Bay area to Southern California. The proposed Delta Conveyance Project will develop new infrastructure facilities in the Delta to guard against disruptions caused by sea level rise, the hydrologic effects of climate change and seismic threats.

The proposed Delta Conveyance Project, as identified in the Draft Environmental Impact Report (EIR) (DWR, 2022a), is projected to increase Delta water exports, including an increase of 13% of Table A deliveries in an average hydrologic year and 23% increase of Table A deliveries in dry and critical water years under existing (2020 hydrology) conditions. Article 21 deliveries are projected to increase by 254% in an average year and 3% in dry and critical years under existing (2020 hydrology) conditions. Under 2040 hydrology conditions, Table A deliveries are projected to increase by 16% in an average year and by 35% in dry and critical years. Article 21 deliveries are projected to increase by 185% in an average hydrologic year and *decrease* by 22% in dry and critical years under 2040 hydrology conditions.

The reliability of supply was modeled with the expected changes in Table A and Article 21 deliveries due to the Delta Conveyance Project under the baseline scenario and with the preferred alternative, the results of which are shown in **Table 5-15.** The improved reliability from the Delta Conveyance Project is projected to decrease the frequency and depth of unmet demand in both the baseline and preferred alternative. However, there are still significant benefits in the reduction of unmet demand in the preferred alternative as compared to the Baseline.

Table 5-15: Summary of Unmet Demand Under with and without Delta Conveyance Project (2050 Demand)

	Without Delta Conveyance Project		With Delta Conveyance Project	
	Baseline	Preferred Alternative	Baseline	Preferred Alternative
Frequency of unmet demand during droughts	26%	3%	21%	1%
Average unmet demand during droughts (AFY)	6,700	5	5,500	2
Frequency of unmet demand (above 20%)	28%	0%	22%	0%
Average depth of unmet demand (for years of unmet demand over 20%)	7,900	0	7,300	0
Maximum unmet demand (AFY)	10,400	80	9,600	75

6. IMPLEMENTATION

6.1 Preferred Alternative Summary

The preferred alternative selected through the SWRP process is one which maximizes local supplies and facilities to meet future growth and increases storage of water in the Antelope Valley Basin to meet demands during times of imported water shortage. The preferred alternative includes the following strategies:

- Maximize current Table A water usage
- Maximize beneficial use of recycled water through implementation of Pure Water Antelope Valley (AV)
- Store imported water in the Antelope Valley Basin via the Upper Amargosa Creek Project
- Store recycled water in the Antelope Valley Basin via injection
- Maintain storage capacity in Littlerock Reservoir through sediment removal
- Improve Palmdale Ditch to reduce water loss
- Add additional pumping capacity to access stored water during times of shortage
- Continue active conservation programs

The water supply targets for the preferred alternative are shown in **Table 6-1**.

Table 6-1: Water Supply Targets for the Preferred Alternative

Water Supply Element	Current	Target for 2050
Supply Volumes (average)		
Imported Water - Potable - Recharge	 6,400 AFY 0 AFY	 9,600 AFY[1] 1,200 AFY[1]
Groundwater Pumping	8,000 AFY	11,200 AFY
Littlerock Reservoir	3,000 AFY	4,500 AFY
Recycled Water - Non-potable - Recharge via injection	 100 AFY 0 AFY	 100 AFY 5,000 AFY
Facility Capacities		
Leslie O. Carter WTP (Carter WTP)	35 mgd	35 mgd
Pure Water Treatment	0 mgd	5 mgd
Injection Wells	0 mgd	4.5 mgd
Production Wells	9.8 mgd	32 mgd
Water Storage in Antelope Valley Basin	0 AF	32,500 AF

2. Actual volume of imported water used will vary significantly depending on Table A allocations. In years of lower imported water availability, it's assumed that pumping will be increased to meet demands.

6.2 Implementation Plan

This implementation plan outlines elements to be considered as PWD moves forward with implementing the preferred alternative, including:

- Articulating the objectives to be achieved with each water resources strategy
- Identifying what activities need to take place to achieve those objectives and when they need to be implemented
- Identify what decisions need to be made and when to commit PWD resources
- Summarize the costs associated with these activities and decisions
- Identify what uncertainties may impact implementation

This implementation plan is designed to serve as a guide for PWD as it proceeds with developing new water resource capabilities. The strategies addressed include the following elements:

- Imported water
- Groundwater
- Recycled water
- Littlerock Reservoir
- Conservation

6.2.1 Imported Water

PWD's strategic objectives for managing imported water are:

- Support projects and initiatives that increase the resilience of State Water Project Supplies
- Increase storage of SWP supplies in the Antelope Valley Basin
- Maximize use of existing imported water supplies

To achieve these strategic objectives, PWD will pursue the following strategies:

1. **Support State Water Project System Management and Operation:** The planning, operation, and management of the SWP system is continuing to evolve as plans and contingencies are made for conveyance improvement to the Delta, new surface storage, and changes to water exchange/transfer policy and oversight. It is incumbent on PWD to be closely involved in discussions and decisions that may affect either the reliability or cost of imported water to PWD.

2. **Bank Imported Water in Antelope Valley Basin Storage Projects:** The State Water Project is expected to continue to have fluctuations in the amount of water available to State Water Contractors, and even experience greater fluctuations as climate change impacts hydrology. To take advantage of increased volumes of imported water in wet years, PWD should take advantage of imported water recharge projects in the Antelope Valley Basin to store imported water for use in dry years.

3. **Maintain Flexibility for Future Surface Water Treatment:** While the recommended strategy utilizes groundwater pumping to meet future delivery needs rather than surface water treatment, PWD should nevertheless maintain its ability to implement water treatment in the future. This

capability may be needed due to changes in water quality regulations, deterioration in imported water quality, or a possible future shift in PWD's water resource strategy for other reasons.

6.2.2 Groundwater

PWD's strategic objective for managing and developing groundwater are:

- Be able to pump stored water to meet demands during imported water shortages
- Establish and operate recharge facilities to offset proposed pumping increases
- Leverage excess stored water to generate capital for PWD projects
- Increase PWD's groundwater production rights

To achieve these strategic objectives, PWD will pursue the following strategies:

1. **Maintain existing pumping capacity:** PWD should proceed with the rehabilitation and replacement of its wells as recommended in the 2020 Well Rehabilitation Prioritization Program to maintain current pumping capacity.

2. **Install new production and injection wells:** PWD should proceed with installing additional well capacity to both meet demand growth and pump stored water during years when SWP allocations are low. To offset increased production, PWD should proceed with installing injection wells to be used for the injection of purified water from the Pure Water AV advanced water treatment plant.

3. **Pursue an agreement(s) with the Watermaster to store water long-term in the Antelope Valley Basin:** The recommended strategy relies on storage of sufficient water in the Antelope Valley Basin to meet years of imported water shortage. Given that these shortages can last for multiple years, it will be necessary to develop an agreement(s) with the Watermaster to allow for multiple-year storage of up to 32,000 AF of water in the basin.

4. **Continue Support of Antelope Valley Basin Storage Projects:** Historically, PWD has had sufficient supplies to meet demands, even during years of drought. As demand increases, meeting demand during periods of shortage will require PWD to store water. PWD should continue to support the development of water banking in the Antelope Valley Basin, and store excess imported water available in wet years for use during droughts or imported water outages.

5. **Purchase additional groundwater rights:** While recharge of recycled and imported water will help to offset pumping capacity in the near- and mid-term, in the long-term PWD may need to purchase additional groundwater rights to meet demand growth. PWD should pursue opportunities in the future to purchase groundwater rights from other producers in the Basin.

6.2.3 Recycled Water

PWD's strategic objective for managing and developing recycled water are:

- Maximize the use of recycled water within PWD's service area to limit the need for more imported water

- Obtain funding and partnerships to offset the cost of Pure Water AV

To achieve these strategic objectives, PWD will pursue the following strategies:

1. **Continue design, pilot testing and construction of an advanced water treatment facility**: PWD has been working towards implementation of an advanced water treatment project for recycled water for several years, and is currently in the pilot testing phase. PWD should continue with this work with the goal of constructing a full-scale facility to augment water supplies in the service area.

2. **Pursue funding and partnership opportunities for Pure Water AV:** PWD intends to pursue grant and State Revolving Fund (SRF) loan funding to help offset the construction cost of Pure Water AV. In addition, it may be possible to partner with other agencies to construct a larger advanced treatment facility that will help reduce the unit cost of advanced treated water.

6.2.4 Littlerock Reservoir

PWD's strategic objective for managing local surface water are:

- Continue Littlerock Reservoir sediment removal activities
- Improve Palmdale Ditch to reduce water loss

To achieve these strategic objectives, PWD will pursue the following strategies:

1. **Remove sediment from Littlerock Reservoir to maintain current capacity:** PWD's ongoing sediment removal activities have allowed for the maintenance of the current reservoir storage capacity. PWD should continue with these efforts to remove the approximately 38,000 cubic yards of annual sedimentation every one to two years, depending on sediment inflow to the reservoir.

2. **Enclose Palmdale Ditch:** Obtain funding assistance from the U.S. Bureau of Reclamation and other sources to convert the unlined, open portions of Palmdale Ditch to a closed pipeline. PWD should move forward with this project to prevent future water loss due to seepage and evapotranspiration and increase the yield from Littlerock Reservoir.

6.2.5 Conservation

PWD's strategic conservation objectives:

- Continue to expand conservation efforts on a regular basis (e.g. every 3-5 years), attracting outside funding to help expand programs
- Maintain and update policies as needed to reduce water waste and preserve PWD's ability to achieve sufficient conservation savings in the event of a water shortage emergency
- Achieve conservation objectives set by the State as part of Assembly Bill (AB) 1668 and Senate Bill (SB) 606

To achieve these strategic objectives, PWD will pursue the following strategies:

1. **Continue to Monitor and Report Effectiveness of Conservation Programs:** PWD should continue to track and report conservation savings on an annual basis, including tracking the installation of conservation devices (both from passive and active programs) and the penetration and results of other programs. By tracking and reporting this information, PWD will be able to accomplish a number of things including: evaluate the effectiveness of programs so that resources can be better targeted, develop a conservation track record for use when pursuing grant funds, and benchmark progress as compared to other water districts.

2. **Regularly Review and Coordinate PWD and City of Palmdale Ordinances and Policies:** The City of Palmdale is an active partner with PWD in conservation efforts and has implemented its own measures to save water at its parks and other facilities. In addition, the City has taken a lead role in creating land use ordinances that restrict outdoor landscaping to reduce water consumption. PWD has also developed a water budget rate structure that incorporates water use targets. PWD should regularly review with the City its conservation targets and programs to identify areas where the City and PWD can work together to produce more effective measures, messaging and enforcement of conservation ordinances.

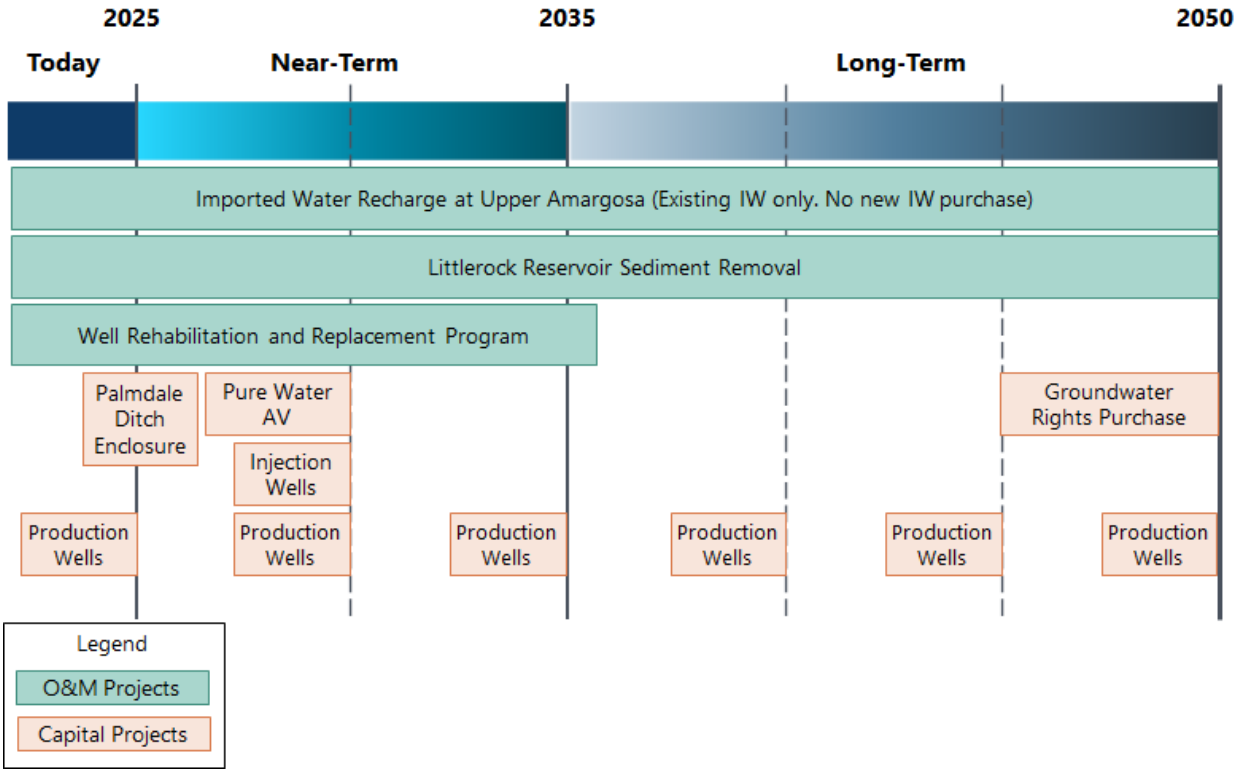
3. **Coordinate Communications with Other Antelope Valley Water Purveyors:** PWD, working through the Antelope Valley Integrated Regional Water Management (IRWM) Program or other collective forum, should coordinate its conservation efforts with others to make sure messaging, materials, effectiveness reporting and other communication efforts are consistent and supportive of each other's programs.

4. **Pursue Grant Funding to Improve Program Cost Effectiveness:** To expand implementation by improving cost effectiveness, PWD should routinely pursue grant funding for conservation programs that are regularly offered through the Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (USBR). By developing a consistent program and demonstrated track record, PWD will be able to establish a positive relationship with these potential funding agencies as new grant funds become available.

6.3 Implementation Schedule

The proposed schedule for project implementation is shown in **Figure 6-1**, and is divided into O&M and capital projects. Projects that will maintain current facilities or won't require capital outlay are designated as O&M projects, while new facilities that will require capital outlay are designated as capital projects. In the near-term, PWD will continue to recharge imported water at the Upper Amargosa Creek Project, continue to remove sediment to maintain capacity at Littlerock Reservoir, and will implement the well rehabilitation and replacement program. It's assumed that the Palmdale Ditch enclosure and Pure Water AV projects will be implemented in the near-term, along with necessary injection and production wells to produce stored water. Given that significant capital projects will be implemented in the near-term, additional new supply from groundwater rights purchases and new production wells are not expected to be required until the end of the planning period (2045 to 2050).

Figure 6-1: Implementation Schedule



6.4 Projected Costs

Projected costs for implementing the preferred alternative according to the above schedule are shown in **Table 6-2**. Capital costs reflect the latest planning-level costs available for each project in 2022 dollars. O&M costs reflect the estimated annual O&M for each project in 2022 dollars, once the project has been implemented. Total costs reflect the total capital and O&M cost for the overall planning period which extends from 2025 to 2050. It should be noted that capital costs do not reflect awarded or potential grant or loan funding. Potential project funding will be discussed in the next chapter.

Table 6-2: Preferred Alternative Projected Costs for the Planning Period (2025 to 2050)

Project	Capital[1] (2022 dollars)	O&M[2] (2022 dollars)
Maintenance of Existing Supply Reliability and Facilities		
Imported Water Recharge at Upper Amargosa Creek	$14 million	$466,000/year
Littlerock Reservoir Sediment Removal	$0	$1,900,000 every other year
Well R/R Program	$49 million (well replacement)	$1.34 million (total for well repair and rehabilitation)
Palmdale Ditch Enclosure	$18.1 million	$4,400/year
New Supply Projects		
Pure Water AV (including advanced treatment plant, injection wells and production wells)	$152.6 million	$6,120,000/year
Groundwater Rights Purchase (includes rights and new wells)	$29.5 million	$410,000/year
Total Net Present Value[3]	**$169.8 million**	**$36.7 million/year**

1. Capital costs do not include grant funding that has already been awarded.
2. O&M costs are escalated to account for changes in the cost of power, materials and chemicals at the following rates: imported water conveyance is escalated at an average of 2%, Carter WTP treatment escalated at 3.3%, groundwater pumping escalated at 4.1%, other O&M costs escalated at 2.6%. Sources: PWD 2019 rate study and DWR Bulletin 132-22 Appendix B.
3. Assumes a 3% rate over the 25-year implementation. Does not consider funding and financing costs.

6.5 Adaptive Management

Implementation of the SWRP will be a long-term process and is expected to face uncertainty in the future. While the SWRP was developed under certain assumptions that account somewhat for uncertainty, conditions may change and alter how the SWRP is implemented. The preferred alternative was developed based on the current understanding of projected conditions and should be adaptable to future conditions.

PWD will apply an adaptive management approach as a tool to ensure successful implementation of the SWRP. Adaptive management is a flexible management strategy that employs monitoring and experience to inform decision making in the face of uncertainty. Adaptive management will allow PWD to periodically assess how internal and external conditions have changed and determine if and how implementation should change to achieve SWRP goals and objectives. **Table 6-3** provides a listing uncertainties and potential

impacts that may influence the way the SWRP is implemented, as well as responses that PWD may take to address the uncertainties.

Table 6-3: Uncertainties, Potential Impacts and Responses

Uncertainties	Potential Impacts	Responses
Population Growth	Population in PWD's service area is expected to grow	Continue to monitor growth in population to determine if growth is higher or lower than expected and adjust the timing acquisition of new groundwater rights until projected demand reaches needed levels.
Delta Conveyance Project	The Delta Conveyance Project (DCP) will increase SWP reliability but also increase costs.	Support for SWP improvements is necessary to maintain reliability. Continue to monitor the status of the DCP and expected costs for Delta improvements.
Climate Change	Climate change may reduce reliability of imported supplies, create more variability in local precipitation and increase demand due to increasing temperatures.	Pursue strategies to increase local supply sources and increase local storage of supplies.
Water Quality Regulations	Federal and State drinking water quality regulations change over time and new regulations may reduce the availability of PWD groundwater supplies.	Continue to monitor upcoming drinking water quality regulations as compared to local supply quality.
Availability of Grant Funding	PWD plans to offset the costs of some capital projects with grant funding, but funding program availability varies from year to year.	Tracking funding programs to ensure that PWD is positioned to apply for funding as it becomes available and that the timing aligns with project implementation.
Consumer behavior and device penetration	Conservation effectiveness is directly related to consumer behavior and penetration of conservation devices. However, both are difficult to predict without a long local track record and thus are difficult to rely upon.	Take a measured approach to developing a conservation program, monitoring performance on a regular basis to make program adjustments.

As part of developing this SWRP, tools were developed that can inform implementation of the preferred alternative, including the following:

- **Demand Forecast Tool** – The demand forecast spreadsheet tool can be used to project demands for different demand sectors based on selected growth and unit factors. Should growth not follow projections, the spreadsheet tool can be updated to reflect changes and provide updated demand forecasts.
- **WEAP systems model -** The WEAP systems model simulates PWD's supply and production to account for uncertainty and risk of future water supplies and helps to evaluate the ability to meet future needs. Should reliability of supplies or major system changes occur, the WEAP model can be updated to reflect these changes and provide updated reliability projections.
- **Integrated Planning Tool –** The integrated planning tool serves as an options and alternatives database that allows for the building and evaluation of alternatives. Should PWD need to revise alternatives in the future, the tools allow for changes or new alternatives to be created and scored.

7. FINANCING PLAN

The purpose of the financing plan for the SWRP is to clarify the principles by which PWD will use to guide future financing measures needed to implement the plan and to outline a proposed funding strategy.

7.1.1 SWRP Financing Principles

The costs associated with implementing the SWRP are significantly higher than the costs to develop the current PWD system. As such, it is important to develop a set of guiding principles for PWD to use to ensure an equitable and appropriate allocation of costs.

For this SWRP, the proposed financing principles are:

- New customers establishing new connections must pay for new supplies and the infrastructure to deliver those supplies.
- Current and future customers must pay for reliability of current supply up to budgeted allotments for indoor and outdoor usage. This would include the costs to maintain Littlerock Reservoir, rehabilitate and replace existing wells, PWD's share of improvements to the Delta, and improvements needed to meet water quality standards.
- Those customers choosing to use more than their allotment will be responsible to fund higher cost water reliability projects including conservation and recycling.
- Current and future customers are to pay for all O&M costs
- Property owners pay fixed costs for the State Water Project
- Other system enhancements need to be able to pay for themselves without subsidy from other revenue sources.
- Financing strategy needs to provide for supply reliability assuming no future development or delayed future development.

7.1.2 Financing Options

PWD has the following financing options available to fund improvements recommended in the SWRP. These options are:

- **Capital Improvement Fee - Water Supply**: Currently PWD assesses a Capital Improvement Fee (CIF) connection fee with infrastructure and water supply components that is designed to pay for new distribution system infrastructure and water supplies based on the project's requirements.
- **Water Rates**: Water rates are designed to produce revenues to cover a variety of costs and encourage efficient water use through indoor and outdoor allocations or water budgets. These include ongoing operation and maintenance costs to deliver water, administrative costs, conservation costs and the cost to obtain supplemental water supplies to maintain system reliability, and the costs to meet new water quality requirements. Water rates are also used to provide funds to various reserve accounts and to help fund debt repayment.

- **Municipal Debt**: Municipal debt instruments (bonds, certificates of participation, etc.) are commonly used to finance major capital projects. Terms generally range from 5 to 30 years with low to moderate interest rates depending upon PWD's credit rating at the time.
- **State Revolving Fund (SRF) Loan**: The USEPA provides states with funding for the SRF loan program to provide low-interest loans for clean water improvement (i.e. wastewater) and drinking water programs. Historically, loans for the drinking water program are limited to low-income communities facing public health threats to their water supplies and thus is not a likely source of funding for PWD's SWRP. However, loans (and occasionally grants) are available from the clean water program for water recycling projects.
- **Property Tax Assessment**: Property tax assessments can be used to help cover the fixed costs associated with water supply facilities. Currently, PWD utilizes a tax assessment as authorized by the State to fund fixed costs associated with the State Water Project. The assessment could be used to fund PWD's portion of the fixed costs associated with modifications to the Delta or new storage projects implemented by DWR to improve the reliability of the SWP.
- **Grants**: Grants are made available through various State, Federal, and non-profit organizations to provide funding for specific programs. At the State level, grants are generally made available through voter-approved initiatives or through grants from the Federal government funneled through State agencies. Meanwhile, grants at the federal level are made through legislative appropriation to federal agencies such as the USEPA, the USBR and the USACE. In general, grants are highly competitive and should not be considered reliable sources of funding for long-term planning. That said, PWD should actively pursue grants to fund multiple elements of this SWRP including conservation, water recycling, and groundwater storage.
- **Partnership Opportunities**: Partnership opportunities on groundwater storage and recycled water should be explored as potential ways to help finance projects. Potential partners may include both parties within the Antelope Valley (e.g. AVEK, City of Palmdale, and Waterworks District No. 40) as well as parties outside (e.g. Metropolitan Water District, Los Angeles Department of Water and Power). However, given the specific nature of these opportunities, these will need to be approached on an opportunistic basis and are not assumed as part of the financing plan for the SWRP.

In PWD's setting, because the majority of the water supply need is expected to be driven by new development, the most appropriate financing mechanisms for PWD to rely upon are water supply connection fees, municipal and SRF loans, and water rates. While PWD should aggressively pursue grants, and possibly consider using a property tax assessment to fund additional fixed costs, neither of these will be significant to cause a substantial change in financing approach.

7.2 Projected Cash Flow Requirements

Projected cash flows for the preferred alternative are illustrated in **Figure 7-1** below. These costs include the cost of production to meet existing demand plus new demand. It is important to note that the bulk of capital expenditure occurs over the next 10 years. In addition, O&M costs experiences a dip after 2035 due to the assumption that imported water lease agreements are not renewed.

Figure 7-1: Project Capital Outlays and O&M Costs for the Preferred Alternative

7.3 Financing Strategies

This section outlines proposed financing strategies for the preferred alternative.

7.3.1 Capital Improvement Fee - Water Supply

The analysis below has been used to identify at what level water supply connection fees should be set to recover capital and financing costs with the development of new water supplies. The results of this evaluation indicate that a water supply connection fee of approximately $37,500 per acre-foot would be needed to fund the capital and debt service costs through 2050. The relationship between capital costs, debt service, connection fees and growth in connections is illustrated below in **Figure 7-2**. The connection fee was set such that a Water Supply Fund would achieve a near-zero balance by 2050.

For planning purposes, this analysis was designed to identify an appropriate connection fee. It should be noted that the precise mixture of debt to cash expenditures for capital outlays shown in **Figure 7-2** has not been optimized to ensure that the water supply fund balance is always positive and sufficient to meet debt coverage ratio requirements (generally 150% of annual debt service).

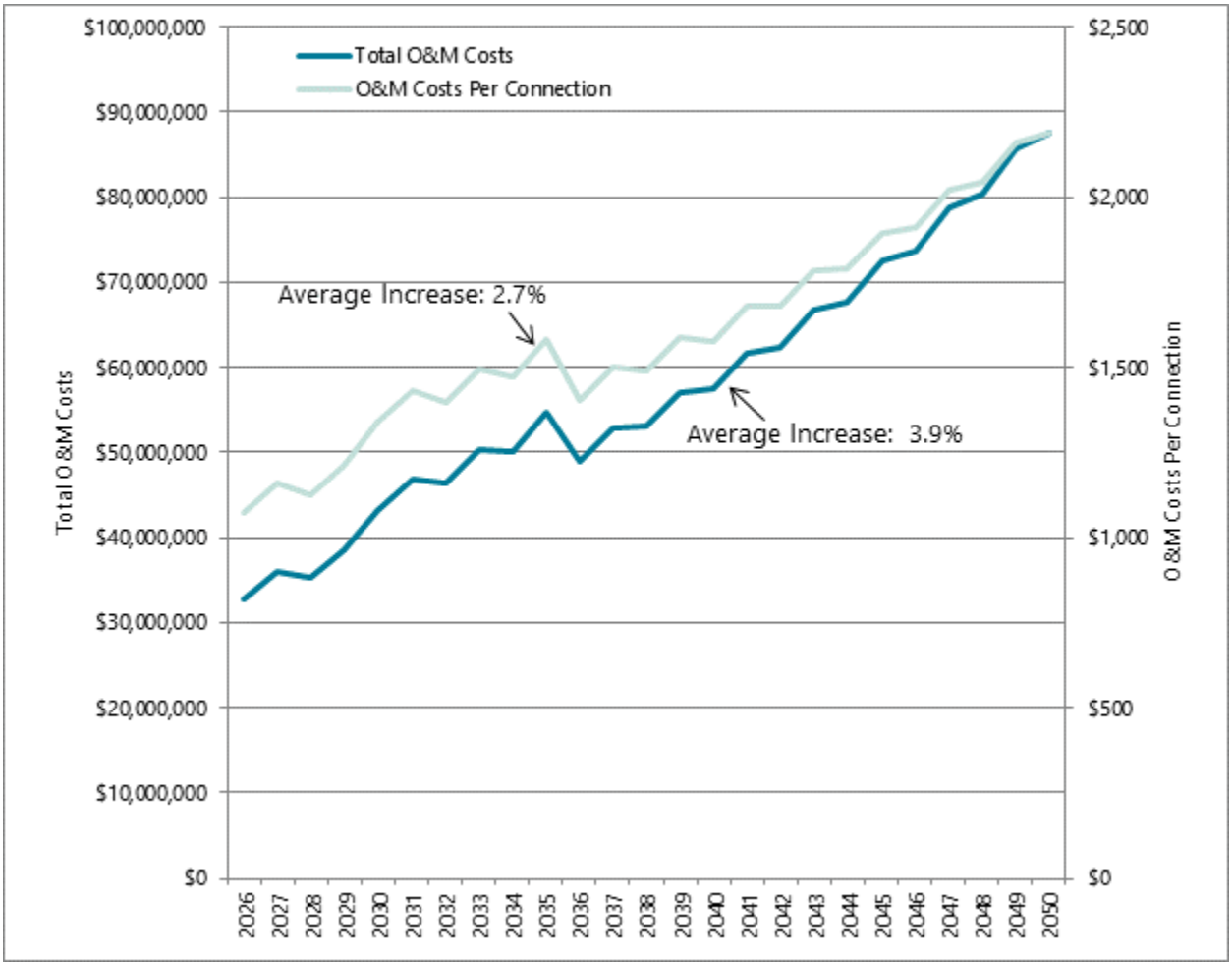
Figure 7-2: Relationship Between Number of Connections and Financing Elements for Strategy

7.3.2 Water Rates

The SWRP presumes that water rates will be used to cover ongoing O&M costs associated with new supplies as well as existing O&M costs. For the SWRP, an analysis was performed to examine the O&M costs to evaluate the projected annual cost increase and the increase in cost per connection. The analysis did not attempt to determine what future water rates should be but rather if the expected increase in O&M costs were reasonable and could be expected to be covered by reasonable rate increases.

Figure 7-3 below illustrates projected average O&M costs (in 2022 dollars) from 2025 to 2050 and projected costs per connection. Results show that while O&M costs increase on average at 3.9% annually, the cost per connection increases on average 2.7% annually.

Figure 7-3: Projected O&M Costs



7.4 Financing Plan Summary

To summarize, the recommended financing strategy for the SWRP involves the following steps:

- Implement a water supply connection fee of $37,500 per acre-foot and escalated every year by the rate of inflation.
- Use a combination of municipal debt financing, SRF loans, and collected water supply connection fees to fund capital projects identified in the SWRP.
- Continue to maintain current approach to setting water rates to cover O&M expenses associated with the SWRP.
- Further evaluate using property tax assessment(s) to fund potential future fixed costs associated with system improvements such as the well rehabilitation program and imported water reliability improvements. It should be noted that this may require voter approval as required by Proposition 218.

- Track and pursue grant opportunities for conservation, water recycling, and groundwater storage projects.
- Further evaluate partnership opportunities and engage with potential partners for recycling and groundwater storage projects as these projects evolve.

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APPENDIX A: WEAP MODEL ASSUMPTIONS

WEAP Model Assumptions

Imported Water

- Adjusted to incorporate climate change based on 2021 DWR Delivery Capability Report modeling results
- Further adjustments made to SWP Table A deliveries to reflect the average the last 10-years of deliveries to PWD (9,200 AFY)
- Diversion to Lake Palmdale (capacity = 30 cfs)
- Butte Water assumed to end in 2035
- LCID transfer assumed to end in 2035 (75% of Allocation)

Groundwater

- Pumping rights (2,770 AFY) and federal reserve (1,430 AFY) consistent with the Antelope Valley Basin Judgment. Safe Yield will be reassessed in 2032 and the change will reflect using the established protocol outlined in the Judgement. Currently, it is 82,300 native and 110,000 AF with return flows.
- Natural inflows adjusted to incorporate climate change based on DWR SGMA climate change factors to estimate reductions in groundwater availability due to climate change
- Imported water return credits: 39% of water imported by PWD
- Unused groundwater can be carried over to future years
- Includes banking to the Upper Amargosa Creek Recharge Project in years where imported water is available (PWD has a right to recharge 1,378 AF annually into the Upper Amargosa Creek Recharge Project with 10% leave-behind)
- Maximum annual pumping is 11,000 AF (approximately 9.8 mgd)

Littlerock Creek and Reservoir

- Historical inflow adjusted to incorporate climate change based on DWR SGMA climate change factors for streamflow
- 500 AF minimum water level maintained in Littlerock Reservoir through Labor Day, then use anyway we want afterward.
- Diversion to Lake Palmdale via Palmdale Ditch (capacity = 25 cfs, assumes 25% loss)
- Evaporation rate at the reservoir is equal to historical average

Lake Palmdale and Carter WTP

- Lake Palmdale capacity = 4,130 AF (assumed to maintain 3812 AF until Oct 1)
- Diversion to Carter WTP (capacity = 35 mgd)
- Carter WTP assumed to be shutdown 6 weeks of the year starting in December
- Evaporation rate at the reservoir is equal to historical average

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